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THE IMPACT EVALUATION STUDY IN STRENGTHENING FOOD
DISTRIBUTION SYSTEM

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ABSTRACT

The falling price grain in the harvest season and the unavailability of food reserves for facing drought are two interrelated things that always harm farmers and rural communities. Facing such uncertainty, the government launched a program to provide protection and empower farmers, farmer groups, and or farmer group associations (GAPOKTANs). Therefore, this work proposes to evaluate that program by using the descriptive, SWOT, and financial analysis. The outcomes of this survey show that farmers' income has increased significantly and GAPOKTANs have been developing their function as a blog which buy grain from farmers during the peak harvest period and distribute rice to stabilize the cost during the scarce period in the mart.

INTRODUCTION

According to Suryana (2013), there are three main reasons that reinforce the food security to become one of the priorities in the national development. Those are (a) accessing to food in a sufficient quantity, quality, variety, and nutrition is a human right; (b) consumption of food and adequate nutrition are the basis for the formation of human resources in order to live healthy, active and productive; and (c) food security is fundamental to the resilience of the economy, national security, and even a sovereign state. One feature of the national food security is the availability of sufficient food on the macro side. Thankfully, Indonesia already has it. But, there is no doubt that there are still

some areas where people are poor and have a low income so they are unable to access the food. The Indonesian government, through their programs, have been able to reduce the number of the poor people (BPS/Central Bureau of Statistics, 2014).

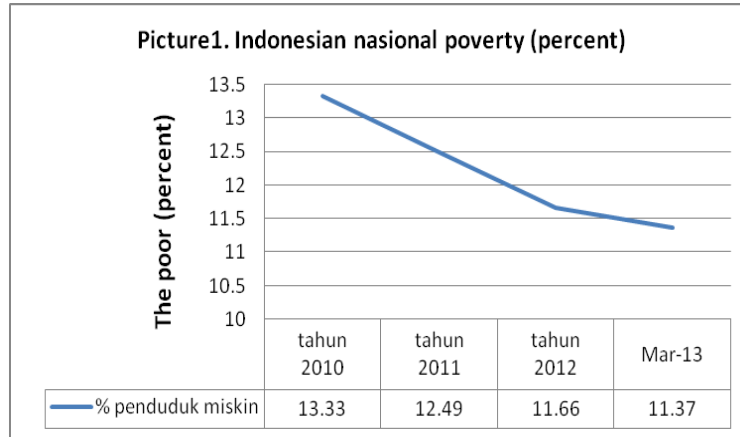


Figure 1. Poverty rate in Indonesia (in percentage)

Source: BPS (2014)

The share of poor people continues to decline as evidenced in Figure 1. This is due to the stable growth of Indonesia's economy over the past eight years and it has provided momentum for investment in the country. One of the approaches taken by the central government is to allow healthy competition among provinces (Tan & Amri, 2013). Most of the poor exist in rural areas with agricultural livelihoods on the business scale of less than 0.5 hectares, and many of them become tenants on the farm. In urban areas, only 8.78% of the people are poor. This is much lower than in rural areas (BPS, 2014). The centers of crop yield, especially rice and corn are spread in a diverse topography. In certain areas, farmers, farmer groups, and Farmer Group Associations/*Gabungan Kelompok Tani* (GAPOKTANs) have limited ownership of infrastructures (production, processing, and storage) and different harvest time. Also, they frequently face an unfavorable climate during planting and harvest season. In such conditions, they always face various issues, among others, are as follows:

- a. The limited venture capital to execute the activities such as processing, store, distribution/marketing after the crop;
- b. The low bargaining power during the harvest in the raining season;
- c. The limited access to food (rice) for consumption in drought season because they do not have sufficient food reserves;
- d. The low quality of the production, distribution delays and poor marketing of the crop due to lack of infrastructures and supporting production inputs (drying floor, warehouse, dryer, rice and corn milling, proper village roads, etc.).

As an implication of those conditions, the farmer groups and the farmer group association cannot perform activities of processing, storage and distribution or marketing of their products. These circumstances, then result in:

- (i) Price volatility of the commodities such as grain, rice, and corn during the harvest time, and
- (ii) Lack of food (rice) in the drought season or even crop failure.

Facing this uncertainty, the government launched a program to provide protection and empowerment for farmers and GAPOKTANs. This protection is aimed at protecting them from a falling price of grain, rice and or corn at harvest time. Besides, this may help them to face any food accessibility issues. The Ministry of Agriculture, through its Agency of Food Security, since 2009, had been conducting a program to strengthen the LDPM (Institution of Society Food Distribution) (BKP, 2014). The government allocates funding from the state budget (APBN) to empower GAPOKTANs for conducting food distribution activities as well as to provide food reserves. Through these programs, the farmers are encouraged to strive together in one GAPOKTAN so they can improve their competitiveness through the improvement in efficiency and business scale as well as through the provision of facilities for the rice and corn production centers. These programs are conducted by:

1. Delivering financial assistance through the strengthening institutional program (since 2009) to support the capital of the GAPOKTANs;
2. Providing administrative and technical assistance for GAPOKTANs and their business units in managing their financial condition to conform to the applicable regulations.

The GAPOKTANs receiving financial assistance are obliged to buy, from the farmers at the harvest time, grain, and rice with a minimum price according to the Government Purchase Price (GPP) as well as maize with a minimum price according to the Regional Reference Price (RRP). This is done to stabilize the prices at the farm level. In their operations, the GAPOKTANs possess 1) distribution, marketing, and processing business unit for developing the business of grain, rice, or corn in order to increase the bargaining power of their members and develop a marketing network with marketing agencies in the region and outside the region, 2) the food reserve business unit which is required to utilize the received social assistance funds for purchasing grain, rice, and corn as food reserves at the GAPOKTAN level. Food reserves are intended to meet the needs of the members of the GAPOKTANs at all times, especially in the time of scarcity.

Study Objectives

This research aims to improve the institutional function to facilitate the strengthening of farmers and GAPOKTANs in order to increase the scale of commercial farming through (a) the distribution of social assistance funds, (b) mentoring by the instructors or field officers, and (c) coaching of the regional technical team and provincial coaching team. The government facilitations are expected to contribute to (a) maintaining price stability at the farm level, (b)

increasing the income of farmers and production of rice and corn, and (c) increasing the food access of the communities.

LITERATURE REVIEW

Impact Evaluation Approach

According to the World Bank (2013), Impact Evaluation (IE) rigorously measures the impact of a project on the beneficiaries. This is usually done by comparing the results (before and after) between the beneficiaries and the control group. IE needs to be done strictly and accurately in order to arrive at a true picture of how to best achieve the desired results. The desired results of this general target could include the establishment of food price stability in the region and the realization of food security at farmers' household level.

Randomization

This technique randomly gives a predetermined fraction of beneficiaries eligible for the project, creating what is called a treatment group while the remaining becomes the control group. The difference in outcome between the treatment and control group is the impact of the project (Adriana, 2013).

Propensity Score Matching

Propensity Score Matching is a tool to identify a suitable comparison group to be compared with the project beneficiaries (treatment group). Basically, this tool is used to find a comparison group consisting of individuals who did not actually receive the project, but given the observable characteristics, had the possibility of receiving the same project as individuals in the treatment group. The impact of this project is the result of differences between the treatment and comparison groups.

Pipeline Comparison

This method compares the results of the beneficiaries who have received the project with those who have not received the project but will accept it. This method is based on the assumption that beneficiaries who have received the project are similar to those who will accept the project. The impact study method used is a combination of randomization and a double difference (Prasetyo, 2013).

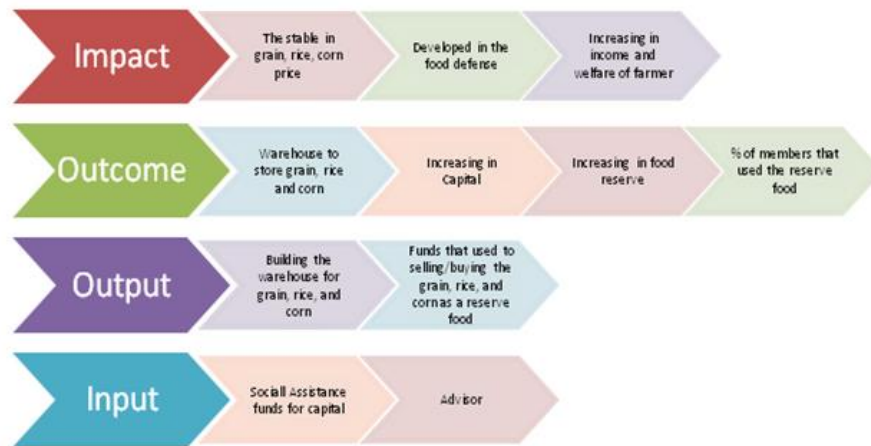


Figure 2. Research Framework

Operational Variable

The description of the variables used and the unit of measurement are the derivatives of the components of the GAPOKTAN empowerment activity. The outcome indicators and the indicators used in the survey are presented in Table 1. Indicators and variables are important in developing the questionnaire, ensuring that the collected data are important and necessary.

Table 1. *Operational Variable*

No	Working Indicator	Operational Variable	Substance of Questionnaire
1	Development of price stability in GAPOKTAN area	The price of grain, rice, and corn at farmer level	<ul style="list-style-type: none"> • Rice price, • Grain price, • Corn price, • Government Purchase Price
2	Increasing food security in farmers' household	Level of food reserves	<ul style="list-style-type: none"> • Number of food reserves • Number of members using food reserves
3	Increasing rural economy resulting from food commodity	The income of farmers' household gained from grain, rice, and corn farm business.	<ul style="list-style-type: none"> • Economic Margin • Income level from farming business
4	Increasing income of the farmers in the GAPOKTAN area.	Income of the farmers' household	<ul style="list-style-type: none"> • The purchasing price of GAPOKTANs should follow at least the minimum Government Purchasing Price • Farmer income level

Data Analysis

In addition to descriptive analysis, trend, SWOT, and ROI analysis were used to develop the data analysis for gaining more accurate results. According

to Sedana (2013), SWOT analysis is a strategic planning method used to formulate alternative policies or strategies to replace the LDPM reinforcement program. For analyzing the financial feasibility, ROI was used to evaluate the incentives that GAPOKTANs gained in running the business after getting additional capital from the LDPM Social Assistance Fund (*Bansos* fund). ROI is calculated by comparing the income of all farmers and GAPOKTAN participants minus *Bansos* fund received by GAPOKTANs, divided by *Bansos* fund received by GAPOKTANs. The economic benefits are also measured by the B/C ratio of GAPOKTANs in conducting their business with the following formula: profit minus cost divided by cost.

Food Security

To support the success of LDPM study, according to Rahmatullaila, Hidayat, & Ismulhadi (2013), food security is one of the priorities in national development characterized by the availability of sufficient food in the macro scale. However, there are still some areas where communities and farmers are unable to access adequate food due to insufficient income to gain access to food. On the other hand, rice and corn farming areas are facing several problems such as limited business capital, lower bargaining position and limited access to a global issue.

On the other hand, Selvina (2014) studying the impact of P-LDPM in Mentaras Village, Dukun Sub-District Gresik mentioned that the problem of food security cannot be separated from 3 (three) main aspects i.e. production, distribution, and consumption. One of the food empowerment programs that is being carried out is the strengthening program of Food Distribution Institution or commonly known as P-LDPM. She also concluded that this program provides capital assistance in the form of social assistance funds (*Bansos*) to the beneficiaries. The funds can be used as the business capital of the business units owned. So, the program of food security has resulted in a good impact.

GAPOKTAN Transmitter is GAPOKTAN that exists in Lampe Sub-District of Rasanae City-Bima where most of its members are farmers and have ever got the LDPM empowerment program, reaching the self-sufficient stage. In order the program to succeed, the norms or rules in LDPM program were institutionalized to the members of GAPOKTAN, so those norms or rules become the parts of life pattern of the people. That study describes how to institutionalize LDPM to the members of GAPOKTAN Transmitter and how the farmers interpret it. The research was conducted by using qualitative descriptive approach. In-depth interviews and observation were conducted with the 30 informants. Based on this research, it is known that LDPM among GAPOKTAN Transmitter members has not been fully institutionalized because the emphasized norms were not fully accepted by the members of the community. This is because they were not in line with the local wisdom of the region.

Dukun Sub-District in Gresik has been implementing the program since 2010. The impacts of this activity are explicitly good. So, it is necessary to prove the extent of the positive impact of the activity. This is the research

background of the impact of P-LDPM in Mentaras Village, Dukun Sub-District (Selvina, 2014).

MATERIALS AND METHODS

This study was conducted by collecting a sample of GAPOKTANs receiving the social assistance funds of the LDPM strengthening program in 2009 and 2010 (self-sufficient phase) from 9 provinces, namely, West Java, Central Java, Yogyakarta, Lampung, North Sumatera, South Kalimantan, West Kalimantan, South Sulawesi, and West Nusa Tenggara. Two districts were selected from each province and from each district, two LDPM GAPOKTANs were randomly selected (total of 72 LDPM GAPOKTANs). From each district, one or two non-LDPM GAPOKTAN were selected as the control groups (total of 13 GAPOKTAN control groups). The interviewed respondents were the leaders of the GAPOKTANs, farmers, and members of technical adviser in the district-level.

Data Analysis Method

Data analysis is the stage to interpret the data obtained. The activities undertaken at this stage include a primary data analysis and information collection. Because there were no baseline data, the GAPOKTAN control was used. Thus, data analysis used is 'with vs. without project' (Suryana, 2013). The analysis will include:

Descriptive analysis. (MOA in <http://panel.hrgabkp.deptan.go.id>)

Descriptive analysis is an analysis by describing the data collected without making a general conclusion or generalization. The activities include data grouping and determination of the values and statistical functions such as average, minimum and maximum value, range, standard deviation, the coefficient of variance and so on. Besides, a presentation such as table, graph, histogram and image included in this category can also be used.

Comparison analysis. (MOA in <http://aplikasi.deptan.go.id>)

This analysis is used to compare the achievements before and after activities. The method used is hypothesis testing for 2 independent populations. The hypotheses tested are:

$$H_0 : \mu_1 - \mu_2 = 0$$

$$H_1 : \mu_1 - \mu_2 \neq 0$$

To compare the performance before and after the activities, the comparison analysis between GAPOKTAN participants and GAPOKTAN control was conducted (with and without project analysis). The method used here is hypothesis testing for two independent populations. The hypothesis tested is:

$$\text{Statistical test } z = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{\sqrt{s_1^2 / n_1 + s_2^2 / n_2}}$$

$$\begin{array}{l} \text{Critical value} \\ z > z_{\alpha / 2} \text{ or} \\ z < -z_{\alpha / 2} \end{array}$$

Trend analysis. (Sedana, 2013).

It is a statistical analysis intended to make an estimation or a forecast for the future. In this study, because the period of data collection was not enough, the trend analysis was only used to illustrate the progress of the achievements of each GAPOKTAN.

Financial feasibility analysis (Prasad, 2013)

Financial feasibility analysis is often used for assessing the activities of the production and it can be represented by the return on investment in the following formula:

$$\text{ROI} = \frac{\text{Gain from Investment} - \text{Cost of Investment}}{\text{Cost of Investment}}$$

The Relationship between the Evaluation Objective, Framework Analysis, and Unit Analysis

For the preparation of the questionnaire, the checklists were prepared. These include evaluation objective, framework analysis, unit analysis, data type and data collection as shown in Table 2.

Table 2. *Evaluation Objective, Framework Analysis, Unit Analysis, Data Types and Data Collection*

Evaluation objective	Framework Analysis	Unit Analysis	Data Type and Data Collection
1. To identify the impact of LDPM on a, b, c, d			✓ Primary and Secondary data from http://aplikasi.deptan.go.id/smspl/dpm
a. Economic condition (increasing margin and income)	1. Descriptive Analysis 2. B/C ratio Analysis 3. ROI and NPV	GAPOKTAN	✓ Quantitative financial data (secondary) of GAPOKTAN, from check list ✓ Primary Data from interview with GAPOKTAN
b. Social condition	1. Trend Analysis	GAPOKTAN	✓ Primary data from interview with GAPOKTAN
c. The functional phase of Institution: • Bansos fund development • Food procurement • Food reserves and distribution • Role of facilities	1. ROI Analysis 2. Trend Analysis 3. B/C ratio analysis	GAPOKTAN	✓ Primary and Secondary Data (qualitative and quantitative) from GAPOKTAN committee and informants ✓ Secondary Data from GAPOKTAN

1.	Does the LPDM program need to be continued? Exit Strategy?	1. Trend analysis 2. B/C ratio analysis	GAPOKTAN	✓ ✓	Secondary Data Primary Data
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RESULTS AND DISCUSSIONS

Formation of the distribution unit and reserve unit

There is an increase in the units of GAPOKTAN in terms of distribution, processing, and marketing by 59.8% for rice and 67.3% for corn. There is also an increase in food reserves indicating that the groups have conducted the activities as mandated by the General Guidelines for LDPM Strengthening program. These increases are of course followed by the increase in the number of the leader of the business unit which is 52.3% of Distribution Unit and 56.8% of the Reserve Unit.

Building Food Reserves Warehouse

The social assistance funds received by the entire groups (100%) have been utilized to build a warehouse. This is in accordance with the rules listed in the General Guidelines. Approximately, 63.3% of reserve warehouses were built on the land owned by the GAPOKTANs, 24.5% on the grant land, 2% on the land belongs to the members, and 10.2% on the land with notary deeds. Although there are many options for purchasing grain, rice, and corn, around 60% of GAPOKTANs prioritize the permanent members and 20% is for the non-permanent members. This is the rule. GAPOKTANs have implemented food stock program with grain, rice, and corn to fill the warehouse. Some food stocks are sold at a decent price and some are kept as reserves. GAPOKTANs distribute 40% of the grains for sale and another 60% for further processing or backup. This condition is an economic opportunity to select more than one distribution or sales. If the stock cannot be distributed to one place, it could be channeled to other places.

Buying paddy/rice at Government Purchase Price

As expected by the LDPM GAPOKTANs, the average purchase prices of grain (IDR 3,848) and rice (IDR 6,804) are above the Government Purchase Price (grain: IDR 3,300, rice: IDR 6,600). Besides, the purchase price for the members is higher than for non-members. The average selling price of grain is IDR 4,158 and rice is IDR 7,357. These are above the Government Purchase Price. In addition, the average selling price of rice is lower for the members, than to non-members. GAPOKTANs buy maize from various places. One GAPOKTAN could buy from 2 or 3 places depending on the needs and economic consideration. GAPOKTANs in several places buy corn of 46.33% from the active members, 24.5% from the non-member farmers in the same village, and 20% from farmers outside the village.

Price Stability

Nationwide, the LDPM strengthening program has successfully raised and maintained the price stability of grain and rice, especially when the price fell in

the harvest season. Figure 2 shows that nationally, during the year 2012, the price of Dried Grain Harvest (DGH) at the members of GAPOKTANs receiving the social assistance from LDPM was always above the GPP and in general tended to be higher than the average price of DGH's farmers. When the DGH price at farm level fell below the GPP in the harvest season (March-May 2012), the members of GAPOKTANs still got the price above GPP. The same way for the price of paddy at the mill and the price of rice at the grinding in national level. It turns out that this condition is found in almost all the provinces and districts.

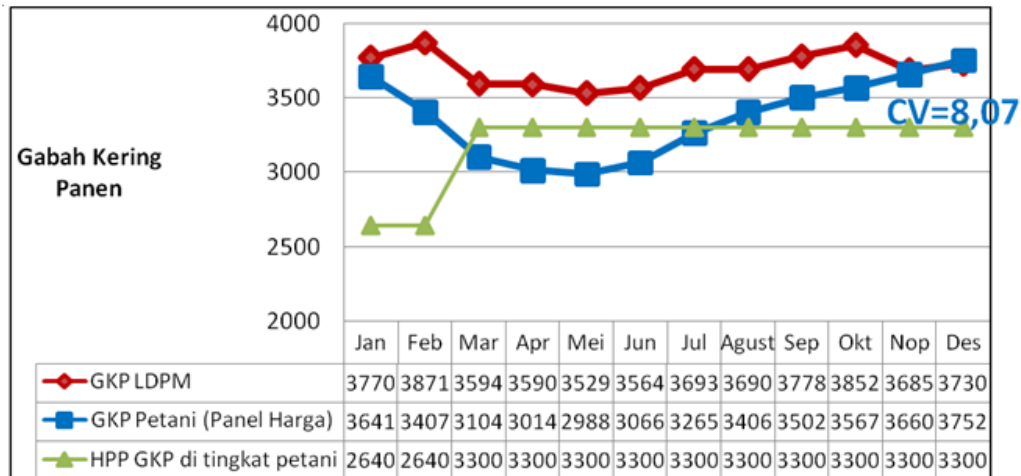


Figure 3. DGH price trend.

From this survey, it was shown that the average ending balance of LDPM social assistance funds reached IDR 83 million in cash and IDR 34 million in bank accounts. This balance sheet is a key indicator that GAPOKTAN participants in the LDPM Strengthening program are still going well. During the project period of 4 years, GAPOKTANs gained as much as IDR 46.7 million or IDR 11.7 million per year (6.74%). Indeed, this figure is below 8% of the annual interest bank. But we need to keep in mind that there are other benefits that have not been taken into account, i.e. the increase in tangible assets and intangible assets.

Economic Benefits

Grain processing facility has a great effect on the economic benefit because it is associated with a cost, both drying and milling and it relates to the quality of the rice produced. The limited drying floor forces farmers to rent a dryer and own rice milling unit (RMU). Compared with non-LDPM GAPOKTANs, the assets of LDPM GAPOKTANs are better, except in the ownership of the dryer and tractor. Having better business assets is good, but it should be supported by the LDPM GAPOKTAN strengthening program so that the farmers will have more professional businesses. By using the average price of members and non-members as well as the conversion of GAPOKTAN grain rice to 56% (including the cost of processing), the business of selling rice makes a profit of IDR 242/kg. If they have to rent a means of processing (drying and milling),

they should pay an additional fee so the profit will be reduced. It is therefore quite reasonable if GAPOKTAN expects to have its own RMU which can be purchased by using funding from non-members or other funding sources (banks). The increasing number of permanent members (18%) indicates that the interest of farmers to become the members of GAPOKTAN receiving LDPM Strengthening program increases while decreasing the number of non-permanent members (38%) shows a displacement of a membership status from irregular to regular. This condition indicates that the presence of the GAPOKTAN LDPM strengthening program has attracted the interest of farmers to become permanent members because the program provides benefits to the members. The disclosure of financial management is measured by the level of knowledge of participants about the LDPM Strengthening program for the GAPOKTAN members. It is shown that; (i) 92.6% of members know they can receive social assistance funds from GAPOKTANs; (ii) 94.44% of members determine the use of social assistance funds; and (iii) only 62.70% to 33.33% members only know the cash balance of GAPOKTANs while the remaining farmers did not answer. This condition indicates that the transparency of social assistance and the use of funds are good. The cash balance of GAPOKTANs is fair enough and there is still room for improvement.

Prosperity

Before receiving the social assistance funds, most members of LDPM GAPOKTAN (45.5%) shared the gain or profit (SHU), but after participating in LDPM strengthening activities, most of them (43.3%) utilized the gain to increase the business capital. Members believe and realize that adding capital will boost their revenue, and enhance the performance of GAPOKTAN as a provider of food reserves and the 'guard' of price stability. Thus, the price is always above GPP, especially in the harvest time. Togetherness and care of the community are rooted in local wisdom which is able to glue the fraternity to be prosperous. A total of 82.5% of respondents stated that the LDPM Strengthening program is helpful. It is also shown that 75% of respondents stated that the LDPM strengthening program needs to be continued, while only 1.47% of the respondents stated that this program needs to be discontinued. It turns out that the principle of benefit for the GAPOKTAN members is not only the economic benefits, but also the social benefits as indicated by the "can establish a relationship". Indeed, the role of social capital in the process of farmer empowerment cannot be considered trivial. Sometimes, this even determines success. In general, the members of LDPM GAPOKTAN never borrowed money from the group (48.39%), only 11.29% of them did. They believe that this money is GAPOKTAN's capital for agricultural activities so it should be used wisely. This also happens in borrowing grain because the farmers are still able to meet their own needs. Only a few farmers got the loan of paddy/rice and corn. There is no interest in the loan.

According to Selvina (2014), the food consumption of Bima society itself has started to improve where the current food expectation pattern has reached the diversity of 7.41. In the last three years, rice consumption dropped from 119

kg/capita in 2012 to 114 kg/capita in 2014. But in terms of diversity of consumption is still less because consumption of rice and wheat is still dominant. The food security level is quite good as there is always regular monitoring conducted.

The GAPOKTAN chairman of Keramat Wenggo, H.M Nor H. Abbas said that the rice production of its members could reach more than 8 tons per hectare. This GAPOKTAN, with 500 members and 75 hectares of land, can only absorb 75 percent of the grain from its members which will be processed as rice then sold to the rice stalls. With the aid of IDR 200 million from the government, they built a warehouse and spent IDR 35 million. The rest of the money was spent to buy grain from the members. However, the fund has resulted in a profit of IDR 11 million. *“If all the harvested grain of our members should be absorbed by GAPOKTAN, it needs about IDR 400 million”*, he said.

Priyadi and Desiana (2017) revealed fascinating facts about how working capital drives profitability and growth of the SMEs. Regarding the implementation of the food security program, in addition to the LDPM program, Bima city also has Desa Mapan (self-supporting food) and Sustainable Food House (KRPL) programs. According to Darwis, the LDPM and community food barn have been able to accommodate the harvested grain and distribute it to the society in the time of scarcity.

CONCLUSIONS

Since the food security is one of the pillars of national development, the government approach such as LDPM strengthening program is very motivating for the GAPOKTANs in the rice and corn production centers to develop their agribusinesses. Farmers no longer sell their paddy/rice or corn to the middlemen, but they have started to join GAPOKTAN to sell their farming products in groups. The less optimal profit of GAPOKTANs in the rice and corn production centers is caused by the limited processing infrastructure they have such as harvesting equipment, dryers, drying floors, and rice or corn mill. Thus, they have to rent the equipment. In addition, another limitation of the GAPOKTANs is the lack of entrepreneurship skill among its human resources to run the business units, develop marketing networks, and develop the venture capital. If the infrastructure, entrepreneurial capability, and marketing, networking are improved, GAPOKTANs will be able to get more profit.

LDPM strengthening activities have been able to encourage GAPOKTANs to develop their business and increase added value at the downstream as a food business (storage, processing, and packing). So, GAPOKTANs do not only do the upstream activities as the producer. Although the entrepreneurship activities are not yet sufficient, the development indicates an economic embryo of the food business institution. In the future, if GAPOKTANs are already self-sufficient and become the asset of the provincial and municipal government, they will need to be provided intensive guidance so their assets (capital and equipment) will be well maintained. In addition, they will not become a no-man asset to be utilized only by GAPOKTANs' board.

Meanwhile, the social impacts of the implementation of LDPM strengthening activities increase the interest of farmers to do food business, improve the

culture of transparency in the financial management, and foster awareness and togetherness among fellow members and rural communities.

The management and coaching strategies to be undertaken are adjusted to the condition and status of the GAPOKTANs according to their success rate.

Based on the monitoring results conducted in nine provinces, the impact evaluation shows that the performances of most of the executive groups of LDPM union strengthening activities are good enough in their implementation. These are in accordance with the conditions set in the General Guidelines, and Technical Guidelines for LDPM Strengthening Activity issued by the Food Security Agency, Ministry of Agriculture.

LDPM strengthening activities launched by the government in 2009 have positive impacts, namely; (i) changing the management of GAPOKTANs (distribution, marketing, processing, and management of food reserves) especially in terms of planning activities in the beginning of the year; (ii) conducting the bookkeeping on the use of funds, (iii) making the reporting of regular activities (e.g. sending SMS to the center); (iv) changing the mindset of GAPOKTANs where the members began to have regular meeting to discuss plans for future business development, plans to create GAPOKTAN association in the area in order to develop distribution and marketing, and plans to raise capital; and (v) performing internal control of the financial aspect (financial management becomes transparent because it is managed step by step and the treasurer is helped by person-in-charge in each business unit of GAPOKTAN).

LDPM strengthening activities launched by the government in 2013 have shown positive impacts on the monitoring locations in nine provinces where GAPOKTANs in rice production centers are able to play a role in dealing with the plummeting price of the commodities during the harvest time. The farmers got a better price as they sold the commodities to the business unit of GAPOKTANs with a higher price than if sold to middlemen or moneylenders. Thereby, LDPM strengthening activities have been able to give a positive impact on the rural economy, especially on setting the price stability of grain, rice, and corn at the farm level. If the price of commodities falls in the harvest time, GAPOKTANs in 9 provinces were monitored to raise the buying price at an appropriate Government Purchase Price (GPP). In addition, the GAPOKTANs improve the bargaining position of farmers because the members have the option to sell to middlemen or to GAPOKTAN business units. This is helpful especially when the price of grain on the market fell.

Recommendation

The LDPM strengthening activities designed by the government may proceed to empower GAPOKTANs to the food-based businesses with some improvements or modifications as follows:

a) Flexibility in the use of social assistance funds after the reaching 'self-sufficient phase' so the GAPOKTANs can utilize these funds not only for rice and corn business, but for other businesses (development of crops, livestock, sale, and purchase of inputs, savings and loans, etc.). Sure, this must be done

without reducing the core businesses, i.e. maintaining price stability the ensuring the availability of food reserves in GAPOKTAN level;

b) Working within and cross-sector of the agricultural sector to develop GAPOKTANs as a food-based economy in rural areas by providing support facilities or infrastructure, strengthening stewardship of GAPOKTAN management, and strengthening upstream-downstream business units (seeds, fertilizers, savings and loans, selling, processing, etc.). These will be able to push and improve the of GAPOKTAN's productivity, effectiveness, and product quality. Thus, they are able to open up employment opportunities for the rural youths;

c) GAPOKTANs should be selected selectively so they will be well managed and sustainable. Coaching for beginner GAPOKTANs should be done optimally so that they know and are able to mobilize their members to gather and manage food-based activities, ranging from upstream to downstream. Thus, this collective efforts will result in economies of scale. GAPOKTAN strengthening activities should be done early before the program goes into government's GAPOKTAN. Trainings shall be provided to GAPOKTANs, namely: (i) how to develop plans, accounting, good and right reporting; (ii) how to develop the business in accordance with market demand; (iii) how to be independent entrepreneurs; (iv) how to develop partnerships with business actors; and (v) how to improve access to capital resources (local government, state / local enterprises, CSR, banking, etc.).

Because the LDPM program as outlined in the study is considered successful, according to BKP (2018), this program will be extended. The target and the realization of the program from 2013 until 2017 are as follows:

Table 3. *Target and Realization of LDPM 2013 - 2017*

Year	Growth Phase			Development Phase		
	Allocation (target)	Realization	%	Allocation (target)	Realization	%
2013	75	74	98.67	281	210	74.73
2014	38	38	100.00	117	102	87.18
2015	203	203	100.00	38	36	94.74
2016	100	98	98	203	189	93.10
2017	-	-		98	95	96.94
Total	416	413	99.28	737	632	85.75

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