Study of NTFP trade policy: case of coffee and porang

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Abstract. Coffee and porang have been cultivated for a long time ago in forest areas in Java. Policies that support the development of coffee and porang in forest areas are estimated to be inadequate. The purpose of this study is to examine: (a) the level of policy support for the development of coffee and porang in the forest areas and (b) the suitability of coffee and porang cultivation in forest areas. This analysis uses the value of weighted indicator (VWI) method for the level of support, the scoring method for the perception and parameter indicators of forest cultivation characteristic that are different from the characteristic of agricultural cultivation for the terms of cultivation practices. The research results show that 1) support from The Ministry of LHK to the development of coffee and porang in the forest areas is limited, meanwhile the support from the Regional Government and state owned forest (Perhutani) is very high. 2), The suitability of coffee and porang cultivation in forest cultivation are: (a) coffee and porang which are planted under forest stand thrive relatively productive. Likewise, forest tree species are in good condition with a good canopy closures. (b) The cultivation activities do not interfere to either the protective forest or wood forest production as a life support system.

1. Introduction
Forest resources in ideal conditions can produce not only timber but also non-timber forest products (NTFP’s) Sunarta (2014)[1]. Previously, Law 41/1999 concerning forestry stated that forest products were biological, non-biological and derivative objects, and services originating from forests. NTFPs are both vegetable and animal forest products as well as all derivative and aquaculture products except wood originating from the forest, which is known to be 558 species, namely 494 types of plant NTFPs and 64 species of animal NTFPs (Ministry of Forestry 2007)[2]. The potential of NTFPs spread across 33 provinces, of which 20 are superior NTFPs, but have not been widely and well developed, even though the production is quite high (Ministry of Forestry 2009a)[3]. The development and utilization of NTFPs has not received sufficient attention, especially from the market. The development of a commodity can be done well, if it can be done from upstream to downstream (the availability of markets for these commodities), this is what seems to have not to happen for NTFPs of quite a variety of types.

Puspitojati, et.al (2016)[4] until now state that the NTFP market is generally only at the development stage, although certain NTFP commodities have already been developed. This is known from the fact that most of the market demands from the harvesting of plants that grow naturally is still sufficient and only a small portion of the harvesting activities that are cultivated. However, ironically the production potential of NTFPs obtained from collecting activities are generally not yet known or
not realised. In addition, there are also other factors that are not less important, namely the existence of a convention that places cultivation / cultivation products as agricultural crops and plants / products that grow naturally, they are NTFP plants / products.

One commodity that has penetrated in the world market and grown in forest areas is coffee, which has been cultivated in some forest areas in West Java. Another commodity that are also potential in international markets and has been cultivated in some forest areas in East Java are porang. Porang (Amorphophallus oncophyllum Prain) is a native plant in Indonesia. Porang grow wild in the forest, along the banks of rivers, mountain slopes, and under bamboo groves. Porang in Indonesia has long been known as one of the tubers used for food, which ordinary people call iles-iles. Since the second world war, porang or iles-iles has been exported in the form of cassava to other countries such as; Japan, Taiwan, Singapore and South Korea. In addition, porang has also been used in food industry and non-food industries, although not in big number (Koswara, 2013)[4]

Coffee and porang cultivation in the forest area are carried out with the agreement of the State Forest Company (Perum Perhutani) which begun in the early 2000s. Coffee planted in the forest area of West Java is estimated to have reached more than 10,000 ha, and porang in forest areas in East Java is estimated to be 1,600 ha (Puspitodjati et al 2016)[5].

Although coffee and porang plants have been cultivated in forest areas, they still seem to experience considerable development and marketing constraints. The constraints include: Development of coffee and food have not received optimal support from companies. Both coffee and poultry cultivation are carried out under stands of forest plants and are fully funded independently by farmers / communities without any financial support from the company. The coffee and porang cultivation business carried out by the community in the forest area, even though it has received approval from the company, seems only as an effort to increase community income, and corporate support is a form of community empowerment that has not been oriented towards obtaining profits for the company (Puspitodjati et al 2016)[5].

In addition to the development, NTFP marketing has also experienced obstacles, both in domestic trade and export policies, export taxes, and inadequate cross-sector market intelligence policies. To find out how coffee and food development policies are conducted this research is aim to: (1) assess the level of policy support for coffee and porang business development within the forest area, (2) investigate suitability of coffee and porang cultivation in forest cultivation.

2. Research method
2.1. Study Location and Data Collection
The study is conducted in five districts within three provinces: The regency of West Bandung and Garut (West Java), Blora (Central Java), and Nganjuk and Madiun (East Java). Data collection is obtained by several field surveys, interviews and Focus Group Discussions (FGD). The Interview is conducted using a questionnaire instruments to the respondents who have been determined before, in which at each sampling of allocated areas there are 30 responses. The FGD is conducted twice by involving relevant stakeholders.

2.2. Level of Policy Support for Coffee and Porang Development
The level of policy support for the business development of coffee and porang is analyzed by scoring method, using five criteria for superior NTFPs, namely: economic, biophysical and environmental, social, institutional and technological aspects, and other 22 indicators (Ministry of Forestry, 2009b)[6]. The stages of the analysis are:

a) Looking at each of the leading NTFP criteria, indicators and standards
b) Determining the value of each indicator with 3, 2 or 1, by comparing the standards set with the facts obtained from the field
c) Calculating the Value of Weighted Indicator (VWI) for each criteria with the following formula (Ministry of Forestry, 2009b)[6].

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Where:

\[ VWIk = \frac{n}{Wk} \left( \sum_{i=1}^{n} \frac{Vi}{Vimax} \right) \times 100 \]

Where:

- \( VWIk \): Value of Weighted Indicator k
- \( Wk \): weight of criteria k (%)
- \( n \): number of indicators on criteria k
- \( Vi \): value of indicator i criteria k
- \( Vimax \): maximum value of indicator 1 criteria k
- \( k \): criteria (economic, biophysical, institutional, social and technological)

d) Calculating the Total Superior Value (TSV) by summing the VWI of all criteria, or TSV = VWI economy + VWI biophysical + institutional VWI + VWI social + VWI technology, and
e) Determining the superior value (SV) of coffee / porang as the leading NTFP, using the following parameters:
- SV 1 is coffee with TSV = 78–100
- SV 2 is coffee with TSV = 54–77
- SV 3 is coffee with TSV = 33–53

Coffee and porang are considered as the Regency’s leading NTFPs if they have at least SV 2 and not superior NTFPs if they have SV 3. Furthermore, SV 1, SV 2 and SV 3 respectively show high, medium and low policy support for development and trade NTFPs (Forest coffee and porang).

2.3. Foresters Perception of Planting Coffee and Porang in the Forest

Foresters’ perceptions of planting coffee and porang in the forest are analyzed using a weighted or scoring value method (Marimin 2004)[7], the stages of analysis are:
a) Calculating the number of answers a, b and c that are chosen by the respondent,
b) Calculating the percentage of each respondent’s alternative answers, by dividing the number of each alternative answer by the number of all alternative answers times 100%, and
c) Investigating alternative answers with the highest, second, and lowest percentages each become alternative answers that show respondents’ perceptions of coffee and porang cultivation in the forest.

2.4. Investigating the suitability of Coffee and Porang Cultivation in Forest Cultivation

The suitability of coffee / porang cultivation practices in forests with forest cultivation is analyzed using characteristics of forest cultivation parameters. Forest cultivation is cultivation of many trees (area > 0.25 ha, tree height > 5 m, canopy closure > 40%) Puspitojati (2011)[8]. The practice of coffee / porang cultivation in the forest is assessed according to forest cultivation if it has the characteristics of the forest cultivation.

3. Result and discussion

3.1. Coffee

Coffee has now been cultivated in forest areas in various regions and generally by communities that penetrate the forest. Minister of Environment and Forestry Regulation Number P.12 / 2015 [9] states that coffee is a type of plant that can be cultivated in plantation forest areas. Indonesian coffee production is around 700,000 tons per year, consisting of robusta (75%) and arabica (25%). Indonesia is ranked second as the Robusta coffee producer, below Vietnam which produces 1.3 million tons of coffee per year, 80% of which is of type Robusta. For Arabica coffee, Indonesia is ranked third after Brazil and Vietnam. Where the production of these two countries is 3 million tons per year in a row (70% arabica) and 260 tons.
Indonesia is the best producer of arabica coffee in the world and the best robusta coffee producer in the world after Vietnam. The types of Indonesian arabica coffee that have been known to the world include Aceh Gayo coffee, Sumatra coffee, Java coffee from East Java, Bali coffee, Flores coffee, Wamena Papua coffee (Rukmana, 2014) and Preanger coffee from West Java.

Coffee cultivation under forest stands is constrained by conventions that place coffee plants as agricultural crops and agricultural products. As a result, coffee cultivation under forest stands is generally not planned by forest managers / companies and the results are not recorded in forestry statistics (Puspijak Research Team, 2014).[1] The existence of the convention does not fully apply in West Java, because coffee is cultivated under forest stands by the community and forest managers. This cultivation was initially carried out to overcome forest encroachment where the land was used for agricultural crops. But in its development, coffee is also cultivated to increase the benefits of forests for the community, increase participation in forest management and increase corporate income.

3.2. Porang

Porang (Amorphophallus muelleri) is currently cultivated in the Java forest area because of its high economic value. Porang flour can be processed into food ingredients, such as: konyaku (tofu) and sharitaki (noodles) as well as industrial raw materials such as capsules, tablet adhesives and paper reinforcement. Porang flour is an export commodity that is widely requested by Japan, Korea, Taiwan and several countries in Europe (Kasno, 2008)[12]. Farmers' cultivation of porang plants under forest stands bases on the Land Use Cooperation Agreement of Perum Perhutani and forest village communities. In this agreement, among others, it is stated that farmers are obliged to (a) maintain basic forestry plants and (b) help protecting forest areas. According to farmers, as long as cooperation in forest management takes place, forest security is guaranteed. Wood theft and other forest disturbances will not happen. Because of its high socio-economic benefits, people will continue to develop growing the plants in forest areas.

3.3. Level of Policy Support for Coffee and Porang Development in Forest

3.3.1. Coffee

3.3.1.1. Economic Criteria

The results of the analysis of the economic criteria for the feasibility of coffee as the leading FMU KPH in South Bandung have a weighted economic criteria (VWI economic) value of 31.67. Indicators that contribute high value are local trade, marketing scope, international market potential, business scope, and business entities that are involved. While the indicator that contribute to low value is export trade. The potential of the international market for KPH coffee in South Bandung (and West Java) is quite large, Heryawan (2016)[13] state that it is proven by the award from the Specialty Coffee Association of America Expo 2016 in Atlanta, Gorgia United States for The type of arabica coffee (Java Preanger Coffee).

3.3.1.2. Biophysical and Environmental Criteria

The results of the analysis of biophysical criteria and the feasibility of coffee as the leading FMU KPH in South Bandung have a biophysical and environmental VWI of 15. All indicators contribute high values. This shows that coffee is suitable to be cultivated in the KPH forest area of South Bandung. As a cultivated plant, coffee plants are not included as conserved plants (not listed in the Citex Appendix). As plants that need shade (Cahyono, 2011)[3], coffee is suitable to be cultivated under forest stands.

3.3.1.3. Social Criteria

The results of the analysis of the social criteria for coffee eligibility as the KPH's flagship South Bandung NTFP have a social VWI of 7.5. Indicators of business ownership account for a high value (three), while indicators of local community involvement contribute a low value (one). In the South Bandung KPH, coffee business in the forest is carried out through a partnership pattern between the
company and the community, based on a cooperation agreement between Perum Perhutani KPH in South Bandung and communities around the forest.

3.3.1.4. Institutional Criteria
The results of the analysis of the eligibility criteria for coffee as the leading FMU KPH in South Bandung have institutional VWI of 16.66. It indicates that institutional support for coffee operations is high. At the central level, support is provided in several regulations (regulations of the Ministry of Environment and Forestry, the Ministry of Industry, Ministry of Trade, the National Standardization Agency)[15] in the form of: (a) policies for the development of coffee processing industry clusters in coffee-producing regions, including West Java, (b) export policies to improve the competitiveness of Indonesian coffee in world trade, and (c) the determination of Indonesian coffee quality standards which have been implemented since 1990, and which currently affect to be registered in SNI 01-2907-2008 (BNS 2008)[15].

At the provincial level, support is given in the form of: (a) West Java Governor Regulation No. 11 of 2006 concerning Empowering Rural Communities of State Forests and Large Plantations (Governor of West Java, 2006)[16]. At the district level or the South Bandung KPH, supports for coffee business are provided by the South Bandung KPH in the form of opportunities to cultivate coffee under forest stands and facilitate the formation of farmer groups and cooperation business practices.

3.3.1.5. Technology Criteria
The results of the analysis of the coffee eligibility technology criteria as the leading KPH in South Bandung have a technology VWI of 10. Indicators of cultivation technology and processing technology of each contribute a value of 2 (two), or a weighted value of 5 (five). Indeed, the technology of coffee cultivation has been controlled by some farmers. They have received training from the Coffee and Cocoa Research Center in Jember, East Java, have received guidance from the Bandung Regency Agriculture and Forestry Plantation Office, and have conducted a comparative study to several coffee-producing regions.

Some farmers also have mastered the coffee processing technology which results in high added value. The results of interviews with farmers show that some farmer groups in the South Bandung KPH area keep mongoose in cages and produced civet coffee in rice and powdered forms, that the prices are high.

Based on the results of the overall analysis, the value of the weighted indicator (VWI) of coffee as the leading KPH of South Bandung FMU (and West Java Province) is 31.67, 15, 7.50, 15.56 and 10 for economic criteria, respectively. biophysics and environment, institutions, social, and technology. Coffee's total superior value (TSV) is 79.23 or coffee is a superior NTFP with a superior value (SV) of 1 (one). This means that coffee is KPH South Bandung's leading HHBK.

3.3.2. Porang
3.3.2.1. Economic Criteria
The results of the analysis of economic criteria for porang eligibility as Nganjuk and Saradan KPH leading NTFPs have a weighted economic criteria (VWI economic) value of 21.66. Indicators that contribute high value are local trade, marketing scope, international market potential and business scope. While indicators that contribute to low value are export trades. Porang international market potential from KPH Nganjuk and Saradan is quite large because people are attracted by consumers from various countries, including Japan, Korea, Taiwan and several countries in Europe (Kasno, 2008)[12]. However, porang from Nganjuk and Saradan KPHs are generally marketed to local markets (porang processing industries in Sidoarjo and Surabaya) in the form of porang chips.

3.3.2.2. Biophysical and Environmental Criteria
The results of biophysical criteria analysis and environmental feasibility as Nganjuk and Saradan KPH leading NTFPs have a biophysical and environmental NIT of 13.99. This shows that porang is suitable
to be cultivated in the Nganjuk and Saradan KPH forest areas. As a cultivated plant, porang plants are not included as plants that are conserved (not listed in the Citex Appendix). As plants that need shade (Kasno, 2008)[12], the species is suitable to be cultivated under forest stands.

3.3.2.3. Social Criteria
The results of the analysis of social criteria for the feasibility of people as the leading KPH of Nganjuk and Saradan have a social VWI of 7.5. Indicators of business ownership account for a high value (three), while indicators of local community involvement contribute a low value (one). In KPH Nganjuk and Saradan, the cultivation under forest stands is carried out through a partnership between the company and the community, based on a cooperation agreement between Perum Perhutani and communities around the forest. In the agreement, the community is given the opportunity to cultivate the plants in the forest and it is obliged to participate in forest management.

3.3.2.4. Institutional Criteria
The results of the analysis of the criteria for porang eligibility institutions as Nganjuk and Saradan KPH leading NTFP have institutional VWI of 15.56, which indicates that institutional support for business activities is moderate. At the central level, support is provided by the Ministry of Forestry which launches the Decree of the Directorate General of Watershed Management and Social Forestry number 69 / V-SET BPS / 2011[17] concerning the Determination of National Non-Superior Forest Product Types and the Location of the Development of National flagship NTFP Clusters, which is stipulated as NTFPs National superior. This policy encourages the development of porang clusters in several provinces in Indonesia.

In East Java, support for the development of porang is given by the Governor through the Decree of the East Java Governor Number: 188/798 / Kpts / 013/2008 concerning NTFPs[18], which stipulate that the membership is one of the leading NTFPs in East Java Province. This Governor's support will encourage the development of porang on a wide scale in several districts in East Java. In Nganjuk District, support is provided by the Regent by issuing a Nganjuk Regent Decree Number 188/173 / K / 411.013 / 2014[19] concerning the Establishment of Nganjuk District as a Center for Porang Non-Superior Wood Products. This regent's decision places porang as a priority commodity to be developed.

3.3.2.5. Technology Criteria
The results of the analysis of the technological criteria for the feasibility of the leading KPH Nganjuk and saradan NTFP have a technology VWI of 10. Indicators of cultivation technology and yield processing technology each contribute a value of 2 (two), or a weighted value of 5 (five). Indeed, the cultivation technology of Porang has been controlled by some farmers. This is obtained from the results of observations and interviews with farmers and traders that are processing porang tubers with simple technology into porang chips. While porang cultivation is still not intensive.

Based on the overall analysis, the value of the porang weighted indicator (VWI) as the Nganjuk and Saradan KPH leading NTFP is 21.67; 13.99; 7.50; 14.44 and 10 for economic, biophysical and environmental, institutional, social and technological criteria. The total superior value (TSV) of porang is 67.69 or porang is a superior NTFP with a superior value (SV) of 2 (two).

On the context of level of policy support, this happens even though there have been policies issued from the central to the district level to support the development of coffee and porang (NTFP), but this has not been sufficient as a high level of support because it does not yet have a training center, a trade center and a coffee processing laboratory of porang. So that the existing development is estimated to be only at the local level.

3.4. Perception of Foresters Against Coffee and Porang in the Forest
Perception analysis is very necessary in the context of NTFP development. Here, the perception is seen as the perception of relevant stakeholders. Where these stakeholders are directly involved in
NTFP (community) cultivation activities with Perhutani through the PHBM program and supporting stakeholders such as the government from the central to the regional / district with its policies to the available facilities and infrastructure.

3.4.1. Coffee

The survey results of perceptions of coffee cultivation under forest stands in table 1 show that most forestry employees (88%) agree that coffee is cultivated under forest stands. This is in line with the views of forestry employees who hold that coffee cultivation under forest stands increases the benefits of forests as producers of goods and services.

Table 1. Perception of coffee cultivation in the forest

| No. | Group of Coffee Farmers                             | Agree | Disagree | Abstain |
|-----|-----------------------------------------------------|-------|----------|---------|
|     |                                                     | Number of Farmer (%) | Number of Farmer (%) | Number of Farmer (%) |
| A.  | Central Java                                        | 89    | 10       | 1       |
| 1.  | Provincial Forestry Service                        | 13    | 68       | 5       |
| 2.  | Perum Perhutani Divre of Central Java              | 28    | 97       | 1       |
| 3.  | KPH Pati                                            | 22    | 92       | 2       |
| 4.  | KPH East Pekalongan                                | 26    | 93       | 2       |
| B.  | West Java                                           | 63    | 6        | 3       |
| 1.  | Provincial Forestry Service                        | 20    | 91       | 2       |
| 2.  | Perhutani Divre of West Java                       | 25    | 89       | 2       |
| 3.  | KPH South Bandung                                   | 18    | 82       | 2       |
| Total A + B |                                          | 152   | 16       | 4       |

Source: Puspitodjati, et.al., 2016[4]

3.4.2 Porang / Tubers

The survey results of perceptions of tubers cultivation under forest stands in table 2 show the views of most forestry employees (88%) agree that tubers are cultivated under forest stands. This is in line with the view of forestry officials that cultivating tubers under forest stands increases the benefits of forests as producers of goods and services.

Table 2. Perception of cultivating tubers in the forest

| No. | Group of Coffee Farmers                             | Agree | Disagree | Abstain |
|-----|-----------------------------------------------------|-------|----------|---------|
|     |                                                     | Number of Farmer (%) | Number of Farmer (%) | Number of Farmer (%) |
| A.  | Central Java                                        | 98    | 5        | 0       |
| 1.  | Provincial Forestry Service                        | 22    | 100      | 0       |
| 2.  | Perum Perhutani Divre of Central Java              | 29    | 100      | 0       |
| 3.  | KPH Pati                                            | 22    | 92       | 2       |
| 4.  | KPH East Pekalongan                                | 25    | 89       | 3       |
| B.  | East Java                                           | 38    | 91       | 2       |
| 1.  | Provincial Forestry Service                        | 32    | 91       | 2       |
| 2.  | Perhutani Divre of East Java                       | 16    | 100      | 0       |
3.5. Suitability of Coffee and Porang Cultivation in Forest Cultivation

Suitability analysis is carried out to find out whether or not NTFP cultivation, especially coffee and porang, can be carried out well without disturbing forest trees. In addition, it is also known how coffee and porang crops should be planted (what is the spacing of NTFP planting and what is the spacing of woody plants should be planted with a better growth). By using the suitability analysis, it is expected that the existing policies can support the development of NTFP in the forest. In addition, it can also be understood that there exists a potency of productivity, so that the existing market potential can be fulfilled optimally, and finally it can provide economic benefits, especially for the community involved in the NTFP cultivation.

The use of forest area is carried out in principle without changing the condition of the forest stand. This utilization is carried out for planting under stands with the aim of optimally utilizing the growing space without reducing the main function of the forest so as to obtain environmental benefits, social benefits and economic benefits. For this reason, it is hoped that land use under forest stands for coffee and porang cultivation will not reduce the number of trees so that the tree canopy closure in forests remains high (> 40% in the case of production forests).

3.5.1 Coffee

The results of interviews with forest farmer groups in the KPH planting area in South Bandung, it is obtained information that coffee plants are thrive and productive. Coffee is grown at a distance of 2 m X 2.5 m between forestry plants (Eucalyptus and mixed jungle wood) which are planted at a distance of 4 m X 4 m. Likewise forestry and protected area are in good condition, with canopy cover estimated at more than 60%.

The results of observations on coffee cultivation under the stands of protected forests in the KPH North Bandung working area are similarly to happen. Coffee plants are cultivated under forest stands, without changing the condition of forest stands are thrive and productive. The coffee plant is planted with a distance of 2 m X 2 m and 2 m X 3 m which is cultivated between pine stands Age Class (Kelas Umur/KU) IV and KU VIII with a distance of 4 m X 4 m and 4 m X 6 m.

It can be stated that land use under stands of protected forests with coffee plants in general does not change the condition of forest stands. Of course, it is expected that the function of protected forests as a protection for the life support system is maintained. This condition also increases community participation in sustainable protection forest management that provides benefits to farmers.

3.5.2 Porang

The results of interviews with farmers in the Nganjuk and Saradan KPH working areas that porang plantation under tree stands of protected forests and production forests could grow well. Porang production cultivated under the sonokeling forest stand is higher than the production of porang under teak stands. As it is for porang cultivated under teak stands, production of porang would be higher when it is cultivated under the Age Class/ KU teak stands (KU) III compared to the production of porang under other KU teak stands.

The activities of farmers cultivating porang plants under the forest stand are carried out bases on the Collective Land Use Agreement which is jointly agreed between Perum Perhutani and the village forest community. In the joint agreement, it is stated that farmers are obliged to: (a) maintain basic forestry plants and (b) help protect and protect forest areas. This collaboration has a positive impacts on forest management, and at the same time forest security is also guaranteed, timber theft and other
forest disturbances would not occur. With these high economic and social benefits, people will be continuously developed during their life in the forest areas.

It can be said that land use under protected forest stands and production forests with *porang* plants in general does not change the condition of forest stands. This is certainly expected to function of the protection forest for the protection of the life support system and the function of production forests are actually increasing. This condition also increases community participation in the management of protected forests and production forests which then also provide benefits to farmers.

4. Conclusion
a. The support from the Ministry of Environmental and Forestry to develop coffee and *porang* under the stands in protected forests and production forests is still limited, while the support of the Regional Government and Perhutani Corporation for the development of coffee and *porang* under the stands in protected forests and production forests is high.
b. Foresters’ perceptions on the cultivation of coffee and *porang* (and other tubers) under the forest stand are: (a) coffee and *porang* cultivation under forest stands improve the benefits of forests as producers of goods and services, (b) coffee and *porang* obtained from forest areas should be recorded in the Environment and Forestry Statistics and calculated as the contribution of the Environment and Forestry Sector and (d) coffee and *porang* need to be cultivated under forest stands in a large scale and it is expected to become the leading NTFPs commodity for the future.
c. Coffee and *porang* cultivation under forest stands can be done without disturbing the function of protected forests as a life support system and the function of production forests that produce forest products.

5. Suggestion
The results of coffee and porang cultivation should be well recorded and recalculated in the LHK statistics so that its contribution to the economic development could be calculated exactly. In addition it is necessary to establish the production targets so that the cultivation of coffee and porang can be managed more intensively.

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