

Assistance of Agroforestry Programs in Bojonegoro Regency

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ABSTRACT

The purpose of the assistance program was to improve community welfare through replicating the successful implementation of previous programs in improving the livelihoods of rural communities around the JTB project operation area to other villages; improving environmental sustainability, especially forest sustainability in an effort to contribute to reducing carbon emissions in Bojonegoro Regency; realizing the principle of equity and justice in the implementation of community development programs that are not limited to the project area but also communities outside the project area in accordance with regional policy priorities, and maintain good relations with the surrounding community and local government so that businesses is able to run smoothly. The Participatory Action Research (PAR) method was used in this assistance program. The results of the assistance were the establishment of good relations from various parties, including KPH Bojonegoro, Bapedda, DLH, PEPC and IDFoS Indonesia through forest conservation activities, there had been an increase in the knowledge and capacity of forest farmers and the existence of agroforestry businesses in forest areas, the planting of 1500 longan trees and 30 durian trees as well as providing business operational assistance such as production and operational facilities, with longan cultivation farming, it was estimated that in the next 2 years at harvest, farmers were able to harvest as much as 3,000 kg with a turnover of Rp. 60,000,000 approximately in one harvest cycle, and the results of the evaluation mandate that there was 3 months of surveillance to minimize crop loss, and had been carried out by LMDH and Perhutani. To deal with the upcoming drought, it was necessary to prepare effective and possible watering because the location was in the middle of the forest with limited transportation access.

INTRODUCTION

The 2013 Socio-Economic Study showed that in the economic dimension, the majority of the community's main livelihood around the JTB Project location was as farmers and ranchers. One of the recommendations from the 2013 Socio-Economic Study was the implementation of CSR/PKPO for the community around the Jambaran-Tiung Biru Unitization Field Gas Development Project (hereinafter referred to as PPG-JTB) through a program in the economic field, it was community economic empowerment that relies on independence, sustainability, and increased welfare. One of the important aspects of community economic empowerment that was planned to be developed was related to the sustainability of livelihoods in order to increase the independence and welfare of the community around the JTB Project location.

The government had issued various regulations including Law No. 23 of 2009 concerning the management and protection of the environment; Government Regulation No. 28 of 1985 concerning forest protection; LHK Ministerial Decree No.P.39/MENLHK/SETJEN/KUM.1/10/2016 concerning social forestry and LHK Ministerial Decree in the working area of Perum Perhutani No.P.38/MENLHK/SETJEN/KUM.1/10/2016 concerning social forestry in the working area of Perum Perhutani. The regulation provided opportunities for villagers around the forest to prosper their citizens while conserving the forest and its environment through the LMDH (Forest village community institution)/KTH (forest farmer group) entity. With LMDH/KTH, they are mandated to manage forests by developing productive economic businesses (real sector) while conserving

forests with an agroforestry approach and agrisilvastura systems.

That the collective awareness between the company and the community to protect and preserve the surrounding environment is the main basis for sustainable use and conservation of nature. Along with the spirit of implementation of one of the principles of social and environmental responsibility (TJSL) from PT. Pertamina EP Cepu (PEPC) which is consistent with sustainable development and community welfare and also as a form of commitment in an effort to contribute to improving community welfare, PT. Pertamina EP Cepu will implement the Forest Area-Based Agroforestry Program with the community.

The objectives of this program were to improve community welfare through replicating the successful implementation of previous programs in improving the livelihoods of rural communities around the JTB project operation area to other villages; improving environmental sustainability, especially forest sustainability in an effort to contribute to the reduction of carbon emissions in Bojonegoro Regency, realizing the principles of equity and justice in the implementation of community development programs that were not limited to the project area but also communities outside the project area in accordance with regional policy priorities, and establish good relationships both with the surrounding community and the Regional Government so that the business was able to run smoothly. The target of this activity was the community around the forest, LMDH (Forest Village Community Institution). The indicators for the achievement of this program were the establishment of an agroforestry economic business in the forest areas of

Ngasem and Purwosari sub-districts, as well as the improvement of better LMDH institutional governance in managing the business, increase in community knowledge and skills that support agroforestry businesses; the existence of financing support and agroforestry business infrastructure, the existence of increased knowledge and skills of the community that supports agroforestry business, the existence of financing support and agroforestry business infrastructure, the existence of a set of agroforestry business systems; and the existence of assistance that supports agroforestry businesses

LITERATURE REVIEW

Community Empowerment

The word “empowerment” comes from the basic word “power” which means the power to do, achieve, perform or enable. The prefix “em” means strength in humans, a source of creativity (Baridi, et. al.) Conceptually, empowerment comes from the word power (power or empowerment) (Sugiarto, 2005, p. 57). Empowerment refers to the ability of people. Especially vulnerable and weak groups so that they have the strength or ability to: (a) fulfill their basic needs so that they have freedom, in the sense that they are not only free to express opinions, but are free from hunger, free from ignorance, free from pain; (b) access to productive sources that enable them to increase their income and obtain the goods and services they need; (c) participate in development processes and the decisions that affect them. (Sugiarto, 2005, p. 58).

The definition of empowerment is seen from the goals, processes, and ways of empowerment. According to Jim Ife in building a Community Empowering the People, empowerment aims to increase the power of people who are weak or disadvantaged (Suharto,

2005). Person says that empowerment is a process by which people become strong enough to participate in controlling and influencing events and institutions that affect their lives. Empowerment emphasizes that people acquire sufficient skills, knowledge, and power to influence their lives and the lives of others they care about. Meanwhile, according to Swift and Levin in building a community. Empowering Communities, empowerment refers to efforts to reallocate power through changing social structures.

Based on the definition of empowerment above, it can be concluded that empowerment is a series of activities to strengthen the power or empowerment of vulnerable and weak groups in society, including individuals who experience poverty problems, so that they have the empowerment to meet their life needs both physically, economically, and socially. social activities such as: self-confidence, as well as expressing aspirations, having a livelihood, participating in social activities and being independent in carrying out their life tasks. The way in which empowerment is carried out is by providing motivation or support in the form of resources, opportunities, knowledge, and skills for the community to increase their capacity, increase awareness about their potential, then strive to develop that potential.

The main purpose of empowerment is to strengthen the power of the community, especially the weak groups who have powerlessness, either because of internal conditions (e.g. their own perceptions), or because of external conditions (e.g. being oppressed by an unfair social structure). There are several groups that can be categorized as weak or powerless groups including a) The group is structurally weak, rising weakly in class, gender, and ethnicity; b) Special

vulnerable groups, such as the elderly, children and youth with disabilities, gays and lesbians, isolated communities; c) Personally weak groups, namely those who experience personal or family problems. (Suharto, 2005)

According to Agus Syafi'i, the purpose of community empowerment is to establish a community or build the ability to advance oneself towards a better life in a balanced way, because community empowerment is an effort to broaden the horizon of choice for the community. This means that people are empowered to see and choose something that is beneficial to themselves. Payne argues that an empowerment process, in essence, aims to help clients gain the power to make decisions and find actions that they will take related to themselves, including reducing the effects of personal and social barriers in taking action. This is done through increasing the ability and self-confidence to use the power he has, among others through the transfer of power from his environment.

According to Isbandi Rukmino Adi, community empowerment has 7 (seven) aspects of empowerment, which are as follows:

- a. Preparation Phase: at this stage there are two stages that must be carried out, first, staff retention, it is community empowerment which can be done by community workers, and second field preparation which is basically attempted to be carried out in a non-directive manner.
- b. Stages of assessment: at this stage, the assessment process can be done individually through groups in the community. In this case the officer must try to identify the problem of the perceived needs (feel needs) and

also the resources owned by the client.

- c. Alternative planning stage of programs or activities: at this stage the officers as exchange agents in a participatory manner try to involve citizens to think about the problems they face and how to overcome them. In this context, the community is expected to be able to think of several alternative programs and activities that can be carried out.
- d. The action plan formalization stage: at this stage the change agent helps each group to formulate and determine what programs and activities they will undertake to address the existing problems. Besides that, the officers also help to formalize their ideas into written form, especially when it has to do with making proposals to funders.
- e. Stage of implementation of programs or activities: in an effort to implement community empowerment programs, the community as cadres are expected to maintain the sustainability of the programs that have been developed. Cooperation between officers and the community is important in this stage because sometimes things that have been planned well can deviate from the field.
- f. Evaluation stage: evaluation as a process of monitoring from residents and officers of the ongoing community empowerment program should be carried out by involving residents. With the involvement of these citizens, it is hoped that in the short term, it will usually form a community system for internal monitoring and in the

long term can build more established community communication by utilizing existing resources.

- g. Termination stage: the termination stage is the stage of formally terminating the relationship with the target community. At this stage, the project is expected to stop immediately.

Meanwhile, according to Gunawan Sumodiningrat, efforts for community empowerment consist of 3 (three) stages, including creating a climate that allows the community's potential to develop. The starting point is the recognition that every human being and society has potential (power) that can be developed, strengthening the potential or power possessed by the community, in this context more positive and real steps are needed, as well as opening access to various opportunities that will make the community more empowered in taking advantage of opportunities, and empowering also means tackling.

Agroforestry

The conversion of natural forests into agricultural land is realized to cause many problems such as decreased soil fertility, erosion, extinction of flora and fauna, floods, droughts and even global environmental changes. This problem is getting worse from time to time in line with the increasing area of forest that is converted to other business land. So agroforestry was born as a new branch of science in agriculture or forestry. This science seeks to identify and develop the existence of agroforestry systems that have been developed by farmers in tropical and subtropical climates for centuries. Agroforestry is a combination of forestry science and agronomy,

combining forestry business with rural development to create a balance between agricultural intensification and forest conservation (Bene, 1977; King 1978; King, 1979).

Agroforestry is expected to be useful in addition to preventing the expansion of degraded land, conserving forest resources, improving agricultural quality and perfecting silvicultural intensification and diversification. This system has been practiced by farmers in various parts of Indonesia for centuries (Michon and de Foresta, 1995), such as shifting cultivation systems, mixed gardens on land around the house (yard) and pastures. Another common example in Java is the dense mosaics of expanses of rice fields and productive moor interspersed with clumps of trees. Some of these clumps have a structure close to that of natural forest with a wide variety of plant species.

Based on the motivation of the farmers, there are two systems for establishing agroforestry in the field, including the "traditional" farming system and the "modern" system. A "traditional" system is a system that is "developed and tested" by the farmer himself, according to natural conditions and market needs or demands, and in line with the development of his experience over the years from one generation to the next. In the "traditional" system, farming development is usually based solely on trial and error, without formal research or guidance from extension workers/field officers. In "modern" farming systems, ideas and technologies are derived from research results.

According to De Foresta and Michon (1997), agroforestry can be grouped into two systems, including simple agroforestry systems and complex agroforestry systems. A simple agroforestry system is an agricultural

system in which trees are intercropped with one or more seasonal crops. Trees can be planted as fences around plots of land for food crops, randomly in plots of land, or in other patterns such as lined up in an array to form an alley/fence. The types of trees planted are also very diverse, they can be of high economic value such as coconut, rubber, cloves, coffee, cocoa (chocolate), jackfruit, belinjo, petai, teak and mahogany or those of low economic value such as dadap, lamtoro and calliandra. Types of seasonal crops usually revolve around food crops, such as rice (upland), corn, soybeans, beans, cassava, vegetables and grasses or other types of plants.

The most widely discussed form of simple agroforestry in Java is intercropping (Bratamihardja, 1991). This system, in the Indonesian version, is known as “taungya” which is mandatory in teak forest areas in Java and was developed within the framework of the social forestry program of Perum Perhutani. On this land, farmers are allowed to plant annual crops between young teak trees. The results of seasonal crops are taken by farmers, but farmers are not allowed to cut or damage teak trees and all trees remain the property of Perum Perhutani. When the tree has become mature, there is no more integration with annuals because of the problem of shade from the tree.

Types of trees that are planted specifically to produce timber for building materials (timber) only, resulting in a change in the cropping pattern from an intercropping system to a monoculture teak plantation. This simple system is often a common feature of commercial agriculture (Siregar, 1990). In its development, this simple agroforestry system is also a mixture of several types of trees without any annual crops. For example, coffee plantations are usually interspersed with dadap

(Erythrina) or kelorwono plants, also called gamal (*Gliricidia*) as shade plants and soil fertilizers. Another example of intercropping commonly found in Ngantang, Malang is planting coffee in pine forests.

Complex agroforestry system, is a sedentary agricultural system that involves many types of tree crops (tree-based) either intentionally planted or naturally growing on a plot of land and managed by farmers following cropping patterns and ecosystems resembling a forest. In this system, in addition to various types of trees, there are also shrubs, climbing plants (lianas), seasonal plants and grasses in large numbers. The main characteristic of this complex agroforestry system is the physical appearance and dynamics in it which are similar to natural forest ecosystems, both primary and secondary forests, therefore this system can also be referred to as AGROFOREST (ICRAF, 1996). Based on the distance to the place of residence, this complex agroforestry system is divided into two, including gardens or home gardens which are located around the residence and “agroforest”, which is usually called “forest” which is located far from the place of residence (De Foresta, 2000), for example, the “damar forest” in the Krui area, West Lampung or the “rubber forest” in Jambi.

RESEARCH METHODOLOGY

Participatory Action Research (PAR) was used in this assistance program. The foundation of the PAR’s working method was primarily ideas that come from the people. Therefore, PAR researchers were required to carry out the following work methods: 1) Paying close attention to the ideas that come from the people which were still fragmented and systematic; 2) Studying the idea together with them so that it became a systematic idea; 3) uniting with

the people; 4) Reviewing the ideas that come from them, so that they were aware and master that the ideas are their own; 5) Translating the idea into action; 6) Testing the truth of ideas through action; 7) and repeatedly so that the idea becomes truer, more meaningful and valuable over time.

The clearer steps were described as follows: 1) Preliminary mapping, initial mapping as a tool for controlling the community, researchers will easily understand the reality of the problem and the social closeness that exists. This will make it easier to enter the community either through key people or grassroots communities that have been built, such as religious groups, cultural groups, or economic groups. 2) Building human relations, researchers carry out inculturation and build trust with residents, so that equal and mutually supportive bonds are established. Researchers and citizens can unite into a symbiotic mutualism to carry out studies, learn to master the problem, dismantle the problem in a participatory manner. 3) Determining the Research Agenda for Social Change, together with the community, the researchers schedule a study program through the participatory Rural Appraisal (PRA) method to understand residents' cases which later became tools for social change, while pioneering, building community groups, according to abilities and diversity. 4) Participatory mapping, together with the community to map the area, as well as the problems experienced by the community. 5) Formulating humanitarian problems, the community formulates the basic problems of human life that they experience. Such as issues of food, housing, health, education, energy, the environment, and other major humanitarian issues. 6) Develop Movement Strategy, the community formulates a movement strategy to

dismantle the formulated humanitarian problems. Ensuring systematic steps, ensuring the participating parties (stakeholders), as well as formulating the possible success and failure of the planned program and finding a way out if there are obstacles that limit the success of the program. 7) Community organizing, communities assisted by researchers have established social institutions. Whether they appear in the form of working groups or community organizations, they are actually solving social problems at the same time. Likewise, building networks between working groups and between working groups and other agencies related to the planned action plans. 8) Launching change action, actions to solve problems are involved at the same time. Solving humanitarian problems not only solves the problem itself, but is also a process of community learning. Therefore, new institutions were formed in the community, community organizers were formed, and finally local leaders emerged, and these figures became agents of change. 9) Build community learning centers, learning centers are built based on the needs of community groups that are already engaged in action for change. The learning center is a medium for communication, research, discussion, and all aspects for planning, organizing and solving social problems. 10) Theoretical reflection of social change, community researchers put forward the theory of social change. Based on the results of the research, the community learning process and the action plans implemented, the researcher and the community will reflect on all the processes and results obtained (from start to finish). Theoretical reflections are formulated collectively, so that they become academic theories that can be displayed to the public as an academic

accountability system. 11) Expanding the scale of movement and support, the success of the PAR program is not only measured by the results of activities during the process, but also by the level of sustainability of the program that has been running and the emergence of local organizers and leaders who continue the program to take action for change.

RESULTS AND DISCUSSION

From several activities that have been carried out in accordance with the stages of program implementation, the following achievements have been obtained, such as Kick of Meeting. This meeting was held on Thursday, October 31, 2019. This activity was held at Sekar Rinampat room, GDK, Bojonegoro Regency. It was attended by various stakeholders such as representatives of Pertamina EP Cepu, KPH Bojonegoro, DPMD Bojonegoro, DLH Bojonegoro, Assper Clanggap and Mantri Sawit Rejo. The meeting lasted for 90 minutes, with the results including the information on the program implementation plan (overview, stages, and program targets), also the existence of mutual agreement between parties with commitments according to their respective duties and functions. Besides, there was coordination with the parties. Coordination with KPH Bojonegoro was carried out on Friday, November 18, 2019 at the KPH Bojonegoro office. The coordination was carried out by PEPC, IDFoS team members and ADM KPH Bojonegoro along with one Head of Natural Resources Division. The coordination resulted the information on the program implementation plan (overview, stages, and targets), as well as a good response and support from KPH Padangan for the program implementation plan. This program was in synergy with the program at KPH Bojonegoro, it was reforestation in the

local protected area. There was also coordination with RPH Clanggap. The coordination with RPH Clanggap was carried out on Friday, November 18, 2019 at RPH Clanggap office. The meeting was attended by the representative of PEPC, IDFoS Indonesia, and RPH Clanggap. The results of the coordination included information on the program implementation plan (overview, stages, and targets) as well as a good response and support from RPH Clanggap with the form of support being to facilitate and assist in every stage of the program.

Then, there was meeting with the community. The meeting was carried out on Thursday, November 7, 2019 at Bandungrejo village. The community meeting and socialization were attended by 32 participants including 30 male and 2 female participants from various parties, such as PEPC, IDFoS Indonesia, LMDH Rimba Tani, LMDH Tani Maju Makmur, Assper Clanggap, and Mantri Palm Rejo. The community meeting and socialization lasted for 76 minutes, with some results, including information on the program implementation plan (overview, stages, and targets) to the community around the forest, commitment and support from LMDH Rimba Tani and LMDH Tani Maju Makmur. Caring for the longan plant, the cultivators agreed that the land would be planted with longan plants, and in addition to longan around the tree, rice would be planted with a scaffold system.

The mapping of potential RU was carried out on 17-23 November 2019. The areas mapped were in plots 54 and 53. Surveying with questionnaires was carried out by collecting information from each member of LMDH Hutan Tani. The number of respondents was 23 people working on PPP land. The results

obtained from mapping the potential of RU were that data related to KPS land profiles and identification of the income of LMDH forest farmers and RTL members regarding the presentation of the results of the analysis from the IDFoS Team would be presented to the parties at the Bandungrejo workshop on November 30, 2019. Besides, there was also Expert Consultation. This consultation was conducted on November 25, 2019 at IDFoS Indonesia meeting room. This activity involved the mapping and analysis teams. The results of the mapping analyzed to produce a Land and Income Profile form for LMDH Members. The result of this activity was draft analysis of KPS KRPH Palm Rejo land profile as well as a LMDH member income assessment draft.

There was a workshop held. This workshop was held on Tuesday, November 30, 2019 at Griya Dharma Kusuma. The workshop was attended by various elements, such as the mapping team, KPH Perhutani, CDK East Java Province, DPMD, DLH, village heads, village officials, community leaders, PT Pertamina EP Cepu, and IDFoS Indonesia. The results of the workshop included a KPS KRPH Palm Rejo Land Profile Document and an LMDH Member Income Assessment Document. Then, there was participatory monitoring and evaluation. This activity was carried out on Thursday, December 5 2019. This monitoring was carried out by interviewing 3 respondents, including the village head, RPH (Resot Pangkuan Hutan) Clanggap, and beneficiaries. This activity was monitored by IDFoS Indonesia coaches. The results obtained were in the form of recommendations for monitoring and evaluation results. Besides, there was also business Visit. This business visit was carried out from 18 up to 19 December 2019. It visited a

farmer group in Sugihan Village, Merakurak District, Tuban Regency, which cultivated *kateki* type longan plants. This activity was attended by LMDH Rimba Tani, LMDH Tani Maju Mandiri Meduyunan, Mantri, Planting Foreman, representatives from Pertamina and IDFoS Indonesia. This activity began with an opening, remarks and discussion with the Sugihan village farmer group, then a visit to the longan garden. The result of the activity was an increase in knowledge and skills related to longan cultivation to support agroforestry businesses

Then, the operational technical training was carried out from Wednesday to Sunday, 15-19 January 2020 at the pavilion of the Ngasem sub-district, Bojonegoro Regency. The opening of the training was attended by the Ngasem Sub-district Head, PEPC representative, IDFoS Indonesia, foreman and participants from LMDH Rimba Tani. There are 5 training resource persons, including KPH Bojonegoro, Environmental Service Department, Director of IDFoS Indonesia and fruit plant practitioner from Semarang. This activity lasted for 5 days. As a result, there were 25 participants who increased their knowledge and skills about cultivating longan and durian. For this assistance program, there was support for business facilities in the form of 1500 diamond River Longan Seeds, 30 Durian montong Seeds, 5,000 Kg of organic fertilizers, NPK fertilizers and medicines, 1530 Ajir Bamboo Seeds, Personal Protective Equipment, Water Pump Equipment and other supporting facilities. A total of 27 workers on land planted with longan and durian fruit starting from the installation of stakes, planting holes, planting to maintenance. The symbolic handover of seed

assistance was held on February 6, 2020, attended by various parties such as KPH, LMDH, PEPC, and IDFoS Indonesia. The results of the activity were 1500 diamond river longan and 30 Montong durian seeds were planted.

The Focus Group Discussion discussing the assessment of plots 53 and 54 was held on Thursday-Friday, 6-7 February 2020 at Pos Jono, Sawitreo Region. The FGD was attended by LMDH, Asper Clanggap, Mantri Sawit rejo, foreman, village head, Pertamina EP Cepu and IDFoS Indonesia team. This FGD was facilitated by the IDFoS Indonesia Team which lasted for 95 minutes. The discussion of assessment II (Plots 40 and 41) was held on Monday-Tuesday, 10-11 February 2020 at Pos Jono, Sawitreo Region. The discussion was attended by LMDH, Asper Clanggap, Mantri Sawit rejo, foreman, village head, Pertamina EP Cepu and IDFoS Indonesia. This FGD was facilitated by IDFoS Indonesia Team which resulted in the evaluation of longan cultivation. After that, there was analysis meetings and writing of assessment results. The meeting for analysis and writing of the assessment results was held at Pos Jono, Sawitreo Region. This discussion was attended by some elements, including LMDH management, village heads, BPD, village assistants and experts from the program companion team as well as from Pertamina EP Cepu. This discussion was facilitated by IDFoS Indonesia, which lasted for 105 minutes. The analysis and writing meeting of the assessment results was held at the IDFoS Indonesia office on 26-27 February 2020 at the house of the chairman of LMDH Rimba Tani. This discussion was attended by LMDH management, village heads, BPD, village assistants and experts from the program companion team as well as from Pertamina EP Cepu. This discussion was

facilitated by IDFoS Indonesia which lasted for 105 minutes. The discussion result was assessment results draft.

The community meeting was held on Friday, March 6, 2020 at Pos Jono, Sawitreo Region, Ngasem Sub-District, Bojonegoro Regency. This meeting was attended by Village Government, BPD, LPMD, PKK, Village Owned Enterprises management, Bandungrejo community leaders and Pertamina EP Cepu. This community meeting was facilitated by IDFoS Indonesia which resulted delivery of information on the assessment results. Then, there was participatory monitoring and evaluation. Participatory monitoring activity was carried out on Wednesday January 22, 2020, and was carried out by SKK Migas and Pertamina EP Cepu. The monitoring was carried out by interviewing 3 respondents, including IDFOS Indonesia, Beneficiary and KRPH Sawitreo. This activity was carried out by directly visiting the longan planting location in plot 54. As a result, there were 1300 longan trees and 30 Durian seeds were planted. The remaining 200 seeds were completed in the following week.

After that, there was evaluation carried out. Participatory evaluation activities were in the form of Focus Group Discussion (FGD). This activity was carried out on Friday, February 7, 2020, which was attended by various parties, including LMDH members, Asper Clanggap, Mantri Sawit rejo, Foreman, village heads, Pertamina EP Cepu and the IDFoS Indonesia team. The FGD was facilitated by the IDFoS Indonesia Team and lasted for 90 minutes. The results obtained from 1,530 longan seeds and durian seeds have planted 1,507 seeds and the rest was scheduled for immediate planting, there were 7 longan plants that died and 1 durian plant died, there were 42

longan plants that withered, there were 13 longan plants that were lost and 1 missing durian plants. Then, the plans for the preservation of longan and durian seeds had been discussed in plots 40, 41, 53, and 54. Then, for the mentoring was carried out for 6 months starting from October 21 to March 31, 2020.

Plant Condition Map

The number of planted plants was 1500 longan plants and 30 durian plants.

Planting was carried out in December 2019 and completed in January 2020. For more than 2 months, the plants experienced several conditions, including experiencing inundation for more than 1 day because February was the peak of rainy season in Bojonegoro Regency. This included the occurrence of landslides due to the erosion of river because the land being planted is KPS land on the banks of the river. The latest conditions as of March 20, 2020 were as follows:

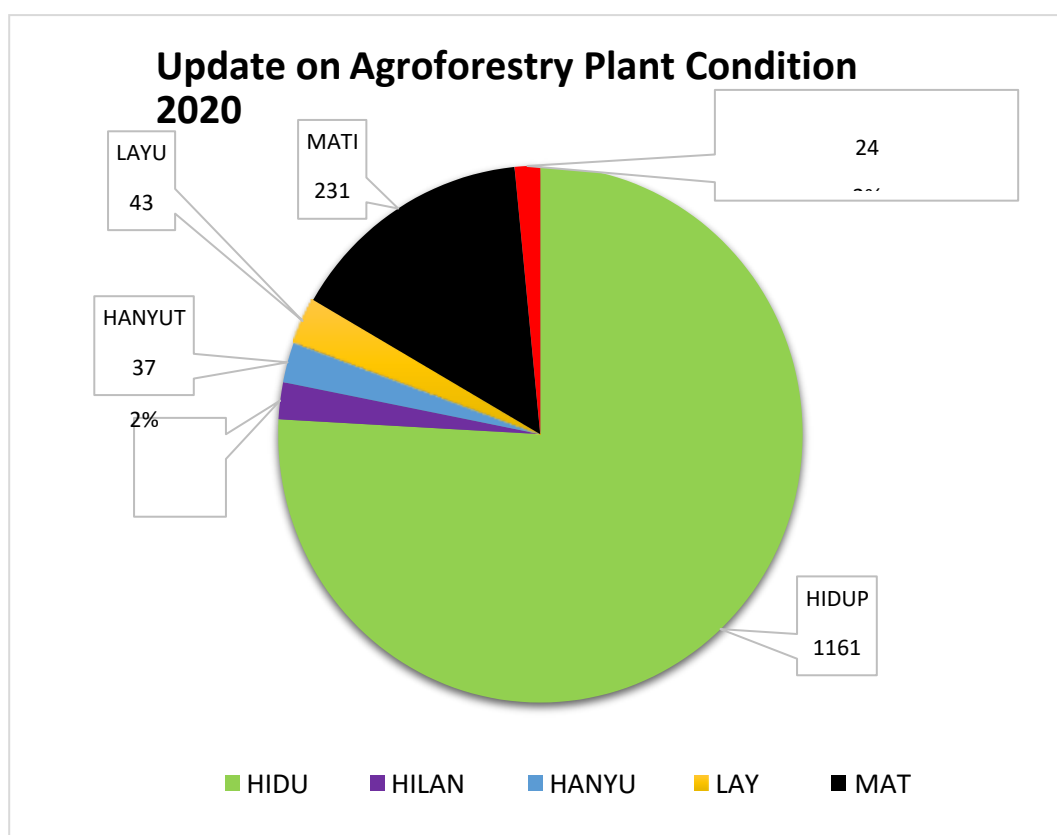


Figure 1. Update on Agroforestry Plant Condition 2020

Replanting the trees was carried out at the end of March 2020 with a total number of 265 longan and 4 durian plants. The drowned plants were not being able to be replanted because this was a natural disaster and the place to be planted had become a river flow. The percentage of plant mortality was 15% or as many as 231 plants were plants that were on critical land

which if it rained there was inundation for more than 1 day. In terms of plant management, plants were planted in the local protected area (KPS) perhutani KRPH Clangap, Bandungrejo Village, Ngasem Sub-District, Bojonegoro Regency, precisely located in plots 52,53, 41 and 42. Plant cultivation was managed by 27 forest farmers, or commonly called Pesanggem.

Each of the Pesanggem was in the PPP area manages crops according to the area they

usually plant, which was described in detail in the following table:

Table 1 Plant cultivation was managed by 27 forest farmers

No.	NAME	Plot	Number	NUMBER OF SEEDS						Total	Number of Replanting
				Planted	Survive	Lost	drifted	withered	died		
1	DARTO	53	41	41	30	7	-	3	1	41	8
2	JARI	53	49	49	18	-	5	10	16	49	16
3	SOKRAN	53	80	80	65	15	-	-	-	80	15
4	TARIMAN	53	79	79	73	2	-	4	-	79	2
5	TASMIN	53	56	56	55	-	-	-	1	56	1
6	LASIMIN	53	22	22	22	-	-	-	-	22	-
7	SUKI	53	50	50	49	-	-	-	1	50	1
8	WIJI	53	40	40	40	-	-	-	-	40	-
9	RIYANTO	53	24	24	23	1	-	-	-	24	1
10	SUWADI	53	84	84	56	-	-	-	28	84	28
11	PARMONO	54	107	107	92	-	2	-	13	107	13
12	MUNAJI	54	66	66	60	-	-	-	6	66	6
13	LAIMIN	54	67	67	25	-	-	5	37	67	37
14	NGALI	54	42	42	27	-	6	-	9	42	9
15	SARIMAN	54	51	51	43	-	2	2	4	51	4
16	NGASIRAN	54	54	54	54	-	-	-	-	54	-
17	RASIMUN	54	137	137	111	-	5	8	13	137	13
18	SURATIN	54	59	59	46	-	5	4	4	59	4
19	WAJI	54	26	26	26	-	-	-	-	26	-
20	FATHKUR	54	19	19	11	-	-	-	8	19	8
21	TASLIMIN	54	30	30	17	8	5	-	-	30	8
22	LAGIANTO Kelengkeng	54	16	16	14	-	-	-	2	16	2
	LAGIANTO Durian	54	30	30	26	-	-	-	4	30	4
23	LAGI	40	52	52	23	-	-	-	18	52	18
24	SUMARI	41	44	44	24	-	-	-	8	44	8
25	NGATMAN	41	14	14	10	-	-	4	-	14	-
26	BUDIONO	41	43	43	28	1	-	3	11	43	12
27	SUTOPO	41	54	54	19	-	7	-	27	54	27
	FATHKUR	41	94	94	74	-	-	-	20	94	20
	TOTAL		1530	1530	1161	34	37	43	231	1,530	265

There were two extraordinary events happened, including the rain and flash flood, also the Covid-19 Outbreak. The peak of the Bojonegoro rain in February 2020 caused some of the land on the banks of the river that was planted with longan to be eroded and caused the drifting of 37 longan plants and 1 durian plant. The high intensity of rain and the shallowness of the river are factors that cause the heavy flow of water, and because the plant was only 1 month old, the roots had not been firmly attached to the subsoil so that the water flows rapidly towards the river. Then, the 2019 Corona Virus Disease (Covid-19) pandemic has become a worldwide pandemic since December 2019 and has started to enter Indonesia since February 2020. The Indonesian government has started to grant a Civil Emergency status, and has begun to limit travel to and from abroad. In Bojonegoro Regency, the government based on circular letter number 440/184/412.305/2020 to limit social activities and activities with large gatherings of people, starting in mid-March 2020. Most activities with large gatherings of people had been restricted to the point that they were not allowed. This was done as an effort to prevent and control the spread of COVID-19. This had an impact on the final activity that should be carried out in the program this time, it was the final evaluation together with stakeholders and the farmers.

Then, there was unfinished activities. In the 4th week of March 2020, a final evaluation activity had been planned which invited Perhutani, district governments, sub-district and village governments and forest farmers. The activity which was planned to be carried out by presenting updates and program results and then asking for responses and evaluations from various parties as a follow-up to the program could not be carried out. The postponement of these activities until

this report was written due to the Covid-19 outbreak, making it impossible to carry out activities that must gather more than 20 people. The follow-up to this activity will be carried out after the COVID-19 pandemic has improved, marked by a notification from the government stating that the condition is not an emergency and it is permissible to organize activities with many people.

Related to the challenges faced during the activities including 1) The condition of the land which is was a critical land makes the planting and maintenance process required extra effort. 2) Shallow rivers make puddles when it rained on the land around the river longer. 3) The age of famers (LMDH) were mostly elderly and had low education, this caused the transformation of science and communication was not running smoothly. 4) It was estimated that in 3 months the dry season began and the land started to dry out. It was needed special efforts such as watering and others to maintain plant life because plants had not been enough age to survive on their own.

From the above challenges, several lessons can be concluded, 1) With the majority of critical locations, it was in KPS land along the banks of rivers, in which when it rained, there must be heavy flow and flooding, during the dry season it was dry because of the alluvial soil type. This condition became a valuable lesson to plant with the pit method and the addition of a water barrier that passes like a concrete buis, so plant it in a concrete buis. During the dry season, it had not been experienced because the program was running in the rainy season. 2) For managers/farmers and LMDH, it was important to invite and increase the capacity of young farmers who hope to be able to continue this agroforestry business, considering that most of the administrators are elderly.

Table 2 Forest area-based agroforestry program with the community Plant condition per 20 march 2020 plot 40, 41, 53 & 54'

NO.	NAME	PLOT	NUMBER OF SEED	JUMLAH BIBIT							TOTAL	DESCRIPTION
				PLANTED	SURVIVED	LOST	DRIFT	WITHERED	DIED	BURIED		
1	DARTO	53	41	41	30	7	-	3	1	-	41	8
2	JARI	53	49	49	18	-	5	10	16	-	49	16
3	SOKRAN*	53	80	80	65	15	-	-	-	-	80	15
4	TARIMAN	53	79	79	73	2	-	4	-	-	79	2
5	TASMIN	53	56	56	55	-	-	-	1	-	56	1
6	LASIMIN	53	22	22	22	-	-	-	-	-	22	-
7	SUKI	53	50	50	49	-	-	-	1	-	50	1
8	WIJI	53	40	40	40	-	-	-	-	-	40	-
9	RIYANTO	53	24	24	23	1	-	-	-	-	24	1
10	SUWADI	53	84	84	56	-	-	-	28	-	84	28
11	PARMONO	54	107	107	92	-	2	-	13	-	107	13
12	MUNAJI	54	66	66	60	-	-	-	6	-	66	6
13	LAIMIN	54	67	67	25	-	-	5	37	-	67	37
14	NGALI	54	42	42	27	-	6	-	9	-	42	9
15	SARIMAN	54	51	51	43	-	2	2	4	-	51	4
16	NGASIRAN*	54	54	54	54	-	-	-	-	-	54	-
17	RASIMUN	54	137	137	111	-	5	8	13	-	137	13
18	SURATIN	54	59	59	46	-	5	4	4	-	59	4
19	WAJI	54	26	26	26	-	-	-	-	-	26	-
20	FATHKUR	54	19	19	11	-	-	-	8	-	19	8
21	TASLIMIN	54	30	30	17	8	5	-	-	-	30	8
22	LAGIANTO Longan	54	16	16	14	-	-	-	2	-	16	2
	LAGIANTO Durian	54	30	30	26	-	-	-	4	-	30	4
23	LAGI	40	52	52	23	-	-	-	18	11	52	18
24	SUMARI	41	44	44	24	-	-	-	8	12	44	8
25	NGATMAN	41	14	14	10	-	-	4	-	-	14	-
26	BUDIONO	41	43	43	28	1	-	3	11	-	43	12
27	SUTOPO	41	54	54	19	-	7	-	27	1	54	27
28	FATHKUR	41	94	94	74	-	-	-	20	-	94	20
	TOTAL		1530	1530	1161	34	37	43	231	24	1,530	265

POLICY IMPLICATIONS AND RECOMMENDATIONS

The recommendations provided from the previous assistance program were

1. Conduction monitoring together with the community regarding the care and development of longan and durian plants
2. Planning maintenance efforts to face of a dry season period

CONCLUSION

From the implementation of this activity, the conclusion drawn that established good relations from various parties, including KPH Bojonegoro, Bapedda, DLH, PEPC and IDFoS Indonesia through forest conservation activities. There had been an increase in the knowledge and capacity of forest farmers and the existence of agroforestry businesses in forest areas. The planting of 1500 longan plants and 30 durian plants as well as providing business operational assistance such as production and operational facilities, with the longan plant cultivation agricultural business, it was estimated that in the next 2 years at harvest, farmers can harvest as much as 3,000 kg with a turnover of approximately Rp. 60,000,000 in one harvest cycle. Then, the results of the evaluation mandate that there be 3 months of surveillance to minimize plant loss, and has been carried out by LMDH and Perhutani. To deal with the upcoming drought, it was necessary to prepare effective and possible watering because the location is in the middle of the forest with limited transportation access.

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