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Actualization of local community participation in critical land management in Gorontalo

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Abstract. Land use regardless of conservation treatments can cause lasting damage to cultivated land. This has resulted in land degradation and serious problems for community management of critical land. The aim of this research is to actualize local community participation in critical land management in Gorontalo. This study used a literature review and observational approach by conducting discussions with the rehabilitation community. Data analysis used descriptive qualitative, by conducting data acquisition including information gathering, reduction, presentation, and drawing conclusions. The results of the study show that: (a) photographing the sustainability of critical land rehabilitation can be initiated by providing a demonstration plot of sample gardens managed using a participatory method. This increases the responsibility and authority of local communities. Types of plants are selected based on community needs in fulfilling their daily needs and associated with traditional ceremonies; (b) brainstorming on community participation shows its attention to planning, implementation, monitoring and evaluation. In general, the community needs continuous assistance, socialization, and additional rehabilitation funds. The management process prioritizes the "Huyula" tradition, by mobilizing community leaders and the cooperation of various stakeholders in its actualization; and (c) the failure of the project-based rehabilitation idea has resulted in the reality of stagnation and weakening of local community authority. Participation maneuvers decreased dramatically with the restraint of top-down patterns. Therefore, the transformation is carried out by doing integrated management between various government and private sectors. More importantly, the community should be managed in the framework of empowerment, because the nature, uniqueness and characteristics of the community are different, which give rise to various social institutions. In Gorontalo, the huyula spirit and customary series can be a motivator in managing critical land rehabilitation and greening the environment. Therefore, this idea needs to be supported and the formation of academic papers and village regulations that can be binding in the implementation of rehabilitation.

1. Introduction

Development is synonymous with change [1], there is reconstruction, modernization, innovation [2]. Change activities are interwoven in an organization that is influenced by the socio-cultural values of society [3]. Therefore, the essence of development is sustainable progressive change [4], which is based on ethical, economic and values of social change [2]. Facing development in agriculture will never be separated from the need for land. Excessive activity and lack of discretion in land use have resulted in instability of the land bearing capacity of the desired productivity. Even in many activities,



the community seems to be forcing the use of land for the development of commodities that are not suitable.

Land use regardless of conservation treatments can cause lasting damage to cultivated land. The problem of erosion is the most serious problem [5], and the biggest contributor to land degradation [6]. This trend has resulted in widespread destruction of agricultural land. Degradation that occurs and without conservation action and awareness to improvement will lead to the formation of critical agricultural land. This also happened in Gorontalo Province, which showed an increase in the area of critical agricultural land. The evaluation report by BPDASHL Bone Bolango has increased the criticality of land in three periods, namely in 2009, it reached 250 356.99 ha, in 2013 it reached 311317.79 ha, and in 2018, it reached 334483.38 ha. The extreme increasing trend occurred in 2009 to 2013 reaching 24.35%, while in 2013 to 2018 it tended to decline to reach 7.44%. However, from the data on the area of critical land, there is a significant increase in the field level. This data indicates that there are mistakes in land management and use, which have resulted in the expansion of critical land in Gorontalo. Coupled with the use of land that is not prudent and ignores conservation principles, it also adds to the long series of degradation of agricultural land.

Many sectors have tend to critical land, both government and private. However, in fact, the area of critical land continues to increase from time to time. Until now, the implementation of community participation is still limited to discourse and it seems that they are not fully given the authority to manage it. On the other hand, weak empowerment results in the community having less awareness to carry out critical land rehabilitation. As a matter of fact, when examined deeper, there has been neglect of agricultural land, and a growing tendency to clear forests for new land availability. As a result, the forest area becomes damaged, and minimizes the carrying capacity and functions as a trestle for watersheds (DAS), as well as environmental preservation.

Restoring the power of society is by giving rights, authority and responsibility for a problem at hand. In this case, it needs the active role of the community with policies that fully support all its activities. The monitoring factor needs to be considered, only as a control for the community so that it does not move away from the goal of critical land rehabilitation. For the reason that critical land management is sensitive and full of project reviews, resulting in the unsustainability of the rehabilitation program. In the case of its implementation, stakeholders must understand the social, economic, cultural and customary conditions of the community who will be given responsibility for rehabilitating critical land. This activity must be carried out in an empowerment forum that prioritizes the principles of, by and for the community. The unique and specific nature of society necessitates taking a different approach to each community. As in the case with the Gorontalo community, who can be approached by customary patterns and traditions. This is because in traditional rituals there are efforts to preserve the surrounding environment. This approach is intended to facilitate the movement of participation by accommodating traditional leaders who become role models for local communities. This internalization is an effort to revive Gorontalo local wisdom, which has become the spirit of togetherness in environmental conservation.

Internalizing a cultural wisdom in order to increase community participation is a good and acceptable way in society. Because it will form a self-worth that depends on the main desire, and this is hidden knowledge [7]. This activity will mediate values supported by practical intelligence performance, to achieve balance [8]. Especially in critical land rehabilitation activities. This requires sustainable mutual thought and action to recondition critical agricultural land. In Gorontalo, this is conceptually embodied in the "Huyula" system, which is the spirit of togetherness and unity in social interactions. The huyula system takes the form of selfless social cooperation in society [9], which is also interpreted as community empowerment that forms institutional strength at the local community level [10]. Communities can monitor degradation with the knowledge they have [11]. The implementation of this huyula system can break the barrier of top-down policies, which in turn will lead to the development of bottom-up policies. Tradition contributes to preventing degradation [12], and is the right solution to minimize environmental damage [13]. The actualization of this cultural system can also be stated in village regulations and customary systems in the implementation of

critical land rehabilitation, so that it has written rules. To achieve this success, all stakeholders can participate in the process [14]. Based on the aforementioned points, the aim of this study is to actualize local community participation in critical land management in Gorontalo. On an ongoing basis, it will provide direction for critical land management based on local community participation. The hope is to raise critical awareness among the community of the importance of reducing social cooperation to recondition critical agricultural land, which of course integrates with various sectors and stakeholders.

2. Material and Methods

This study is an empirical study of various supporting literature, which is accompanied by observational measures in the form of descriptive. This study focuses on community rehabilitating critical lands in Gorontalo. The author seeks to find social events in critical land rehabilitation communities by conducting a discussion approach or focus group discussion with community groups of critical land rehabilitators. The writer combines this approach between literature study and observation, with the aim of being able to gather opinions, statements, ideas, suggestions and criticisms related to critical land management.

In presenting the result data, the study analysis uses a qualitative descriptive approach, with several stages of the process, namely the stages of collecting information or data, reducing data, presenting data, and drawing conclusions. This data acquisition process is a combination of secondary data and observation results which are then compared and presented. Thus, it can provide a critical review overview of critical land management based on local community participation with the huyula system built in the Gorontalo community.

3. Result and Discussion

3.1 Initiating Participatory Farm-Based Critical Land Management

The successful implementation of the strategy depends on the collaboration between policy makers and rural communities affected by the rehabilitation program. The rehabilitation programs that have been held appeared to be some with success. However, many of the rehabilitating communities felt that they had failed or that the land for rehabilitation was deliberately diverted back for planting seasonal crops. Making sample gardens is intended to provide an overview of critical land management in the community. Here the role of the researcher and the community is to jointly plant trees, by selecting the type of fruit or MPTS plants. This is done because the community desired fruit plants. This stitching selects mango (*Mangifera indica*), rambutan (*Nephelium lappaceum*), and soursop (*Annona muricata* L.). Farmers owned forestry plants were more dominant than mahogany (*Swietenia mahagoni*), teak trembesi (*Tectona grandis*), and trembesi (*Samanea saman*).

In the cultivation of annual crops planted by farmers, so far, management is rarely carried out regularly, both cleaning weeds, burying the stems of plants, and pruning branches. In implementation activities, it is also necessary to conduct a review of the use of dry land in the watershed area. This is done in order to map the conditions of availability and adequacy of water sources that can be used in irrigating the farms. In rural communities, farmers are most dominant in lowland rice farming, and dry land is corn farming. Many rural farmers complained about the lack of water when the lowland rice plants started replenishing their seeds (primordial period). This will have an impact on the success of the rice farming which he manages. Likewise, corn farming begins to face problem in the middle period of cultivation, namely during the silking and seed filling period. Sometimes water sources are not available so that the corn that is managed suffers a loss. This description can be used as a reference, that in carrying out rehabilitation of critical land it will have a good impact on the availability of water sources for farming. For the reason that apart from providing fertility for planting, the benefits of planting woody plants through organic matter produced from leaves, branches and twigs, annual plants can also store and collect rainwater. Thus, the availability of water sources will be more absorbed and stored in the rainy season and can be used by other plants in the dry season.

3.2 Community Participation Brainstorming through FGDs for Critical Land Management

Participatory mapping can be done by holding discussions with the community. The discussion was aimed at capturing the needs for critical land rehabilitation activities, both at the planning, implementation, and monitoring and evaluation stages. Some observational opinions through a series of discussion activities can be described as follows:

The planning stage includes:

1. In-depth socialization and assistance is needed in terms of increasing community participation in managing critical land. This is because tree planting for rehabilitation requires continuous socialization, so that it can grow the willingness of farmers to plant perennials/annual.
2. Planning should involve all elements such as all members of farmer groups, traditional / community leaders, village government officials, youth elements, and social institutions engaged in the environmental sector.
3. Determining the types of plants to be used in rehabilitating critical land should be based on a joint decision by all members of the farmer group, and the plants / trees that are selected are those that are of interest to the community.
4. To foster community participation in the environment, planning is needed that leads to a combination of long-lived annual plants combined with seasonal crops (such as food and horticulture).
5. In determining the location of rehabilitation, land in critical condition must be chosen, and not solely for the program to run, so that farmers must provide land that is still potential for food crops to be used as a location for rehabilitation of critical land. Also, the determination of this location should be assisted and assessed by a team of experts so that farmers understand that their land has shown critical or potentially critical conditions.
6. The participation of academics and tertiary institutions is very much needed in rehabilitation activities, so that academics should extend the railroad policy which later can be implemented by the government in the critical land rehabilitation program.
7. In increasing the success of critical land rehabilitation, it is necessary to consider planning more grant funds to rehabilitating farmers, so that the farmer groups will be able to manage the maximum farming capital for forestry crops to fulfill seedlings evenly.
8. It is necessary to design a rehabilitation model that can make the community prosperous, so that program planning should consider short, medium and long term efforts.

The implementation stage includes:

- 1) The focus of implementation is a cropping pattern technique that looks carelessly so that many of the planted plants died.
- 2) Farmers rarely maintain their crops, because they are busy with maintaining food crops and other annuals. This has resulted in the unsuccessful implementation of this critical land rehabilitation.
- 3) There is always need for assistance by extension agents, academics and related stakeholders to make this program successful.
- 4) In maintaining plant seeds in the seedbed, all members of the existing farmer groups can be involved. This will reduce the tendency to think that the seeds of this plant are only controlled by a few people.
- 5) Extension workers should conduct socialization on this critical land management because almost farmers do not understand how to control pests and diseases, periodic pruning, selective cutting techniques when they are in production.
- 6) In its implementation, seedlings of plants produced in the seedbed are used in reforesting areas where people live, by planting trees along village roads. This adds a positive value to the sustainability and coolness of the environment where the community lives.
- 7) The system implemented should be self-managed, so that farmers will increase their participation.

- 8) Implementation needs to be done in groups and not to plant separately or use farm laborers, so that a sense of togetherness in rehabilitating the land appears. On the other hand, this is also to foster the "huyula" tradition in the Gorontalo people.
- 9) In plant maintenance, farmers should not use a slash and burn system, especially during the dry season. This will again destroy the land and the cultivated plants will also die.
- 10) Farmers also need to collaborate with other farmers from various villages, to work together, not to blame each other. So that there will be genuine participation from within the farmer of the area.
- 11) The forestry service and related parties should prohibit other communities from destroying and cutting down forests by diverting them into agricultural or plantation areas. Moreover, this is done on sloping and steep areas. Therefore, this will increase the area of critical land in Randangan.
- 12) Farmers in the implementation of planting, need a planting schedule or planting calendar, so that if this is known, the farmers will not lose successively in conducting cultivation. This can be done by collaborating with the meteorological, climatology and geophysical agency (BMKG) in the pohuwato area, which can provide information in the form of planting scheduling or periods of rain. This is due to the fact that farmers in rural areas have very little information about the planting time. Sometimes we plant and then the heat hits, the trees that have been planted eventually die again. In the future, in carrying out this rehabilitation, we are given an understanding of the correct planting time.

The monitoring and evaluation stage includes:

1. Evaluation activities should identify which farmer groups may experience failure in rehabilitating their critical land. This condition will then provide opportunities to find solutions to the obstacles faced by these farmers. Furthermore, it is also the need to mapped which farmer groups have succeeded, and this will be an example for other farmer groups.
2. It is necessary to involve all elements, because in the evaluation usually only a small part is involved, such as the head or secretary of a farmer group member. So, we as members do not know for sure whether this program has been successful or not. Sometimes we don't even know if there is an evaluation.
3. The need for continuous monitoring of this program.
4. There should be a display of the program's success and giving awards to successful farmer groups.
5. There must be coaching and assistance in evaluating the program whether it is categorized as successful or not.
6. There needs to be further follow-up on this rehabilitation because it has implicated the worsening condition of the watershed in pohuwato district. Therefore, all agencies and sectors must participate in the joint program to rehabilitate critical agricultural land.

In the discussion, several directions were clear to increase community participation, such as socialization, mentoring, policy compliance, and the role of government agencies. Socialization, coaching and assistance from extension agents are very important to increase community participation in rehabilitating critical land. Wherefore land rehabilitation activities really require community participation in participating in these activities, with in-depth outreach and assistance from extension workers on land rehabilitation, the community will understand the aims and objectives of critical land rehabilitation. Sometimes the community's understanding of accepting new things is still low, the community maintains their mindset more than other people's opinions, so that with in-depth socialization about land rehabilitation it is hoped that it can increase community participation in these activities. In mentoring and learning, it should be on critical land management techniques, so that the community can understand the techniques for rehabilitating critical land.

In addition, land rehabilitation activities need to involve all community elements such as stakeholders engaged in the environmental sector. Land rehabilitation activities are the responsibility of both the community and other parties. Land rehabilitation is also a very beneficial activity,

especially for farming communities around the watershed. The achievement of critical land rehabilitation activities cannot be separated from the participation or participation of elements from various parties. In land rehabilitation activities also do not only require participation from various parties, but also in selecting or determining the types of plants to be used in land rehabilitation are the result of joint decisions. In selecting plants, of course, are plants that are of interest to the community, for example annual plants that can benefit farmers or the community from an economic perspective as well as the benefits of these plants in preventing erosion, fertilizing the soil, reducing land degradation, having short lives and producing fast. The plants needed are such as forest plants, types of teak, mahogany, palapi, and others, while MPTS types are mango, rambutan, durian, langsung and others. This plant, according to farmers, has a high economy and is favored by consumers.

In the implementation stage, public opinion leads to a lack of understanding of the community regarding good cropping patterns and selection of plant types, so that people seem to be planting annual plants carelessly without paying attention to the characteristics of these plants. Another reason why people do not focus on maintaining plants is the tendency of people to maintain food plants which are their priority for income. In addition, planting time also affects the enthusiasm of farmers to carry out rehabilitation, because farmers' knowledge of rainy periods is insufficient, so what needs to be guarded is to plant in vain if it is done in inappropriate seasons. Therefore, cooperation with BMKG is needed.

For the successful implementation of the critical land rehabilitation program, the process of maintaining plant seedlings must be carried out jointly so that the community can participate and reduce the tendency to think of controlling plant seeds by only certain people. Not only at the time of seedling maintenance, but also the process of planting to plant maintenance is also better done together, it would be better if it involves all communities from various villages with the aim of regenerating the tradition of mutual cooperation (Huyula) which is currently almost lost by modernization. Thus, public awareness is also growing not to carry out illegal logging or slash and burn systems on the grounds of land clearing and so on. If this continues, it will be possible to collaborate with the Forestry Service to prohibit people from cutting trees carelessly for land clearing.

This stage also emphasizes the role of extension workers who are indispensable to provide outreach or outreach to the community regarding annual crop maintenance, starting from selecting types, cropping patterns, controlling pests and plant diseases, periodic pruning and selective cutting techniques for crops that are already in production. To support the success, it also needs assistance and supervision after the socialization, so that the implementation of critical land rehabilitation does not just stop being socialized, but there is a follow-up until the land rehabilitation process is achieved.

The monitoring and evaluation phase of community opinion leads to the need for identification between successful and unsuccessful farmer groups in conducting critical land rehabilitation. Then solutions can be given for groups that have not succeeded and mapped for groups that are successful as examples of success. If necessary, giving reward to increase the spirit of group participation that has not succeeded can be done. In conducting the evaluation, all related parties must be involved, from academics, extension agencies, farmer groups to members of farmer groups to participate in carrying out the evaluation phase so that all elements know the results of the program that has been implemented. Whether the Success or failure of this program. Besides giving awards, farmers also emphasized the implementation of mentoring. In the evaluation stage, the process of coaching and mentoring is also needed so that it is necessary to know directly what follow-up actions should be done after the evaluation activities are carried out, so that all agencies can take another step in determining policies. Likewise, the rehabilitation community will be more active in rehabilitating critical agricultural land.

3.3 Critical Analysis of Huyula's Connected Participation Approach for Critical Land Rehabilitation

The failure of land management to date has resulted in increased erosion, surface runoff and damage to watershed areas. The existence of aggressive, exploitative and expansive, and without conservation principles has reduced the carrying capacity of the watershed environment [15].

Incomplete planning and non-optimal rehabilitation activities [16], [17], as well as a lack of transparent management [18], correlate with the increase in critical land and environmental damage. The failure of this rehabilitation stems from the dimensions of organization, management, ethics and administration [19]. The evaluation of the success of rehabilitation to date has been at a medium (medium) to low point [20]–[22].

In fact, cross-sectoral and multi-disciplinary management that prioritizes the integrated system has been practiced [23], [24]. However, this will not work if it does not combine with the local community. This is because local communities have strong power, which is related to social systems, customs, and local regulations that can unify the community. This is where participation becomes the “power” for the program's sustainability. Participation is actually the power of society, from the restraints of political and economic processes which are then free to determine their own future [25]. The active role of a person or community group can be as filler, user and initiator of development [26]–[28]. This is where community participation is vital, which provides support for the economy, the environment, and can make good use of resources [29]–[32]. Moving holistically with the cultural considerations of the community [33], repairing degraded land in order to support a sustainable life support system [34], [35].

7 Using a cultural and local community approach can be a midpoint for increasing community participation in critical land rehabilitation. Because, in the social life of the community, local regulations are highly regarded and used as guidelines in the structure of their lives. One of them is the “Huyula” system in Gorontalo society. The huyula system can be interpreted as a form of social cooperation which has long been practiced voluntarily or without coercion in order to improve people's lives both economically and socially. The implementation of the huyula can be carried out in various forms, both within the agricultural sector and outside the agricultural sector. In the agricultural sector, according to the community, the noble values of huyula are applied in the form of mutual cooperation activities in terms of land sanitation, cleaning of water gutters in land / rice fields, planting, in managing agricultural crops (fertilizing, weeding, etc.), harvesting with the gang system. who take turns. This seems to have become an attraction for the community to be moved to help each other and work properly in society. Even without being ordered to, the community has realized itself to come to help. Other things about the huyula are also widely expressed outside of agricultural activities such as cleaning the village environment, social service in death, building roads in the village, cleaning places of worship, weddings, and other activities generally carried out by the community. The huyula values have become the foundation for the life of the Gorontalo people based on customs.

The rehabilitation approach with the integration of huyula and customary series can be part of the success of government programs in reducing land criticality. When analyzed, every time a new family is formed through marriage, there will be tree planting which is required in the series of wedding customs. This, if managed properly, will increase the minimum number of stands for reforestation around the residence. Especially if all Gorontalo people have the awareness that the wedding day is used to plant trees and take care of them properly. You can imagine how sustainable this nature will be with the application of litter and wedding souvenirs in the form of green plants. However, it is very unfortunate that in the realities of social life, not all people do this. Plant waste is only used as a condition only and tends not to be planted properly, so that it does not grow and develop to preserve the environment. The huyula spirit in protecting the environment has faded in line with technological developments and the existence of a wage system. Explicitly, there are fundamental problems in the development and maintenance of huyula culture.

4. Conclusion

Rehabilitating critical land is a shared responsibility, by integrating various sectors, and not prioritizing each other's sectoral egos. Actualizing policy ideas requires consideration of local community participation, as the main actor in critical land rehabilitation activities. The results of the study show that: (a) to capture the sustainability of critical land rehabilitation, it can be initiated by

providing demonstration plots of sample gardens which are managed using a participatory method. This increases the responsibility and authority of local communities. Types of plants are selected based on community needs in fulfilling their daily needs and associated with traditional ceremonies; (b) brainstorming on community participation shows its attention to planning, implementation, monitoring and evaluation. In general, the community needs continuous assistance, socialization, and additional rehabilitation funds. The management process prioritizes the huyula tradition, by mobilizing community leaders and the cooperation of various stakeholders in its actualization; and (c) the failure of the project-based rehabilitation idea has resulted in the reality of stagnation and weakening of local community authority. Participation maneuvers decreased dramatically with the restraint of top-down patterns. Therefore, the transformation is carried out by carrying out integrated management between various government and private sectors. More importantly, the community should be managed in a framework of empowerment, because the nature, uniqueness and characteristics of the community are different, which gives rise to various social institutions. In Gorontalo, spirit huyula and customary series can be a motivator in managing critical land rehabilitation and greening the environment. Therefore, this idea needs to be supported and the formation of academic papers and village regulations that can be binding in the implementation of rehabilitation.

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