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# FOREST MANAGEMENT UNITS AS A MANAGER OF WATERSHED MANAGEMENT (IMPLEMENTATION OF ONE WATERSHED, ONE PLAN, ONE MANAGER)

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**KATA KUNCI**

*Forest Management Units, Managers, Watershed Management*

**ABSTRACT**

*Watershed management is very important because there is a decrease in the quality of the environment in the watershed. Current problems in watershed management are due to the existence of an egosectoral, not yet integrated and the absence of institutions that specifically and intensely manage watersheds from upstream to downstream well through community empowerment programs and soil and water conservation activities. Forest Management Units as a site-level organization is present as a solution to the problem of watershed management by becoming a watershed manager. The watershed manager functions to coordinate, manage, and manage, together with other stakeholders to achieve watershed management objectives.*

## INTRODUCTION

Forest Management Units (FMU) are in accordance with the mandate of Law 41 of 1999 as a concept of forest management units or institutions that are in accordance with the main function and designation to the site level that can be managed efficiently and sustainably (Andi, 2020). The principle of forest management based on Forest Management Units aims to create sustainable forests and prosperous communities. Forest Management Units is likened to a family that has a house and yard where the land has been officially certified and his house already has an IMB (permission to build a building), the family of the householder will certainly arrange, care for and maintain his home and yard well. Currently the types of FMUs include protected Forest Management Units, Conservation Forest Management Units and Production Forest Management Units, the distribution of these types of Forest Management Units is based on the main function of the forest whose area is dominant. The establishment of the FMU is oriented to two basic things, namely the preservation of forests as a function of protection and water use and welfare community through access and involvement in the forest (Hasana, Novarino, & Azel, 2019). The creation of sustainable forests has a good effect on hydrological functions, especially on improving water quality, regulating and balancing the quantity of water in this case reducing surface flow and keeping the base flow stable, and reducing sedimentation in the watershed.

Based on Government Regulation No. 37 of 2012 Article 1 explains that the Watershed, hereinafter referred to as a watershed, is a land area which is a unit with the river and its

tributaries, which functions to accommodate, store and drain from rainfall to the lake or to the sea naturally, the land boundary is the topographic separator and the sea boundary to the waters which are still affected by land activities. The wider the forest cover in a watershed, the better the hydrological response, of course also takes into account geological and soil factors (Melesse & Abtew, 2016). Watershed is a place where the natural resources of vegetation, land, water and humans use it to fulfill their lives. In order for the welfare of the community in the watershed to increase, the existing resources in the watershed need to be utilized and developed optimally and sustainably through watershed management planning efforts (Reddy, Saharawat, & George, 2017).

## RESEARCH METHODS

Metodologi dapat terdiri dari bahan; prosedur penelitian; instrumen dan analisis data; Pemodelan. Setiap bagian dari metodologi dapat ditulis dalam subbagian yang berbeda, menggunakan tingkat yang berbeda.

Persamaan dapat muncul dalam teks atau sebagai item terpisah, dalam kasus seperti itu harus ditunjukkan oleh angka dalam tanda kurung di margin kolom kanan. Persamaan semacam itu disebut dalam teks sebagai Eq. (1), dan seterusnya.

## RESULTS AND DISCUSSION

### A. Watershed Management Problem

So far, the management of the watershed is felt to be still jammed or stumbling and even walking in places where there have not been many changes that have been felt even though there have been many watershed management programs. One of the problems is because there is no special agency that really takes care of watershed management from upstream to downstream (Erdogan, 2013), various ministries also participate in efforts to manage watersheds, but without good coordination. Another problem is also because of the vast area of the watershed that must be managed and the complexity of the problems found in a watershed (Wang et al., 2016). Current watershed management planning is still partial and less participatory, each sector still works alone, the division of tasks and functions is not clear, activities tend to be still selfsectoral, land management, conservation and rehabilitation are still dependent on the central budget, the community and community parties, weak law enforcement against violations, low utilization of environmental services in the watershed, and weak management at the site level.

Watershed management that has been occurring so far is only in planning fields, which rarely touches on the action (Furber, 2018). The DAS Forum, which is expected to be a unifier of various stakeholders related to watershed management, is often jammed in the field of action due to coordination problems, sectoral egos and insufficient funding (Qumba, 2021). Coordination which is key to watershed management is often easy to pronounce but difficult to implement. Agencies related to watershed management often only carry out sectoral and project activities, involving very few communities both as subjects and objects of watershed management (Cosgrove & Loucks, 2015). The activities carried out are often unsustainable so the results are not optimal. Congestion in watershed management in Indonesia is largely due to the absence of institutions that specifically and intensely manage watersheds from upstream to downstream even to sub-watersheds that are able to guarantee the ongoing watershed

management activities through community empowerment programs and soil and water conservation activities.

**B. Watershed Management**

Watershed management is a human effort to regulate the reciprocal relationship between natural resources with humans in the watershed and all its activities, in order to realize the sustainability and harmony of ecosystems and to increase the sustainable use of natural resources for humans. Watersheds can be likened to a system that gets input (input) and is processed to produce output (output) (Asdak, 2010) and (Becerra, 1995). Watersheds stretching from the middle upstream to the downstream are intact interrelated ecosystems between the upstream region, the middle region and the downstream area, and even the impact reaches the coastal area. Because it is a whole ecosystem that is interrelated, a holistic (comprehensive) watershed management plan is needed from upstream to downstream, and a manager is needed to carry out planned watershed management activities.

Watershed Managers are fully responsible for watershed management, able to coordinate and embrace various stakeholders, central and regional institutions, parties between disciplines, so as to create a sustainable watershed and provide welfare to the community within the watershed. In the preparation of watershed management plans there are several groups involved in the preparation, namely the government, the community, the private sector and volunteers (NGOs, universities, etc.). The public and the private sector are the main parties because they have a direct relationship with a policy, so it must be placed as a determinant in the decision making process (Utama & Berd, 2020).

**C. Forest Management Units as watershed manager**

Looking at the problems of watershed management that are so complex it is necessary to have a breakthrough in watershed management, namely the existence of managers who function to carry out watershed management to the site level. A watershed manager is someone who has the knowledge, experience and skills to be able to lead, control, organize, and manage, in order to achieve watershed management objectives that are included in the Forest Management Units work area. Why watersheds need to be used as boundaries of work areas in Forest Management Units, because watersheds are a whole ecosystem unit and there is a connection between upstream, middle and downstream. Watershed functions as a water supplier, flood control, erosion control and sedimentation. Why should Forest Management Units be watershed managers? As is well known that the institutions under the Ministry of Environment and Forestry that are responsible for watershed management are Office of Management Protected Forest Watersheds (BPDASHL) but administratively Office of Management Protected Forest Watersheds (BPDASHL) does not have different areas such as National Parks that have their own territories. Usually Office of Management Protected Forest Watersheds (BPDASHL) is located in the provincial capitals with the number of watersheds being handled is very large or very wide because it follows the administrative boundaries of the province. Office of Management Protected Forest Watersheds (BPDASHL) often finds it difficult if there are problems such as floods or landslides because, the source of the problem is in the remote and hard-to-reach area of the Office of Management Protected Forest Watersheds (BPDASHL) office location. Office of Management Protected Forest Watersheds

(BPDASHL) is also responsible for forest and land rehabilitation programs within a watershed, the success rate of the program is highly dependent on the active role of the instructor forestry as the frontline in knowing the field conditions and dealing directly with the community, especially farmers who do conservation, but Office of Management Protected Forest Watersheds (BPDASHL) does not have forestry extension agents, Office of Management Protected Forest Watersheds (BPDASHL) only has a forest ecosystem controlling officer (PEH) who is not provided with education knowledge and has no knowledge of field conditions that will have conservation activities, this has resulted in many forest and land rehabilitation activities that do not meet the targets. Not to mention added if there are parties, especially from universities, the private sector or the community who request data on the hydrological conditions in the watershed that happen to be not included in the watershed are restored so that the SPAS equipment has not been installed so that there is a vacuum in the data. Coupled with the mandate of Law No. 23 of 2014 concerning Regional Government in which the forestry sector is included in the governmental affairs of choice which results in the merging of the District Forestry Service to the Provincial Forest Service adding difficulties in terms of coordination to the regions related to watershed management.

Seeing this, the author encourages Forest Management Units to function as a watershed manager in the location of his working area (Naiman, 2012). Here the role of Office of Management Protected Forest Watersheds (BPDASHL) as a Technical Implementation Unit from the central government is to supervise watershed management activities carried out by the FMU. Some factors that make Forest Management Units suitable as watershed managers are: Forest Management Units are site level organizations, Forest Management Units have their own territory, Forest Management Units only carry out management (management) functions such as the previous Service, Forest Management Units have functional forestry extension officers and forestry police so that they guarantee the success of rehabilitation forest and land within the watershed. What role can the Forest Management Units take as a watershed manager, namely revamping watershed governance, addressing the proper location of the watershed management, targeting, appropriate and appropriate activities, increasing the success of land rehabilitation, forest protection, and soil and water conservation activities, because Forest Management Units will carry out planting, maintenance, data collection, protection, monitoring and evaluation. Forest Management Units acts as a field coordinator whose job is to coordinate various stakeholders and parties who play a role in watershed management (Orth & Cheng, 2018).

As a watershed manager, the FMU must be able to plan watershed management, namely a form of natural resource planning using a management unit in the form of a watershed (Santoso, Nurrochmat, Nugroho, & Santoso, 2019). Watershed managers must also know the condition of watershed characteristics in their working area, because the characteristics are characteristic or characteristic of each watershed. Watershed characteristics consist of morphometry, topography, soil, geology, vegetation, land use, hydrology, and human parameters (Apaydin et al., 2020). Each watershed will have different characteristics both natural and non-natural due to the results of human intervention. The characteristics of the watershed will vary in each management hierarchy, namely at the watershed, sub-watershed and sub-watershed levels. In addition watersheds are also classified based on their territories, namely local, regional, national and international watersheds, with the existence of hirakri, it

will cause differences in watershed management planning techniques that are tailored to the characteristics of the watershed.

## CONCLUSION

Remarks Watershed management with Forest Management Units as Managers should be implemented immediately because the level of watershed damage has increased from year to year. Most of the Forest Management Units boundaries follow the boundaries of forest area functions, only a few Forest Management Units follow the watershed boundaries, therefore harmonization and alignment of watershed areas can be carried out with boundaries of forest area and administrative functions, aligned so that the boundaries of regional functions can be harmoniously connected through the hydrology cycle. In addition, it is necessary to increase the capacity and quality of human resources and add supporting equipment so that FMU can become watershed managers.

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