

An evaluation of a community-based forest restoration programme in Gunung Gede Pangrango National Park, West Java, Indonesia

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ABSTRACT

Forest restoration is needed to improve the condition of degraded ecosystems and boost up the ecological services. The existence of forest areas, especially in Indonesia, cannot be separated from the livelihoods of the people living around them. The purpose of this study was to evaluate whether the feasibility of the community-based forest restoration programme, implemented by the Gunung Gede Pangrango National Park Agency (BBGGPNP) and its partners, is feasible and can support efforts to restore forest ecosystem functioning and build community independence in managing the forest ecosystem. This study used the Context, Input, Process and Product (CIPP) method. This is an evaluation model which provides an analytical and rational basis for programme decision-making, based on a cycle of planning, structuring, implementing and reviewing and revising decisions, examined through a different aspect of evaluation – context, input, process and product evaluation. Data were obtained from field observations, interviews and document analysis. Aspects of the programme ‘Context’ were found to be categorized as good and can become the basis for programme implementation, Programme ‘Inputs’ were also determined to be good, and fulfilled the criteria required to support the achievement of programme objectives. The ‘Process’ aspects were found to be sufficient, with key areas for improvement included the need for better coordination with partners and the need to respond to technical restoration requirements by adjusting the area of land to be restored, the number of trees to be planted, and by considering the technical rule of restoration. The ‘Product’ aspect of the programme were shown to be good, is shown by the achievement of the target amount and growth of trees and the increased capacity of human resources as well as the development of independent businesses in the ex-encroachers who were the programme participants. Based on these results, it can be concluded that the community-based forest restoration programme such as conducted by the GGPNP Agency is feasible and can be implemented in similar sites.

ABSTRAK

Restorasi hutan diperlukan untuk memperbaiki fungsi ekosistem hutan yang terdegradasi. Keberadaan kawasan hutan, khususnya di Indonesia, tidak dapat dipisahkan dengan penghidupan masyarakat yang tinggal di sekitarnya. Tujuan dari penelitian ini adalah untuk mengevaluasi apakah program restorasi hutan berbasis pemberdayaan masyarakat yang dilaksanakan oleh Balai Besar Taman Nasional Gunung Gede Pangrango (BBTNGGP) bersama mitranya, layak serta dapat mendukung upaya pemulihan fungsi ekosistem hutan dan membangun kemandirian masyarakat. Penelitian ini menggunakan metode CIPP, yaitu model evaluasi pada aspek *Context*, *Input*, *Process* dan *Product*. Data diperoleh dari hasil observasi lapangan, wawancara dan analisis dokumen. Berdasarkan analisis data, dapat disimpulkan bahwa program restorasi hutan berbasis pemberdayaan masyarakat layak untuk diterapkan sebagai upaya memulihkan fungsi ekosistem hutan dan membangun kemandirian masyarakat di sekitar hutan. Aspek Konteks program berkategori baik dan dapat menjadi dasar utama pelaksanaan program, Aspek Input program baik, telah memenuhi kriteria yang mendukung tercapainya tujuan program, Aspek Proses berkategori cukup, perlu melakukan koordinasi yang lebih baik dengan pihak mitra untuk lebih berkomitmen dan perlu untuk melakukan penyesuaian antara target luasan lahan yang direstorasi dengan jumlah pohon yang ditanam dengan mempertimbangkan aturan teknis restorasi. Aspek Produk berkategori baik ditunjukkan dengan tercapainya target jumlah dan pertumbuhan pohon dan meningkatnya kapasitas SDM serta terbangunnya usaha mandiri pada masyarakat eks perambah yang menjadi peserta program.

Keywords: *CIPP, forest restoration, community empowerment, Gunung Gede Pangrango National Park*

INTRODUCTION

Deforestation and degradation due to community encroachment are the biggest problems facing the management of the Gunung Gede Pangrango National Park (GGPNP), the largest remaining conservation area on the Island of Java. Therefore,

various aspects related to the interests of community to meet their daily needs and their influence on their conservation behavior cannot be separated from the management. Deforestation and land degradation, and the decrease of forest area and quality, has occurred as a result of illegal logging and/or forest conversion, this reduce the quality and quantity of natural resources,

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timber and non-timber forest products, biodiversity, and decreases ecological services such as water sources (Vásquez-Grandón et al., 2018)

Tenurial conflicts between the national parks and village communities, are typical across all conservation areas in Indonesia and have continued for a long time. In GGPNP tenurial conflicts arise from the expansion of the national park area, transferred from Perhutani's (State Owned Forest Company) land which is being managed by the Collaboration with Community Forest Management (PHBM) mechanism. With the addition of Perhutani land area, it has inherited several problems in the area, namely the existence of several degraded areas, in form of open areas grown with shrubs, secondary forest with Pinus and Agathis trees vegetation, and areas cultivated by former PHBM communities. The 2016 GGPNP area zoning data showed that the area of GGPNP was 24,615 Ha, of which 4,130 Ha (17%) was deforested areas and in much need of restoration efforts.

In efforts to solve tenurial conflicts, solutions are needed that can accommodate all interests of the conflicting parties. Community activities in forest areas that are unsustainable in nature can have adverse impacts on both the forest area and the communities themselves. On the other hand, the community are also potential resource for GGPNP to support efforts to conserve the area. Thus, the interests of the community in fulfilling their daily needs and their behaviour cannot be separated in the management of GGPNP.

Restoring degraded forest areas, require resources (JICA RECA, 2014), Prihadi et al., 2018) that cannot be fully funded from the government budget. The allocation for environmental spending in 2010 was only 0.94 percent of the total central government budget. While in 2011 the allocation was 1.05 percent and in 2012 it was 1.19 percent (Hadi et al., 2013).

Since 2014, GGPNP Agency has implemented a cooperation programme with stakeholders or partners who have a commitment to support biodiversity conservation efforts, especially in the GGPNP conservation area. This form of support has been formalized as a cooperation agreement, outlining a work programme that support efforts to conserve biodiversity in conservation areas, alongside supporting community empowerment-based (community-based) forest ecosystem restoration in GGPNP.

In a period of six years (January 2014-December 2019), there 16 Cooperation Agreements (PKS) ratified and 7 PKS still in process, which are carried out by GGPNP Agency with various cooperation partners. The purpose of the PKS is to support various conservation efforts, including the restoration of the area through a community empowerment-based forest restoration programme.

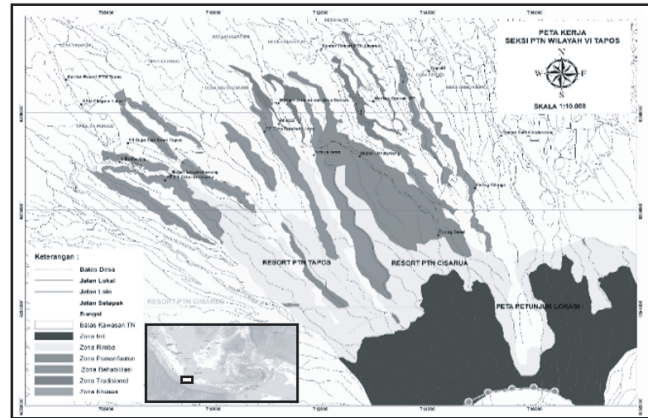


Figure 1. Map of Tapos Resort focal area , GGPNP.

METHODS

This research was carried out at the working area of the Tapos's National Park Management (PTN) of the GGPNP. Administratively it is located in Citapen village, Ciawi subdistrict, Bogor Regency, West Java Province. The research was conducted through an evaluation approach that focused on the condition that although the implementation of the empowerment-based forest restoration programme had continued for a long time, had encountered various problems including:

- 1) There is still a large land area cultivated by the community;
- 2) Not yet optimal activities regarding empowerment /switching from cultivators to other independent businesses;
- 3) Some independent business empowerment activities were not running optimally;
- 4) The task and function of implementing the programme (GGPNP officers) is not yet optimal in managing, monitoring and evaluating empowerment-based forest restoration activities.

The research was carried out using the CIPP (Context, Input, Process, Product) evaluation model (Stufflebeam & Shinkfield, 2007), through several steps of research: The first step was a literature study and observation aimed at gathering information and theories related to the implementation of community empowerment-based forest restoration programme, especially in the working area of Tapos. The second step was to carry out an evaluation of the community empowerment-based forest restoration programme to measure the feasibility of the programme and identify where recommendation could be made on improvements that would improve the performance of the programme.

Literature Study

An extensive literature review was undertaken for this research from experts (practitioners and academics) as well as experts in the environmental field, especially

regarding the application of the CIPP evaluation model, forest restoration, and community empowerment.

Data Collection

Data collection was carried out by means of observation, interviews and document analysis, to collect data, information and documentation related to community empowerment-based forest restoration programme at the PTN Tapos, GGPNP.

Evaluation Model

The evaluation model used in this study is the CIPP (Context, Input, Process, and Product) model developed by Stufflebeam & Shinkfield (2007). This evaluation model is an evaluation approach oriented towards decision makers (a decision oriented evaluation approach structured). The followings are the descriptions of CIPP evaluation models (Context, Input, Process, and Product):

Context evaluation

Context evaluation is often called as a needs assessment, asking "What needs to be done?" in assisting to assess problems, assets and opportunities in the context of a define community and environment (Stufflebeam & Coryn, 2014). Context evaluation discusses the steps of identifying programme targets starting from identifying the needs of service providers and the needs of the community who are the background of the programme (Zhang et al., 2011). Context evaluation contains the analysis of the strengths and weaknesses of certain objects, the relevance and linkages as well as the relevance and linkages of the programme. Context evaluation is also the most basic stage that has a mission to provide a rational/foundation for goal setting.

Input evaluation

Input evaluation assists in organizing decisions, determines existing sources, and asks: what alternatives to be taken?. What are the plans and strategies to achieve the goals?. What are the working procedures to achieve them?. The main orientation of input evaluation is to determine how programme objectives are achieved (Stufflebeam & Shinkfield, 2007).

Process evaluation

Process evaluation includes the collection of assessment data that has been determined and applied in programme implementation practices. Basically, the process evaluation is directed to find out how far the plans have been implemented in the programme and what components need to be improved.

Product evaluation

Product evaluation is an assessment conducted to measure the success of the programme in achieving the goals that have been set. The resulted data will

determine whether the programme to be continued, modified or stopped.

RESULTS AND DISCUSSION

Context Evaluation

The results of the evaluation found that the main context of the programme activities was dealing with the key problem of encroachment in to the national park, which causes area fragmentation, deforestation and degradation. This align to the problems faced by conservation area management institutions, especially those that have expanded the conservation area, taking in areas of cultivation, without community involvement is still not optimal in utilizing the national park area in a sustainable manner in the form of community-based tourism management to support social, economic and community welfare. Diantoro (2011) stated that in general, the problems that have appeared followed the presence of national park policies (post establishment and gazettement of national parks) were more related to land disputes in the context of use and designation.

This happens when there is a differences in stakeholder interests that are conflicting, particularly interests for conservation purposes on the one hand and interests for cultivation purposes (production) on the other. The interest for conservation purposes requires limiting the use and utilization of land, while on the contrary, the interest for the purpose of cultivation requires the use and utilization of the land to be as optimal as possible, to maximize production and yield thus necessitating conversion (conversion of function) from "idle" forest productive land.

The objectives of the community empowerment-based forest restoration programme are to restore degraded forests and achieve independence from smallholders and reduce dependence on cultivated land through forest restoration and empowerment activities. To achieve this goal, GGPNP and partners collaborated as outlined in the form of a Cooperation Agreement (PKS) with the scope of restoring ecosystem functions with community empowerment-based forest restoration activities.

This is in accordance with the policy for the formation of GGPNP Agency which was set through the Ministry of Forestry Decree Number P.03 / Menhut-II / 2007, where the main function is to control the impact of damage to living natural resources, sustainable use of living natural resources and their ecosystems and empowerment of communities in and around the area. The programme is based on Cooperation Agreements with partners, which is strengthened by applicable regulations, namely: Regulation of Director General of Conservation of Natural Resources and Ecosystems No. P.6/2018 on Technical Guidelines for

Table 1. Assessment result of Context evaluation.

Focus	Sub Focus/ Criteria	Parameter	Indicator	Score	Evaluaiion Scoree	Value Aspect	Categor y Aspect	
Context Evaluation	Background	Problems in form of land cultivation and land degradation are the main backgrounds of the programme	The programme background is in accordance with the GGPNP Agency policy, related to ecosystem restoration	5	5			
			The programme background is in accordance with the GGPNP Agency policy, but not related to ecosystem restoration	3				
			The programme background is not in accordance with GGPNP Agency policy	1				
	Legal Basis	The programme has clear and relevant regulations	Programme based on PKS (Colaboration Agreement) and legal regulations relevant to ecosystem restoration	5	5			
			Programme based on PKS and legal regulations that are not relevant to ecosystem restoration	3				
			The programme has absolutely no legal basis	1				
	Aim	Forest restoration and community independence	The programme aimed at restoring forests and increase community independence	5	5			
			The programme only aimed at restoring forests	3				
			The programme has objectives other than forest restoration and increasing community independence	1				
	Total I					15	100%	Good

Conservation Partnership Cooperation in Nature Reserve Areas and Nature Conservation Areas; Minister of Environment and Forestry Regulation No. P.48/2016 concerning Ecosystem Restoration; Minister of Environment and Forestry Regulation No. P.43/2016 on Community Empowerment; and Minister of Environment and Forestry Regulation No. P.44/MENLHK/ SETJEN/KUM.1/6/2017 concerning Amendments to P.85/2014 concerning Cooperation in the Implementation of Nature Reserve Areas (KSA) and Nature Conservation Areas (KPA).

Input Evaluation

Forest restoration and community empowerment programme have adequate guidelines to support the implementation. RPP (Programme Implementation Plan) and RKT (Annual Work Plan) as the main guidelines detailing each type of activity along with the budget plan and the person in charge of the activity. In the implementation of the training, there are complete guidelines/instructions from credible institutions, namely:

- a. Programme Implementation Plan (RPP);
- b. Annual Work Plan (RKT);
- c. Technical Guidelines for Restoration in Conservation Areas in Mountainous Tropical Rainforests and Tropical Monsoon Forests issued by KSDAE in collaboration with JICA;
- d. Guidelines for Planting Procedures and Species Enrichment in the Context of Restoring Land Ecosystems in Nature Reserves and Nature Conservation Areas, originated from the Director General KSDAE Regulation No. P. 12/KSDAE-Se-V / 2015;
- e. Guidelines for Honey Bee (*Trigona* sp.) Cultivation issued by *Balitbang* (Research and Development Agency) of Ministry of Environment and Forestry;
- f. Ecotourism Training Materials issued by the Driving Team of Tegalwaru Bogor Business Tourism Village.

Table 2. Assessment result of Input evaluation.

Focus	Sub Focus/ Criteria	Parameter	Indicator	Score	Evaluati on Score	value Aspect	Category Aspect
Input Evaluation	Guidelines / guidelines / implementati on instructions	Guidelines / guides / instructions In good quality	The guidelines/guides/instructions used are complete and have a good quality according to the activities in the programme	5	5		
			Guidelines/guides/instructions used are incomplete and of less quality	3			
			There are absolutely no guidelines/guides/instructions	1			
	Strategy	Strategies prepared in the programme	The prepared strategy is able to support the implementation and objectives of the programme	3	5		
			The strategy prepared is able to support implementation but it did not pay attention to programme objectives	2			
			There is no strategy	1			
	Implementati on organisation	Organization and human resources (HR) that carry out the programme	There is an organizational structure and competent human resources	5	3		
			here is no organizational structure, but there are competent human resources	3			
			There was no organizational structure and competent human resources	1			
Total II					13	87%	Good

In order for the implementation of the programme to run smoothly and achieve the stated objectives, various strategies have been designed as outlined in programme planning, namely:

- g. Formation of Forest Farmers Group (KTH), formation of KTH facilitates the coordination between programme implementers and cultivators as programme participants. By making cultivators as programme participants they have the opportunity to provide a multiplier effect, namely the community received wages during the restoration programme and have increased their skills and knowledge through training so they are able act independently, and targets for forest restoration can be realized;
- h. A strategy has been formulated to increase the capacity of community human resources through training activities and support for independent business infrastructure, including training on honey bee cultivation and ecotourism;
- i. The KTH group that was formed was granted area management rights for ecotourism activities;
- j. The strategy of selecting endemic and rare species as restoration plants can highlight the restoration location unique value which can encourage people's interest in visiting and has the potential to become an environmental-based tourism potential (ecotourism). As a programme that involves the role of external stakeholders in its implementation, the existence of an organizational structure is very important to support implementation of

programme and minimize confusion over the obligations and responsibilities of each personnel either from within (officers) or from outside parties (partners). Based on the results of the research, GGPNP Agency did not specifically form an organization responsible for the implementation of the programme, instead each officer has a clear duty and function that is inherent in his or her position to support the programme. A clear organizational structure is required in operating the programme so that the implementing staff can be formed from competent and qualified human resources (Jones et al., 1991).

Process Evaluation

Based on the research results, the entire programme implementation did not all progress according to plan. All activities that were part of the scope of activities as contained in the PKS document generally contained in the RPP and RKT had been carried out in order to fulfill obligations as in the PKS document, however several activities were found not to have been implemented in the previous year, which were in turn then planned (carry over) to be carried out in the following year. Especially in the implementation of forest restoration, the implementation of activities must be carried out continuously and sequentially, any activities that were not able to be carried out for 1 fiscal year, would then affect plant growth conditions. For example, if planting has been carried out, but there is a delay in plant maintenance, this would likely interfere with the plant growth and even may cause plants to die

which of course would affect the achievement of the programme goals.

Table 3. Assesment result of Process evaluation.

Focus	Sub Focus/ Criteria	Parameter	Indicator	Score	Score Evaluation	Aspect value	Category Aspect	
Process Evaluation	The suitability of planning with implementation	Programme realization is in accordance with the targets planned in the RKT/RPP	100% of planned activities can be carried out	5	3			
			Activities completed but not entirely	3				
			Not implemented at all	1				
	Inhibiting factors	There are factors that hinder programme implementation	There are no obstacles in implementation	5	3			
			There are obstacles ,but solution was found in implementation	3				
			There are obstacles that cannot be found a solution	1				
	Supporting factors	There are factors that support the implementation of the programme	There is support for implementation in accordance with programme objectives	5	5			
			There is support in implementation but it was different from programme objectives	3				
			No support at all	1				
	Total III					11	73%	Sufficient

There were several problems faced during programme implementation in the forms of:

- k. Less optimal performance of the third party appointed by the partner. This directly affected the realization of the achievement of the target activities to be achieved where there was in one budget year, namely in 2019 there was no activity at all, the solution to this problem was to include 2019 activities in the 2020 activity plan;
- l. There was a problem where the topography of the land was so steep that it was not possible to plant this area, this will affect the success of the target size of area to be restored. The solutions implemented by the programme implementers were to narrow the spacing or planting distance and carry out planting according to the targeted amount of trees planted. The strategy of selecting endemic and rare species as restoration plants can give the restoration location an object of unique value which is expected to encourage people's interest in coming and has the potential to become an environmental-based tourism potential (ecotourism). As a programme that involves the role of external stakeholders in its implementation, the existence of an organizational structure is very important to support programme implementation and minimize confusion over the obligations and responsibilities of each personnel both from within (officers) and from outside parties (partners). Based

on the research results, GGPNP Agency does not specifically form an organization that is responsible for programme implementation, it is based on the fact that each officer has a duty and function that is inherent in his position. A clear organizational structure is required in operating the programme so that the implementing staff can be formed from competent and qualified human resources (Jones et al., 1991);

- m. The difficulty of maintaining the cohesiveness of KTH members, so that they remain committed to running and achieving programme goals. The solution is for GGPNP Agency to continue to provide assistance in the implementing the programme after the cooperation with partners has ended.

Apart from the problems that hamper programme implementation, there are several factors that were found to support programme implementation and objectives, namely:

- n. Assistance for honey bee hive from parties outside the programme;
- o. There is a camping equipment grant, including fly sheets and tents from visitors to the ecotourism site;
- p. There is cooperation with scouts and nature lover groups in tourism management to build tourist facilities as a vehicle for knowledge transfer and

management;

- q. There is guidance from the Litbang (Research and Development Agency) of the Ministry of Environment and Forestry to KTH members related to honey bee cultivation, and;
- r. The village plan to propose honey bee cultivation and ecotourism activities as a village programme in order to obtain guidance and support from the local government. This increases the optimism of the KTH group to seriously run and manage the ongoing programme.

Product Evaluation

The implementation of restoration activities as part of the programme activities has been carried out sequentially according to the forest restoration stages. From 2017 to 2019, planting of 41 Ha (55%) has been carried out, not in accordance with the target area of 75 Ha. The report on the results of implementation of activity showed the target number of trees planted can be achieved with the number of trees planted as many as 21,350 from the target of 28,350 stems (75%).

Table 4. Assessment result of Product evaluation.

Focus	Sub Focus/ Criteria	Parameter	Indicator	Score	Evaluation score	Aspect Value	Aspect Category
Product Evaluation	Forest restoration	% area and plants grown	100 <X> 75% of the area has been restored to forest and living plants were in good condition	5	3		
			75% <X> 50% of the area restored to forest and living plants in good condition	3			
			50% < area restored to forest and the living plants in good condition	1			
	Independence and community participation in the conservation of the GGPNP area	The amount of farmers who have switched their business from cultivating the land (destructive) to other independent businesses (constructive)	100% of cultivators participating in the programme switched their businesses independently (not dependent on cultivated land)	5	5		
			> 50% of cultivators participating in the programme switched their businesses independently (not depending on cultivation land)	3			
			Ccultivators of programme participants still depend on cultivation land	1			
Total IV					8	80%	Good

The decision to revise the density has an effect on the number of plants per hectare, from the original RPP based on the average number of plants 275 stems/Ha to 500 - 1,000 stems/Ha. However, in accordance with the Minister of Environment and Forestry Regulation P.105/2018 stated that intensive reforestation is carried out in conservation areas and prioritized in areas that already have an Ecosystem Recovery Plan (RPE) with a density of plants between 625 to 1,100 stems/Ha. The results showed that KTH members as programme participants have a strong desire to increase capability and increase independence, all KTH members have left their activities to cultivate land and are trying to develop honey bee cultivation that is integrated with ecotourism locations which in its management is handed over to KTH which also has Business Permit for the Provision of Natural Tourism Services (IUPJWA) for the provision of food and beverages. The results of KTH honey bee cultivation have now shown good results. In the beginning the programme provided four (4) hives, which has now been scaled to 64 hives.

The average outputs from one (1) hive per month is 300 grams of honey, which is then sold for approx. IDR 150,000 per 250 gram bottle.

CONCLUSION

Based on the results of evaluation research on community empowerment-based forest restoration programme in the work area of the PTN Tapos GGPNP the following conclusions can be drawn:

- Evaluation of the context is good, because the background of programme implementation is in accordance with the GGPNP Agency policy direction, there is a legal basis that covers the implementation of the programme and the programme objectives are supporting the objectives of managing GGPNP.
- Evaluation of input is good, because there are clear guidelines/ instructions in programme implementation, there are strategies developed to

support the achievement of programme objectives and programme implementers play a good role according to their respective duties and functions even though there is no programme implementing organizational structure specially made during the programme was running.

- c. Process of evaluation is considered sufficient, because there is a mismatch between programme implementation and planning, there are obstacles in the implementation of the programme but there are solutions to existing obstacles, and there is external support in programme implementation that helps the programme's success.
- d. The evaluation of the product is good, because the former encroachment area has been successfully restored even though it does not cover the target area (55%), the number of trees planted and growing well has reached 75% of the target set. The encroachers targeted by the programme for community empowerment efforts in the form of ecotourism management and honey bee cultivation. This is in line with the results of research by Qodriyatun (2016) which showed that ecosystem restoration activities provide a direct contribution to improving the welfare of communities around the forests through community empowerment activities carried out by ecosystem restoration concession holders.
- e. The results of the evaluation research on community empowerment-based forest restoration programme in the working area of the PTN Tapos GGPNP Resort show that overall it is well implemented. Even though in its implementation the number of encroachers who were successfully excluded and the area of cultivated land that was successfully restored did not reach 100% target, the community empowerment-based forest restoration programme could be continued, but some improvements are still needed related to the organization of programme implementers, strengthening the commitment of partners in cooperation and adjustments between the target area and the amount of trees planted, and the strategy for selecting the tree species.

RECOMMENDATIONS

Recommendations for the implementation of a community empowerment-based forest restoration programme in the working area of the PTN Tapos GGPNP Resort include:

- a. Evaluation of Context – it is necessary to review and enrich the legal basis of programme implementation with other legal products that accommodate various community interests in order to meet the expected quantity and quality, and align

the background and objectives of programme implementation with the vision and mission of GGPNP Agency and the objectives of the management of the GGPNP area.

- b. Input Evaluation – to improve the quality of planning for area restoration activities through forest restoration and community empowerment carried out with a cooperation scheme between GGPNP Agency and partners, it is proposed that guidelines to be drawn up related to the preparation of RPP (Programme Implementation Plan) and RKT (Annual Work Plan) which contain implementation steps with budgeting adjusted to cost standards (NSPK) issued by the Director General of KSDAE (Conservation of Natural Resource and Ecosystem) or can refer to the *Perdirjen* (Regulation of Director General) PDASHL No.4/2018 concerning Guidelines for Technical Design Preparation. GGPNP Agency can carry out its role to issue warning to cooperation partners if things are found not to be in accordance with the planning documents, and build multi-stakeholder cooperation or collaboration by adhering to the principles of mutual respect, mutual trust and mutual benefit. The training material should not only be in technical terms but also provide EQ (Emotional Quotient) training because including the ability to manage emotions and the ability to motivate stakeholders plays an important role in the continued success of a programme, as encroachers have a low educational background it is key to utilize an emotive approach. It is better if the organizational structure for implementing the programme is made/ defined so that it is clearer and more focused regarding the duties and functions in terms of assistance and supervision of programme implementation.
- c. Process Evaluation – the evaluation system that has been conducted by GGPNP Agency so far should still be used for future programme by considering the input from the evaluation results in order for the programme quality becoming even better. The implementation of the programme requires a high commitment from both parties working together on agreed matters and applies four principles of governance, namely: 1) participation; 2) openness; 3) collective responsibility; and 4) accountability in order to solve problems and develop the potential of conservation areas and their buffer areas so that the objectives of programme implementation are achieved as targeted. There needs to be an adjustment to the target area plan with the density of trees to be planted by referring to Ministry of Environment and Forestry Regulation of P.105/2018 concerning Implementation Procedures, Support Activities, Incentives, and Development and Control of Forest and Land

Rehabilitation Activities. The strategy for selecting plant species must take into account the ecological, social and economic factors of local forest species. In terms of ecological factors, namely in accordance with the area concerned (local species) and economic factors must consider high selling value and from the social aspect it can be accepted by the community as a developed species (elite product) which can improve the sustainability of the economic and social functions of the people living around it. In tree planting, it is very important to follow the sequential steps of planting till maintenance is reached, in accordance with the recommended time frame. Delaying one of these steps can risk planting failure, therefore there needs to be a strong commitment from the parties concerned so that the stages of carrying out activities can be realized as planned. We recommend that bringing in instructors/ resource persons who are not only familiar with the material and are experienced in their fields but also help build networks in the promotion and marketing process.

- d. Product evaluation – the implementation of forest restoration activities should still prioritize the achievement of the target area to be restored by taking into account the field conditions that are more feasible for planting so that the target area can still be achieved, although plant distance/spacing is less, it is expected that natural regeneration/succession will occur in the future in restoration area. Area restoration activities through forest restoration and community empowerment should be carried out by local communities with the aim of building a sense of community care and increasing success. This can be realized if the community institutions involved are independent and strong, in this case the LBC Lestari Forest Farmer Group, so that all requirements and qualifications in technical implementation in the field can be delegated to KTH (Forest Farmer Group).
- e. It is necessary to revise the implementation of the future community empowerment-based forest restoration programme at GGPNP Agency by considering the results of the CIPP evaluation that has been carried out in an effort to improve the implementation of subsequent programme.

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