

Governance reform and climate change response

R Setiadi, E S Pratiwi and M Muktiali

Department of Urban and Regional Planning, Diponegoro University, Jl. Prof. Soedarto, Tembalang, Semarang, Central Java 50275, Indonesia

Corresponding author: rukuh.setiadi@pwk.undip.ac.id

Abstract. This paper focuses on Indonesian government-driven initiative on critical forest and degraded land rehabilitation. We employ Governance System Analysis (GSA) to diagnose various efforts that have been made by various actors in affecting and managing the rehabilitation of critical forests and degraded land. This study uses Wonosobo District as a case study because it has the largest forest coverage in Central Java Province and has a relatively high amount of land with critical condition. The application of GSA suggests improvement in terms of connectivity to reduce strong segregation between authorities managing the forest and capacity of an involved participant in strategy formulation, implementation and monitoring, and evaluation. The study finds it difficult to locate such governance reforms in the major classification of climate change strategies, either mitigation or adaptation. The reform is neither directly reducing the concentration of greenhouse gases nor is an adjustment of the system to the changing of climatic patterns. In the absence of such governance reform, however, prospect to maximize the contribution of forest environmental services to combat climate change are constrained.

1. Introduction

Land Use, Land Use Change, and Forestry (LULUCF) indicated as one of the sectors that contribute significantly and have placed Indonesia at the sixth of the world's top emitters [1]. In addition to its role in increasing greenhouse gases [2], unsustainable practices of forest use and land management, which is not in accordance with the conservation principles, often lead to land degradation and increase the number of critical lands. In this case, the critical land defined as land located both inside and outside forest areas that have been damaged so that its function is lost or declined [3].

In 2013, the area of critical land in Central Java Province reached almost 635 thousand hectares. As part of the national movement, the Central Java Provincial Government (CJPG) participates in forest and land rehabilitation (RHL) program. The CJPG mainstreamed this issue in the Mid-term Development Plan 2013-2018 and targeted 30% reduction of critical land in that period. The 30% target means no less than 190 thousand hectares of critical land must be addressed. Unfortunately, the progress of the program in Central Java is relatively slow. By early 2018, the achievement is only 23% of the total targeted. Among districts in Central Java, Wonosobo has the highest level of critical land [4]. Figure 1 shows the location of and the land condition in Wonosobo [5]. It has an administrative area of approximately 98 thousand hectares, and around 7 thousand hectares are declared as critical, while other 25.8 thousand hectares included in the category of almost critical.

This situation presents governance problems such as the accuracy of achievement targets, actors and the design of the program itself, the socio-economic and political dimension of scales (e.g. from central to regional) and actors (from the government, non-state, and community) [6]. Thus,



governance reform may be needed to some extent. However, from a climate change perspective, an important question arises: is RHL program perspective to address our climate change challenge?

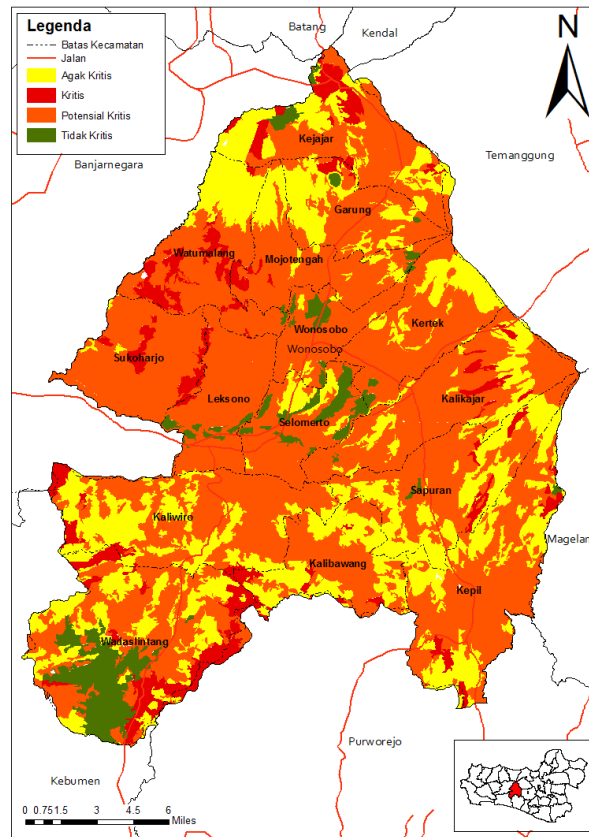


Figure 1. The location of land condition in Wonosobo District
(source: BPDASHL Serayu Opak Progo, 2013)[5]

In order to address the above question, this paper will investigate key factors that hinder the achievement of RHL targets in Central Java. Then, it outlines the strategic governance reforms for achieving RHL targets and finally discusses the extent of these reforms relevant in the context of climate change response.

2. Literature review

The technocratic approach is often put forward along with the increasing of social, economic and environmental challenges and risks. For example, when critical land expands, replanting or rehabilitation of forests and land is seen as the solution. However, whether the solution was considered the root of the problem is an important question, especially if the targeted success indicator was not achieved. Institutional or governance dimensions that play an important role in shaping these challenges and risks are often ignored and get limited attention [7][8].

Unlike to previous evaluation studies on RHL such as [9] that provided sporadic and unstructured analysis, this paper introduces Governance Systems Analysis (GSA) [10]. GSA takes advantage from structural-functionalism theory that can offer a deeper analytical base than the theories of environmental governance [11]. Structuralism emphasizes the importance of institutions or alliances of institutions that play a role or task to run a particular system, while functionalism puts forward the overall function of the system to be able to work effectively [11]. Functionalism rests on the concept that society is related to one another and the pattern of relationships between them shapes and influences the final outcome of a system.

There are a number of important elements that need to be understood in exploring the governance system [10]. First, governance theme. The governance system pays attention to many themes (multi-themed). It is quite broad ranging from economic, social and environmental themes that occur in the community and these themes are understood as interrelated themes. For example, low quality of life and poverty create economic instability, which causes increased pressure on the environment [12]. On the other hand, environmental destruction is also a trigger for a decrease in economic productivity [13]. On the contrary, many solutions offered to improve the environment not pay attention to how the economic and political system works [14]. In conventional governance analysis, each theme examined separately. In taking this point of view, GSA conceptualizes that in each theme there are smaller domains and sub-domains.

Second, polycentric properties of governance. In line with developments in the governance literature on the polycentric nature of the governance system [15] or multilevel governance [16], GSA also acknowledges the existence of a governance system that is not only vertical in scale from national, regional to local, but also recognizes the existence of various types of actors, programs, or schemes that are related to each other at the same level.

Third, governance structure. Departing from a variety of basic literature on planning, policy, and management, governance at least contains the following elements as its main structure, namely [10]: vision and formulation of objectives, analysis, strategy development, implementation, and monitoring and evaluation. In conventional governance models, a single institution carries out these tasks. Today, a more visionary governance model performs the above tasks by involving various actors and institutions [17]. The government that adopts this model develops alliances with other government institutions, the private sector, industry, NGOs, or universities. Crespy et al. [18] stated that the success of handling complex problems usually does not only involve a single institution or agent, but also institutions and agents coming from different levels of government.

In addition to the structural aspect of governance, the functional aspect is also crucial. Not only the availability of the governance structure but also whether the above structure can function properly is a concern for the GSA. It considers that governance structures can function properly when these three conditions exist.

The first condition is the application of knowledge to improve the governance system continuously [8]. Without knowledge, the governance system will experience constancy and cannot follow the dynamics of interaction within a managed system. Up to date knowledge needs to continuously included in the system. Knowledge management is thus important and useful for decision-making [19]. The second condition is that efforts to secure interconnected activities within and between government systems exist. The final condition is the adequate capacity of participants. Increasing the capacity of all actors (government, private, community, individual) participating in the system will increase the vitality of the system. It improves decision-making systems carried out by parties involved in the governance system.

3. Research method

This study employs the Governance System Analysis (GSA), an analytical framework developed by Dale et al [10] to assess the health of the natural resource governance system. This framework has been applied in a number of case studies and focuses on the importance of five governance structure elements in natural resource management, namely: (i) vision and goal setting, (ii) analysis, (iii) strategy development, (iv) implementation, and (v) monitoring and evaluation from three key governance functionality lenses: the application of knowledge, connectivity, and capacity of actors. Then, a detailed review of the combination of these elements is utilized to diagnose the performance of RHL programs and to provide insights on governance reform that require further improvement.

In addition to reviews of government official regulations and reports, this study involves semi-structured interview with nine key informants from different roles of authority including national ministry level (e.g. Forest Protection and Water Catchment Management Board/ BPDAS), provincial and local governments (Environmental Office, Agriculture and Plantation Agency, Regional Forest

Management Center, District Office), and farmer association. Table 1 shows an illustration of how a set of question is derived, while the detailed question is available from GSA protocol [10].

Table 1. Derivation of a set of question in the application of GSA framework

Structure and Functionality	Knowledge Application	Connectivity	The Capacity of Participants
Vision and Goal Setting	Questions 01	Questions 02	Questions 03
Analysis	Questions 04	Questions 05	Questions 06
Strategy Formulation	Questions 07	Questions 08	Questions 09
Implementation	Questions 10	Questions 11	Questions 12
Monitoring and Evaluation	Questions 13	Questions 14	Questions 15

4. Results

4.1. The perspective of GSA on Indonesian Forest and Land Rehabilitation program

First, the RHL program in Indonesia has shown the adequate application of knowledge in the formulation of the program's vision and objectives. The application of this knowledge indicated by the evolution of the vision and objectives of the program. In its evolution for more than four decades, the RHL program has not been seen merely as an effort to conserve forest and critical land, but also as an instrument to lift the lives of people around forest areas. However, the aim of the RHL program is still exclusive to the forestry sector, which is limited to forest areas owned by the community. The program overlooked the opportunity to link the formulation of the vision and objectives of forest and land rehabilitation that is overlapping to other land-based sectors (e.g. agriculture, plantation, and mining), in which they have a significant potential to influence the level of land criticality. Horizontal connectivity in the formulation of vision and objectives has been under exploration in the RHL program. BPDAS Serayu Opak Progo, as the representation of the MoEF in Wonosobo District and its surroundings, is the key actor who has the capacity in formulating the vision and objectives of RHL program.

Second, the analysis and formulation strategies in RHL program are based on knowledge. For example, the knowledge applied in the selection of conservation plant species. Previously, the type of conservation plant was determined by BPDAS, but now conservation species are selected according to community expectations. Adjusting this strategy correlates with the level of the community welfare as it leads to diversification of source of the community's income. In other words, the community's income does not only depend on harvesting one type of plant. In addition, the application of knowledge is also carried out in the establishment of a conservation strategy. For example, a non-monoculture planting system has been implemented to minimize the risk of failure due to pest and plant diseases. Another example is the adoption of a terracing system or locally known as the 'mountain belt system'.

The capacity of participants in the analysis phase is adequate at all levels. However, the capacity in the formulation of strategies at the provincial government level where the authority of forest and land rehabilitation function is now transferred is not yet optimal. The preparation of various development plans (medium-term and annual) at the provincial level is still in the form of recapitulation of activities that have been designed by BPDAS. Along with the withdrawal of forest management authority to the provincial level, the forest management agencies at the district level is now merged as the Regional Forest Management Center (BPH). However, the existence of a strategic document at the provincial level (e.g. RPHL) is not transparent, and it is the same case with the strategic document at the district level (e.g. RTnRHL).

Third, research-based knowledge guided the implementation of RHL at the formal project level. However, this does not appear to be the practice of the used by the community. Although the community has understood the benefits and disadvantages that will be faced if RHL program is not carried out properly, a significant part of the community is still difficult to cooperate. In general, the community or members of the farmer group have not changed their mindset. They have not been fully committed even though they have involved in RHL activities. For example, they are still committed to agricultural practices that propagate slope areas, which are actually not feasible for agricultural activities. This circumstance is also due to the relatively limited number of local program advisers, of which there are only two local program advisers in each sub-district.

Finally, the long-term indicator that RHL seeks to monitor is the recovery of the carrying capacity of the watershed and the improvement of community welfare. The monitoring and evaluating stages have been designed in accordance with the needs of the RHL program, in which the annual evaluation is carried out up to three times and monthly monitoring complements in between. In addition, post-program monitoring and evaluation are conducted after three years, in which the task is attached to the local program advisers. A five-year evaluation of RH implementation is also provided, although the review does not change the basic objectives of the RHL program. Evaluation only informs target locations of the next RHL implementation. This review is accompanied by updating the status of critical forest and land.

Although the capacity to conduct monitoring and evaluation exists, the ideal frequency of monitoring and evaluation does not materialize because of financial issues. Besides, the limited number of local program advisers, who are responsible for the monthly and post-program monitoring and evaluation, cannot perform their functions optimally, in which two advisers for one sub-district. BPH, as an agent of the provincial government in the region, needs to be enhanced its role. It is because it only carried out a compilation of reports from local program advisers, and subsequently continued the reports to the provincial level, BPDAS, and districts.

4.2. Governance Reform and Climate Change Response

There are a number of positive achievements in terms of forest and land rehabilitation governance in Wonosobo District. These positive achievements include the application of knowledge in almost all stages of the program and almost all actors, with the exception of community groups at the level of implementation. Also, the capacity of participants at all levels is good, especially at the stage of program analysis. However, there are some key findings that need to be addressed. First, segregation of role is very strong between levels of government and between institutions. For example, one of the resource persons states “agriculture and plantation agency only focus on the crops and plants, while the land is not, it belongs to other (environmental) domain” reflects this circumstance. The goal of RHL is basically to develop synergies with other institutions, such as agriculture and plantation through its efforts to encourage farmer groups in maintaining soil fertility and quality by transitioning to the substitution of chemical fertilizers into organic fertilizers. Opportunities for integration with agriculture and plantation agency for pest management of conservation plants also need to be considered.

Second, capacity building of participants in three areas, namely: strategy formulation, implementation, and monitoring and evaluation are the obstacles to RHL in accelerating the achievement of forest and critical land reduction targets in Central Java. Attention needs to be given to increase the number of local program advisers who are still very limited. The addition of the number of local program advisers is expected to correlate with increasing the capacity of members of farmer groups, especially in motivating their commitment to the implementation of the program appropriately.

Third, the connectivity of RHL programs with other horizontal sectors is not well established yet in the area of formulating the vision and objectives, strategy and program implementation. It also explains why the reduction of forest and critical land targets in Central Java was not achieved. Efforts to make RHL program becomes more inclusive needs serious attention. Thus, RHL program should be

open to any participants, which is not limited to BPDAS and their regional down-lines. Also, the program needs to welcome and encourage the contribution of other sectors.

In the context of climate change response, such governance reform has a difficult association, whether is it part of adaptation or mitigation? The reform is neither directly reducing the concentration of greenhouse gases nor is an adjustment of individual or system to the changing of climatic patterns. Without such governance reform, however, the expectation for having a healthy forest, that able to provide carbon sinks for the region, is a hard request. It is also the case for expecting a healthy land ecosystem to reduce the community's exposure from climate extreme. In brief, this paper argues that such reform is a part of roadmap to achieve effective climate change response as it is suggested from recent study [20], while the case of RHL program in Wonosobo District demonstrates antithesis of a number question: "how does collaborative climate change response can achieve effective results? in what ways? what are benefits generated from and challenges in implementing inclusive and collaborative climate change response?" posed by the same study [20]. Such reform may be positioned as a transformational response to climate change [21] aims to address institutional and behavior barriers, catalyzing the fundamental shift [22].

5. Conclusion

The GSA provides a clear and systematic overview of the application of knowledge, connectivity, and actor's capacity in overall governance structures. This study applies GSA to Indonesian forest and lands rehabilitation governance. It concludes that the RHL program in its current practice will not be prospective to address our climate change challenge unless necessary reforms in the area of connectivity and capacity building of participants are made. In the context of climate change, it is difficult to locate such governance reforms in the major classification of climate change strategies, either mitigation or adaptation. Such reform is a part of the roadmap to achieve effective climate change response or may be categorized as a transformational response to climate change.

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