Strengthening of farmer groups institutions in the development of community forests based on Jamblang (Syzygium cummini Linn) agroforestry

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Abstract. The existence of farmer’s groups is important for increasing community forest productivity. The final impact is the sustainability of the environment and the community’s welfare with the pattern of community forests. The purpose of the research is to find out the structure and dynamic of farmer groups for institutional strengthening. The research was conducted in Cipari Hamlet, Linggajaya Village, Cisitu Subdistrict, Sumedang Regency, from 2015 to 2017. The research used a qualitative approach and descriptive explanation of a case. Data collection was conducted by doing in-depth interviews with 3 (three) informants, and using questionnaires on 22 (twenty two) respondents who are members of the "Lingga Murni" forest farmer group. The result showed that the forest farmer group "Lingga Murni" was a modern group, as seen from the existence of an organizational structure (but there was no forestry section) and some institutional activities that have already left the sub-district. But the collection of decisions was not by deliberation but directly from the group leader. The Lingga Murni farmer group did not accommodate the opinions of all members. Alternative development agency priorities were the establishment of a forestry section in the organizational structure to accommodate community forest activities, as well as the creation of work plans with the aim of improving the performance of its members, from program design to evaluation of activities.

Keywords : Institutions, farmer groups, forest management, community forests

1. Introduction
Forest is one of the largest assets owned by the Indonesian state in the form of state and private forests. Private forests known as community forests are increasingly potential to be developed in most regions of Indonesia, especially Java Island. The total area of community forests in Indonesia is 3,589,343 ha with 2,799,181 (77.98 %) is found in Java. Community forests supply 46.9 percent (around 23 million m$^3$) of national log timber needs or supply 70% of log wood needs in Java [1][2].

Community forests provide economic and environmental benefits to the community. Community forests contribute to the income such as being a source of timber, fruits, leaves, bark, seeds, and roots. In addition, community forests have a positive impact on increasing environmental carrying capacity. Increasing the area of land cover has an effect to soil and water conservation on community land.
In general, community forests are managed by an agroforestry system. Agroforestry is a system of land use which is carried out with various technologies through annual, seasonal, and/or livestock plants utilization at the same time or take turns at certain periods so that ecological, social and economic interactions are formed. Agroforestry systems can be used as producers of food, animal feed, honey, building materials, and medicinal materials. This system can be applied to steep lands for reducing the erosion and landslides [3].

The development of agroforestry community forest-based on jamblang aims to increase community income and positive environment. This program requires community participation around community forests in Linggajaya Village, Cisitu Sub-District of Sumedang District. The success of this activity is completely determined by the existence of a local Farmer Group organization. Community forest critical land management systems have rules, controls, and protection structures that are specifically related to state forests. The development of agroforestry community forests requires farmer group institutions to accommodate farmers in collective activities. According to [4] the role that related to productivity factors, namely humans (education, expertise, attitudes, cultural background), processes (equipment, technological processes, raw materials, communication), products (product design, product quantity and quality), and environment (internal and external). The objective of this study is to determine the structure and dynamics of Linggajaya Village farmer groups in the development of agroforestry community forests- based on Jamblang. This finding is to provide recommendations for institutional strengthening in the development of agroforestry community forests- based on Jamblang.

2. Methodology

2.1. Location
The research location is Cipari, which is the closest hamlet to the location of the Jamblang agroforestry demonstration plot. Administratively, Cipari Village is included in the area of Linggajaya Village, Cisitu Sub-District of Sumedang District, West Java Province with ordinate S 06° 53' 13,393"; E 108° 01' 36,927". The study was conducted from March to October 2017.

2.2. Data Analysis
The analysis unit of this study was members of the "Lingga Murni" farmer group in Cipari Village who also managed medicinal plant agroforestry plots-based on Jamblang. The primary data collection is done through in-depth interviews with 3 (three) key informants who are the heads of farmer groups, hamlet heads, and community leaders. The interview was conducted on 22 (twenty two) respondents, members of the "Lingga Murni" farmer group. Observations on the dynamics of farmer groups were carried out during the study. The secondary data collection was carried out through documentation techniques obtained from village monographs, Statistical data Center, and other supporters.

3. Results and Discussions

3.1. Description of Location
Linggajaya Village is located in Cisitu District, Sumedang District, West Java Province with ordinate S 06° 53' 13,393"; E 108° 01' 36,927". Some of the area are passed by the provincial highway that connect Sumedang city with Wado region. Based on the potential of the Village in 2014, Linggajaya Village had 7.4 km² area, with 5.6 km² area is used as non-irrigated rice fields (2.6 km²) and non-rice fields; gardens, fields, and huma (3 km²). The area which is used as a settlement and yard, forest, moor, and others is 1.8 km². The population of Linggajaya Village is 4,121 people with 2,132 males, 1,989 females and number of household are 1,281. Thus, Linggajaya Village has a population density of 557 / km².

The topography of Linggajaya Village is hilly with an altitude of 400-925 masl. The elevation of the village is around 406 masl. The distance of Village to District is 1 km. Cipari is the closest hamlet
to the location of Jamblang agroforestry demplot development. Linggajaya village is surrounded by several villages, namely: Sundamekar and Situmekar villages in northern, Situmekar village in eastern; Cinangsi and Cimaragas village in southern; and Sundamekar village in western. The Linggajaya Village community depends on high environmental resources, since the majority of livelihoods in that village is from agricultural sector (68%) with land ownership of <0.25 Ha. Land acquisition comes from inheritance, buying and distribution of villages by 23% (Figure 1).

![Figure 1. Size and Status of Land Enterprises farmers Linggajaya. Source: Primary data 2017, analyzed 2019.](image)

The Linggajaya villagers used to work in the field of agricultural cultivation. This is supported by the condition of natural resources. Linggajaya village has 5 farmer groups namely Lingga Murni, Lingga Mukti, Joar, Ketos, and Bayu Mekar and only 2 (two) farmer groups are active that is Lingga Murni and Lingga Mukti. Lingga Murni Farmer Group members dominantly live in Cipari village, so they are close to the location of the Jamblang-based medicinal plant demonstration plot. The majority of farmer are members of a group of farmers are over the age of 40 years, experienced cultivation (>10 years), low educated (elementary school), and have a family quite a lot (3-7 persons). General description of members of the Lingga Murni Farmers Group can be seen from the characteristics of the respondents (Table 1).

| Table 1. Characteristic of Lingga Murni Farmer Group Member |
|-------------------------------------------------------------|
| Age (Years-old) | Quantity (Persons) | Educational Qualification |
| 20 | 0 | Primary School |
| 40-60 | 9 | Junior High School |
| > 60 | 7 | Senior High School |
| | | College |
| Farming Experience (Years) | Quantity (Persons) | Family members |
| <10 | 4 | <3 |
| ≥10 | 18 | 3-7 |
| | | 12 |
| Quantity (Persons) |
| 22 | 22 |

Source: Primary Data 2017, analysed 2019

The household condition of farmer makes them want to improve their economic situation by becoming member of Lingga Murni Farmer Group. They expect that they can increase more knowledge, especially in farming sector. Then they expect their prosperity will increase through those sectors.
3.2. Activities of Lingga Murni Farmer Group

Many considerations contribute in defining the “institutional” and “institution”. The definitions are different based on the master’s opinion [5]. One of the definitions of institutional is a management system of attitude or norm in fulfilling the activity of social prosperity effort, where human relationship is ruled by norm system and social organization. Meanwhile [6] the institutional concept generally is a group of norm or habit in keeping important values. It is different with [7] another definition that institution is a concept that has synergy with the structure, not only involving social activity in fulfilling human’s need, but also involving the organization.

The quality of institution movement can be seen from its activity. The organization/ institution activity is influenced by 3 factors, i.e. motivation, external environment, and its capacity. Meanwhile, quality of its activity is determined by 4 important aspects, i.e. relevancy, effectivity, efficiency, and financial [8].

Lingga Murni is one of farmer groups in Lingga Jaya Village, Cisitu Sub-District of Sumedang District. Most of its members are lived near with Jamblang (Syzygium cumini) agroforestry plot site in Bukit Batu Dua. This farmer group was established in order to increase the people social prosperity. The institution activities influence the member’s attitude reversely (Table 2).

Table 2. The History of Murni Lingga Farmer Group

| No | Year | Description |
|----|------|-------------|
| 1. | 1978 | The establishment of Farmer Group in Cipari Village. Lingga Murni became the farmer group’s name. The leader is Mr. Otong Sanjaya. There are 300 persons of member. |
| 2. | 1978-2000 | Lingga Murni Farmer Group is active in farming and livestock sectors. Farming sector is dominated by: rice, corn, and peanuts. Livestock sector: cow. Gardening sector: cassava. Farming, gardening, and livestock activities are executed by mutual corporation system and reserved by cooperation. The name is Lingga Murni Cooperation. Lingga Murni Farmer Group was improving. Therefore, the government gave them appreciation (Lingga Murni Farmer Group won the wits contest). However when the leader was resign, the farmer group condition was not conducive; any intensive attention and aid from the extension officer no longer exist. |
| 3. | 2000-2006 | Lingga Murni Farmer Group was inactive. There are no more activities in this farmer group. Member’s solidarity was getting less. Then, each member did their own business privately, no longer in farmer group. Lingga Murni Cooperation was also inactive. |
| 4. | 2007 | Lingga Murni Farmer Group was reactivated through the assisting given by Mr Asep Dinanjar (farming and livestock extension officer). Mr. Dedi from Cipari RT 01/03 became the leader of the Lingga Murni Farmer Group and there were 71 members. The re-activation Lingga Murni Farmer Group through the seasonal planting program (chili, tobacco, rice, and mangosteen) from Farming and Livestock Service of Sumedang District. Farmer earned seedling and fertilizer from the Sumedang District Government. In 1400 m², each farmer group member earned 3 kg rice seedling, 15 kg of urea, 25 Phonska/ NPK (Nitrogen, Phospate, and Calium), 3 packages of organic fertilizer, and 2 packages of compost. |
| 5. | 2014 | Lingga Murni Farmer Group was ‘re-established’ by the Decree of Head of Lingga Jaya Village, No: 140/Kep.Des-04/2014 on March, 9th, 2014. However Lingga Murni Farmer Group was less support from the previous members. |
| 6. | 2015-2017 | The farmer group built a cooperation with researchers of Center for Research and Development of Agroforestry Technology in establishing plot of forest tree species for medicine purposes (Jamblang) in agroforestry pattern; Farmer group members were participated in planning (under tree species determination: ginger and Curcumin) and execution (land clearing, planting, and maintaining). Lingga Murni Farmer Group wanted to keep developing. Some members wanted to have assisting from forestry and garden Extension officer. |

Source: Primary Data 2017, analysed in 2019
From its history, the attitude interconnection among the Lingga Murni Farmer Group members can be seen. The leader has a big power in influencing the institution. The institution has a big influence for the life of members. This is explained by [9] He wrote that in an institution, the organization influenced the group attitude through value and norm system. Therefore, it can be concluded that a complex system of value and norm is aimed to manage the human’s life.

Lingga Murni Farmer Group was established in 1978 with 2 period of leadership. It was participated in many development programs in farming, livestock, gardening, and forestry sectors. Some of these programs were in line with the member’s wants and needs, but some of them were not. Some activities in last five years i.e.: (1) corn and cardamom planting, (2) tree planting: Suren, Acasia, Mahogany, Gaharu, and Coffee, and (3) the establishment of agroforestry plots for Jamblang tree with medicine purposes.

In accepting and executing many development programs, farmer group members face many problems. That becomes un-satisfaction factor for them. Some of them are: (1) the aid is not suitable with social and environment conditions, (2) generally, the aids are seedling and tools provision, while the marketing of harvesting products are not assisted; there are no standard cost and this is make the farmer failure in the harvesting period, (3) there are pro and contra on the aid program; that brakes the relationship among the members, (4) farmers lack of information and this make them hard to solve their problems.

This phenomenon describes the situation and condition of Lingga Murni Farmer Group. It accepted the development programs in improving the member’s economic and welfare, although the programs don’t in line with their needs. However, besides accepting the government aid program, farmer group can improve knowledge, skill and solution about agriculture from extension agent (Figure 2).

![Figure 2](image)

**Figure 2.** Expectations of farmer on Farmer Group Institution. Source: Primary data 2017, analyzed 2019.

![Figure 3](image)

**Figure 3.** Peformance Of Lingga Murni Group. Source: Primary data 2017, analyzed 2019.
The existing problems and expectations of the members of the Lingga Murni Farmer Group on their institutions indicate that the performance of the institution is not relevant, but quite effective because even though the development programs through farmer group have not fulfilled what is expected by the members. However, most of the members are still willing to run it. It is the desire to improve welfare that motivates them to run various programs.

[10] explained that the relevance required of organizational fulfillment of the needs of its members, while the level of success of the organization in carrying out its strategy, vision and mission, can be accessed by the Lingga Murni Famer Group institution. Dualism shows that although the program has not been in line with the real needs of members of the farmer group (Figure 3), they agreed and could implement various development assistance programs to improve their economy and welfare.

Members of farmer groups still support farmer groups even though they have many weaknesses. The existence of these institutions in the social life of farming is still needed. Farmer groups can be a forum for funding assistance from the government, a place of discussion and exchange of farming knowledge. The location of Cipari village which is quite far from the city makes the farming community have a low cosmopolitan level (Figure 4). Strengthening farmer group institutions requires a lot of government support, specifically related to the availability of capable extension agent and willing to communicate intensely with the community. Improving skills and financial capital assistance were needed by farmer group so that this institution programs can be more directed.

3.3. Strengthening Lingga Murni farmer group institutions to support the development of Jamblang-based medicinal plant agroforestry demonstration plots

Seven elements of institutional capacity development [11] are aspirations, strategies, organizational capabilities, human resources, systems and infrastructure, organizational structure, and culture. The institutional strengthening of the Lingga Murni Farmers Group is carried out through some aspects.

3.3.1. Improving Of Human Resources (HR). The level of education of most of the administrators and members of the Lingga Murni Farmers Group is relatively low (elementary and junior high school) so it is necessary to increase the abilities and skills of members of farmer groups as human resources (HR). Knowledge of Jamblang medicinal plants and training in agroforestry systems applied to demonstration plots.

Increasing the capacity of this resource is important to maintain the motivation of members of the group to play a role in the development of demonstration plots in a sustainable manner and can be in accordance with their aspirations (interests and hopes) through the vision, mission and goals of the group. In addition, the improvement of human resources also provides the ability for administrators...
and members of the group to develop strategies to realize their aspirations in the construction of the Jamblang agroforestry demonstration plot. Institutional strategies help them understand problems and think about solutions. The aim of farmer groups can be achieved along with being involved in the establishment of this Jamblang-based medicinal agroforestry demonstration plot.

Increasing human capacity in organizing so that each section of the Lingga Murni farmer group can play its role and responsibility in achieving common goals. [8] stated that organizational capabilities can be demonstrated by the control of member performance, financial management and program evaluation. This has not happened to the Lingga Murni Farmers Group. Therefore, by increasing the ability of members, it is expected to be able to build institutional systems and structure. The program of strengthening the Lingga Murni Farmers Group can actually be done through a short-term and long-term activity both internally and externally. An external program to increase the capacity of members of the Pure Lingga Farmers Group in the construction of jamblang-based medicinal agroforestry demonstration plots can be carried out by a research team or extension agent (as a development agent). This includes the delivery or dissemination of the functions of developing agroforestry demonstration plots as well as techniques for land management with the agroforestry system. The members of the farmer group gained knowledge of the purpose of the development of jamblang-based medicinal agroforestry demonstration plots.

3.3.2. Strengthening The Organizational Structure. The organizational structure of the Lingga Murni Farmers Group has roles and responsibilities in order to support the system, resources in the organization, strategies, and work skills in an integrated and comprehensive manner. The farmer group administrators need guidance and training for management to manage the institution having the ability to plan, manage, implement and control activities. Lingga Murni Farmer Group has a simple organizational structure (Figure 5). This structure was formed by facilitator (researcher team and technicians). The facilitator adds to the forestry section in the organizational structure of the farmer group (Figure 5). There have not been a forestry section in organizational structure for 2 (two) years. This caused forestry seedlings have received assistance, the impact of which has not been running optimally in line with expectations.

![Organizational Structure of the Lingga Murni Farmers Group](image)

**Figure 5.** Organizational Structure of the Lingga Murni Farmers Group. Source: Primary Data Processed.

By adding to the forestry section in the Lingga Murni farmer group, it is expected that the development of Jamblang-based medicinal plant agroforestry demonstration activities can run effectively and efficiently in accordance with the expectations of group members. The next step was the facilitator team together with the administrators to hold a group discussion regarding the potential, constraints, and solutions to the problems being faced by the group (Table 3).
Table 3. Opportunity, Constraints and Solutions after Institutional Strengthening

| Opportunity                                                                 | Constraints                                                                 | Solution                                                                                     |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| 1. The existence of Farmer group is very much needed as an appropriate place to discuss their agricultural problems. | At present the farmer groups still have not played the role they expected. Some of the activities carried out have not been successful, such as: | 1. Approach land owners by people close to the land owner (internal approach)                  |
| 2. The farmer group is one of the institutions that can maintain the brotherhood of the villagers. | 1. Collaboration with regional BPH III agencies: planting timber in 2018 (Mahogany, Albacia, Acacia, Gaharu, and Coffee @ 1000 seeds, but have not yet obtained land because the landowner has not given his consent | 2. Submitting a proposal to the Department of Agriculture to buy crops at a standard price.  |
| 3. Social capital (trust, tolerance, mutual cooperation) in the community is still sufficiently maintained. | 2. Collaboration with the Agriculture Service: planting corn and cardamom. The marketing results are not fixed. The result cause falling prices during the harvest. The farmers canceled to continue this activity | 3. Dissemination and training on jamblang plants and training in making processed products   |
|                                                                             | 3. Regarding the establishment of jamblang-based medicinal agroforestry demonstration plots many farming communities do not yet know the shape of the fruit, its benefits, and its processed products that have economic value. |                                                                                              |

Source: Primary data Processed

4. Conclusion and Recommendation

4.1 Conclusion
The institutional strengthening of the Lingga Murni Farmer Group can be done through short-term or long-term activities. The alternative priorities for institutional strengthening that have been carried out are the development of the forestry section in the organizational structure, program development, work plan development and continuing to evaluate activities by considering local culture. Institutional strengthening of farmer groups still maintains social capital and hereditary farming capabilities.

4.2 Recommendation
Strengthening institutions from the internal community of the Pure Lingga Farmers Group, requiring local administrative, government and NGO contributions. The independence of the Farmer Group is needed in the management of village land with the application of Jamblang-based medicinal agroforestry.

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