

# Role of joined farmer groups in enhancing production and farmers income

*by* Sitti Bulkis

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## Role of joined farmer groups in enhancing production and farmers income

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**Abstract.** Product and farmers income still becomes a global issue in economic development. The study aims to (1) describe the implementation of the role of joined farmer groups (called *Gapoktan*) in accordance its function and (2) to analyze the role of *Gapoktan* in increasing production and farming income. The study was conducted in Camba Sub District, Maros District, South Sulawesi, Indonesia in 2017 and choosing *Aspana* *Gapoktan* as Case Unit. Data collection is done by a combination of qualitative and quantitative methods. Qualitative data were collected by Focus Group Discussions method, indepth interview and document study while quantitative data was collected through survey method on 60 farmers respondents. The result showed that, (1) *Aspana* *Gapoktan* has implemented a role related to its function as a business unit in the provision of production facilities and farming as well as marketing but has not implemented roles related to its function as a processing business unit, and saving and loan (2) *Gapoktan* role in increasing production and income of farming is facilitating procurement of farm inputs and agricultural production tools for farmers and developing various commodities in farming activities, especially horticultural crops. More than 44.00% of farmers perceived that their production increased about 10.00% - 25.00% and more than 68.00% of farmers perceived that their income increased by about 10.00% - 25.00% for the last three years. It is necessary to increase the role of *Gapoktan* through (1) the procurement of horticultural product processing industry and (2) doing savings and loan activities by utilizing 40.00% of funds managed by *Gapoktan* or through the formation of cooperatives under the management of *Gapoktan*.

### 1. Introduction

One of livelihood rural communities source is agriculture-based activities [1]. However, farm production and income are still a problem in economic development [2]. One effort to improve farm income is strengthening farmer institutions [3-6]. Combined Farmer Group (*Gapoktan*) is one of farmer institution that can give contribution to increase production and income of farmer family. This institution is developed to fulfill the feasibility of economy scale and

business efficiency, so that it functions as a unit of the provider of production facilities and infrastructure, farm / production unit, processing business unit, marketing business unit and micro finance / savings and loan business unit [7].

At the meantime, the role of Gapoktan in increasing production and income of smallholders are still becomes serious issue to solve. In other words, it is really hard to explain whether or not Gapoktan has truly function as business unit, marketing unit, and microfinance unit for the farmers in rural area, including its implementation in improving farmer's welfare. Therefore, specific objective of the research is to (1) describe the implementation of the role of Gapoktan in accordance with its function, and (2) to analyze the role of Gapoktan in increasing production and income of farming.

### Method

The research was conducted in Camba Subdistrict, Maros District, with consideration of Camba Subdistrict area in highland ecosystem which has potential in developing food crop (especially horticultural crops). The result design is a case study, by selecting Aspana Gapoktan as the case unit. The research employed qualitative approach. To clarify the analysis on the second objective, the qualitative data is supported with quantitative data so that it is used the mixed of combining qualitative and quantitative methods [8, 9]. Qualitative Data Collection is conducted through: (1) In-depth-interview to informants who determine purposively. (2) Focus Group Discussion (FGD) and (3) document studies. While Quantitative Data Collection is done through Survey Methods on farm households on two selected Poktans. Informants consisted of farmers, farmers group (Poktan) and Gapoktan officials and Agricultural Extension Workers (PPL). The number of informants as a whole consists of 9 people while the total number of FGD participants consists of 12 people. The farmers' sample (respondent) as a whole is 60 people, consisting of 25 members of Poktan-Duppa Siruntu and 35 members of Poktan-Pammase.

### Results and Discussion

#### 3.1. Description of Aspana Gapoktan

Gapoktan is a merging of several farmer groups (Poktans), where the farmer group is mostly formed from several years before the formation of Gapoktan. The establishment of Poktan in Camba Sub-district of Maros Regency, officially confirmed in 2017 [10]. While the formation Gapoktan started in 2008 and one of Gapoktan formed in that year is Aspana's Gapoktan. The resources owned / controlled by Aspana's Gapoktan until 2016 [11] are consists of *Human resources* covering: (a) the number of members / farmers involved (439 persons) and (b) the education level of the gapoktan's Administrator (elementary to senior high school); *Natural resources* in the form of: (a) semi-technical irrigated rice field (115 ha), non-technical irrigated rice fields (165 ha) and 68 ha of rain-fed rice fields; *Physical resources* consist of: (a) facilities / equipment and technologies owned or accessible to group members; (b) Hand tractor 35 units, (c) threshing machine (280 units), sickle (587 units) and farmer group (11 groups); *Financial resources* in the form of receivables. However, due to incomplete group administrative records (including finances), the amount of receivables is not known with certainty; *Organizational structure* i.e. rules / norms that exist in Gapoktan.

#### 3.2. Role of Gapoktan in Increasing Production and Income Farming

The role of Gapoktan referred to in this case is related to the five functions contained in the Regulation of the Ministry of Agriculture, Republic of Indonesia (Permentan RI) No. 67 of 2016 namely as (1) Provider of Facilities and Production Infrastructure Business Unit, (2) Unit Farming / Production, (3) Processing Business Unit, (4) Marketing Business Unit and (5) Savings and Loan Business Unit [7]. To increase farming production and household income of farmers should be Aspana's Gapoktan performs minimal role in accordance with the five functions.

*3.2.1. Role of Gapoktan as Provider of Facilities and Production Infrastructure.* The role of the Aspana Gapoktan that is routinely carried out in relation to this function is the way farmers work in the provision of production facilities depending on subsidized and certified seeds. In addition, they facilitate procurement of agricultural tools and machinery for farmer groups to be used by the farmers who are members. Especially in the provision of subsidized fertilizers, the first step is to facilitate Poktan in preparing the Group's Definitive Needs Plan (RDKK) of production inputs (Saprodi) together with its members, in accordance with the area of managed land. RDKK which has been prepared will be proposed to Gapoktan to be forwarded to the competent party in providing subsidized fertilizer. Farmer-level fertilizer receipts are sometimes late (not timely). In this condition, the poktan management strives in such a way that the saprodi can be accepted by its members with a delay that is not too long. The trick is to confirm with Gapoktan. Furthermore, Gapoktan make direct confirmation to relevant stakeholders, for example Agricultural Extension Field (PPL) who served in each Village.

Saprodi needs proposed by Poktan to Gapoktan Aspana, among others, in the form of subsidized fertilizer consisting of Urea, SP3, SP-36, ZA, NPK and Organic Fertilizer. The amount of fertilizer proposed is always the same as the amount received by farmers. Based on data on RDKK Poktan [11], the realization of subsidized fertilizer demand in 2016 for planting area of 267.05 hectares consists of urea fertilizer 133,525 kg, SP-36, ZA and NPK 53,410 kg each and organic fertilizer as much as 267,050 kg. This number is spread across 11 farmer groups. The amount of fertilizer proposed depends on the area of land managed by the farmers of each Poktan member. For time efficiency, fertilizer demand is proposed once for two growing seasons. Efforts Gapoktan to increase production and income of farmers through the facilitation of the procurement of agricultural production facilities (fertilizer), causing farmers tend to more easily access production facilities, especially subsidized fertilizer. Even more than 56.00% of farmers perceiving more easily access current production facilities when compared to the previous three years (table 1).

**Table 1. Farmers' Perception** on Increasing Access to Production Input

| No | Perception     | Aspana Gapoktan      |        |                |        |
|----|----------------|----------------------|--------|----------------|--------|
|    |                | Poktan Duppa Siruntu |        | Poktan Pammase |        |
|    |                | n                    | %      | n              | %      |
| 1  | Easier         | 14                   | 56.00  | 31             | 88.57  |
| 2  | The same       | 11                   | 44.00  | 4              | 11.43  |
| 3  | More difficult | 0                    | 0.00   | 0              | 0.00   |
|    | Total          | 25                   | 100.00 | 35             | 100.00 |

The ease to access production input (saprodi) tends to differ between farmers from one poktan and other poktan farmers. Farmers from Poktan Pammase, for example, tend to be more accessible to fertilizers when compared to farmers who are members of Poktan Duppa Siruntu. This condition is related to the distribution of fertilizer, which sometimes comes late. Although subsidized fertilizers sometimes have not arrived at the time of need, however, farmers have benefited from subsidized fertilizers that have been facilitated by Poktan and Gapoktan. The benefits are not only for rice farming but in the last three years, especially for horticultural crops

*3.2.2. The Role of Gapoktan as Production Business Unit.* Referring to Permentan RI [6], each gapoktan ideally has a business unit that produces commodities to meet the needs of its members and market needs so as to guarantee the quantity, quality, and continuity of the results. The type of commodities cultivated by farmers within the range of Gapoktan Aspana consists of rice, corn, beans and horticulture. The overview of rice and corn and peanut production is shown in table 2.

**Table 2.** Productivity of Rice, Corn and Peanut Crops cultivated by Farmers in Aspana Gapoktan

| No | Description                          | Rice     | Corn   | Peanuts |
|----|--------------------------------------|----------|--------|---------|
| 1  | Extent of planting / harvesting (ha) | 463.00   | 87.00  | 128.00  |
| 2  | Production (ton)                     | 3,357.00 | 324,00 | 232,00  |
| 3  | Productivity (ton/hectare)           | 7.25     | 3.72   | 1.82    |

Source: [12]

In addition to rice crops and crops, the most developed crops of Gapoktan farmer group members are horticultural crops. In cultivating horticulture, farmers are also assisted by the means of production in the form of fertilizer subsidies by the government. Submission of fertilizer demand is done every rice growing season through RDKK at each Poktan and then forwarded to Gapoktan for follow up to company. That is, fertilizer subsidy is not only intended for rice plants but also for other types of crops (crops and horticulture) gradually. The dominant crops cultivated in early 2017 are red chili, tomato and watermelon (table 3)

**Table 3.** The Production of Several Horticultural commodities in Aspana's Gapoktan, 2016

| No | Description                               | Red Chili | Tomato | Watermelon |
|----|---|-----------|--------|------------|
| 1  | Extent of planting / harvesting (hectare) | 40.13     | 8.30   |            |
| 2  | Number of stems                           |           |        | 2,000,000  |
| 3  | Production (ton)                          | 313.00    | 65.00  | 7,00       |
| 4  | Productivity (ton/hectare)                | 5.47      | 7.80   |            |

Source: [12]

Development of horticultural crops facilitated by Gapoktan through Special Effort (UPSUS) Horticulture program has an impact on increasing production of Farming mainly on commodities of large red pepper and fruit tomatoes (apple tomatoes). All farmers perceived that the production of farming in general increased compared with the previous three years. Similarly, the production of horticultural crops is shown in table 4.

**Table 4.** Farmers' Perceptions of Increasing Horticultural Crop Production

| No | Farmers' Perceptions | Aspana Gapoktan      |        |                |        |
|----|----------------------|----------------------|--------|----------------|--------|
|    |                      | Poktan Duppa Siruntu |        | Poktan Pammase |        |
|    |                      | n                    | %      | n              | %      |
| 1  | Increase < 10%       | 14                   | 56.00  | 11             | 31.43  |
| 2  | Increase 10%-25%     | 11                   | 44.00  | 24             | 68.57  |
| 3  | Increase >25%        | 0                    | 0.00   | 0              | 0.00   |
|    | Total                | 25                   | 100.00 | 35             | 100.00 |

Especially on horticultural commodities, more than 44.00% of farmers perceived that the increase in production ranges from 10.00% - 25.00%. Differences in production increase as shown in Table 4, tend to be related to environmental conditions, especially irrigation. Both rice and palawija crops, as well as horticulture, can contribute to farmers' income if farmers are in the desired condition with adequate land and air conditions. The description of farm income in several commodities shown in table 5.

**Table 5.** Farming Revenues in Some Commodities Cultivated by Poktan Members in Aspana Gapoktan

| No | Commodities cultivated | Farm costs (IDR/hectare) |           |
|----|------------------------|--------------------------|-----------|
|    |                        | Highest                  | Lowest    |
| 1  | Rice                   | 2,050,000                | 1,500,000 |
| 2  | Corn                   | 1,600,000                | 1,450,000 |
| 3  | Peanuts                | 3,850,000                | 3,400,000 |
| 4  | Watermelon             | 6,300,000                | 5,600,000 |
| 5  | Red Chili              | 7,500,000                | 7,250,000 |
| 6  | Tomato                 | 2,750,000                | 2,250,000 |

Table 5 clearly shows that, there is a difference in farm income for the same commodity. This tends to be related to differences in crop maintenance (including use of inputs) and irrigation conditions. The highest revenue, contributed by chillies ranged from IDR 7,250,000 – IDR 7,500,000 per hectare. Nevertheless, in general these commodities contribute a higher income when compared to the previous three years, especially to horticultural commodities (table 6). Based on the perception of farmers, it is indicating that all farmers experience increasing income of farming. More than 68.00 percent of farmers perceived that their income increased 10% - 25% when compared with the previous three years.

**Table 6.** Farmers' Perceptions of Increasing Farm Income

| No | Farmers' Perceptions | Aspana Gapoktan      |        |                |        |
|----|----------------------|----------------------|--------|----------------|--------|
|    |                      | Poktan Duppa Siruntu |        | Poktan Pammase |        |
|    |                      | n                    | %      | n              | %      |
| 1  | Increase < 10%       | 8                    | 32.00  | 4              | 11.43  |
| 2  | Increase 10%-25%     | 17                   | 68.00  | 31             | 88.57  |
| 3  | Increase >25%        | 0                    | 0.00   | 0              | 0.00   |
|    | Total                | 25                   | 100.00 | 35             | 100.00 |

3.2.3. *Role of Aspana Gapoktan as Processing Business Unit.* Based on Permentan RI [6], Aspana Gapoktan ideally plays a role in providing services, either in the form of agricultural machinery and technological tools in processing of commodity production, including processing, sorting / grading and packing to increase the added value of the product. In fact, until early 2017, Aspana's Gapoktan has not more given to the role of agricultural processing. Processing of farming results done by poktan members so far in order to increase the added value of farm production is still done simply based on their respective experience. For paddy (grain) for example, farmers have sufficient experience for this, both in terms of drainage and in terms of milling.

Especially on horticulture, postharvest handlers are only cleaning and grading (there is no industry that process from primary product to secondary product). Thus, the household income of farmers is directly related to the profit of farming. If the profit of farming is low or not increases then household income is also low and does not increase. Household income can also be affected by new employment opportunities for household members. Thus, there should be a new job opening with poktan and Gapoktan related to its function as management of production facilities, in the upstream sector and downstream sector handling through outsourcing of results. Based on the results of FGD and indepth interview, the need perceived by Gapoktan based on the potential of horticulture production is chili and tomato processing industry to be sauce accompanied by training and mentoring for the workforce that will be involved in the processing industry.

3.2.4. *Role of Gapoktan as Marketing and Microfinance Business Unit.* Referring to Permentan RI [7], Gapoktan Aspana ideally serves to provide services/facilitation of agricultural marketing of its members, whether in the form of network development and business partnership with other parties, as well as direct marketing. The current condition, Gapoktan Aspana does not provide many roles related to this because farmers in general have experienced marketing the results of their farming based on their choice. Gapoktan in this case only plays a role if there is a price jump (up or down drastically) even though in general farmers already know the prevailing price phenomenon.

The problem that farmers often encounter with the marketing of chilies and tomatoes is that sometimes the price decreases and is considered cheap but still has to be sold because the product cannot stand it. Therefore, [14, 15] and based on available resources, it is necessary to strengthen the institutional role by: Improvement of physical resources in the form of procurement Horticulture crop processing industry (chili sauce and tomato sauce), accompanied by a training activity of making sauce. Thus, horticultural production can be marketed in Gapoktan for further processed into ready-to-consume products.

Referring to Permentan RI [7], Gapoktan Aspana ideally plays facilitate the capitalization of Farming to members through credit / capital of Farming or from self finance Farmers / residual business results. In fact, Gapoktan Aspana currently has no productive economic activities either in the form of savings and loan (SPP) members or in other economic enterprises (UMKM). Productive activities in the form of capital lending for farm input payments take place in the first year until the third year after Gapoktan receives funding in 2008. However, because the cooperation (mutual understanding) of poktan and gapoktan members in the management & utilization of aid funds are still lacking, then the activity is not going well.

#### 4. Conclusion

Aspana Gapoktan has not run its role optimally in accordance with the general function of gapoktan according to Permentan no. 67 years 2016. The role of Gapoktan associated with its function as a business unit provider of production facilities and farming unit (production) is quite good. These roles make farmers more accessible to production facilities and all farmers have increased production compared to the previous three years. On the other hand, the role of Aspana Gapoktan Aspana related to its function as a business unit of processing and marketing and savings and loans, is still very less. Therefore, it is necessary to increase the management of financial resources through savings and loan activities by utilizing 40.00% of funds managed by Gapoktan or through the establishment of cooperatives under the management of Gapoktan; increase of physical resources in the form of procurement Horticulture crop processing industry (chili sauce and tomato sauce) should be accompanied by training activities of making sauce. It is clear that Gapoktan has a function as facilities and infrastructure provider, production, marketing and microfinance business units.

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