

## FOOD BARN FOR THE VILLAGE COMMUNITY TO STRENGTHEN COMMUNITY EMPOWERMENT PROGRAM

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Received: June 2015; Accepted: December 2016

### Abstract

*This study aimed to assess the achievement level of community empowerment in realizing food security. The result was expected to reveal a model of community empowerment, particularly farmer community institution as an attempt to attain food security. Survey was employed as the research method that involved the farmers (farmer groups) as the members of Food Barn for the Village Community (**Lambung Pangan Masyarakat Desa/LPMD**). Technique of rapid rural appraisal was selected in the form of quantitative and qualitative analysis. Preliminary survey in study area was carried out to obtain the characteristic and status of food security; and to mapping the potential and role of **Lambung Pangan Masyarakat Desa** in the process of community empowerment. Subsequently, study and analysis was done based on the survey. **The results demonstrated the active role of stakeholders (A-B-G-C) was significant in supporting the farmer institution (food barn). The economic and social aspects were also evidenced to have important role in enhancing the farmer community empowerment. This model is called social engine for rural community and local institution, particularly to attain the regional food security.***

**Keywords:** Food security, community empowerment, village institution, social aspect, economic aspect.

**JEL Classification:** Q180, M021

### 1. Introduction

Food security development can be realized through numbers of efforts in order to improve the economic growth and to support the poverty alleviation program. One of the efforts is the program of food self-sufficiency (Syahyuti, 2015) based on the concept of food sovereignty as set forth in Law No. 18/2012 on Food (Rachmat, 2015). It is a follow-up of the Indonesian Government's commitment to actualize the food resilience program as stated in Law No. 7/1996 on Food and Government Regulation No. 68/2002 on Food Security, in which food security is as a food-sufficient condition for households indicated by the availability of adequate food in

terms of quantity, quality, security, equality, and affordability (Ariani, 2007).

The achievement of food security development, for instance the increased production of food commodities, is infrequently accompanied by the prevention to address the food insecurity among the community. In fact, the population enduring food insecurity is quite high and the number is increasing. Nevertheless, the level of food insecurity in population is a main indicator in food security program. Food availability at the macro level is not necessarily capable to address the issue of food insecurity, particularly at regional level (Ariani, 2007). However, there are several factors behind the

prevalence of food insecurity. Despite its link to the access on food, food availability is also affected by food distribution, food affordability, dietary behavior, and nutrition knowledge (Food Security Agency/*Badan Ketahanan Pangan*).

Approximately 60% of population of Indonesia lives in rural areas, especially in Java with agricultural activities as their major livelihood. Despite of the on-going declined role of agricultural sector, this sector has the largest contribution to the national economy. It suggests the strategy of social welfare improvement should be effectively and explicitly targeted to the population in rural areas, particularly due to their high determined social capital (Pranadji, 2006). One of the strategic issues of agricultural development that upholds the welfare improvement policy is the socio-cultural empowerment that encloses community involvement, particularly the participation of rural communities. Hence, an assessment of suitable and effective community empowerment model to realize agricultural development especially in rural areas is required (Pranadji, 2004). This sort of empowerment should be a model that enables and encourages the self-sufficiency of a community (Sutikno *et al*, 2010).

Food barn is common in traditional community in which it serves as food reserve for the village community during the lean season. It is essential for the rural areas where most of the communities rely on rain-fed agriculture and agricultural land, which only produce optimally in the rainy season. Thus, the existence of barns is expected to maintain the food security of community, despite of their small-scale provision. The government, in this case, through the Ministry of Home Affairs and the Regional Autonomy No. 6/2001 issued the Food Barn for the Village Community (*Lumbung Pangan Masyarakat Desa/LPMD*) as an institution established and managed by the village community that serves to distribute, manage, and trade the foods.

Food security is not merely an issue of production, but also the investment managements of non-food and non-agriculture as the elements of

food security. In the development of food security, one of important aspects is the food availability in sufficient quantity and types as well as the presence of institutional system in the community regarding with the food management. Food availability is thrived by augmenting the national production capacity, improving food reserve management, and promoting food distribution to omit the regional gap in association with the production and demand. Food reserves can be advanced by the government (The Bureau of Logistics/*Bulog*) and the community (food barn). It is a vital issue among the rural communities to maintain food security and to avert food insecurity at the household level.

Food barn as a community institutional food reserve has significant role in addressing food insecurity at community level. However, this sort of traditional institution is marginalized by the development dynamics, among others, the authority of *Bulog* to retain national food stabilization and to prevent food insecurity. Nevertheless, in the last decade, the role of *Bulog* seems to decline incessantly since it transforms into a General Enterprise/ *Perum*. As a consequence, food barn turns into a solution due to the fact there are numbers of food insecurity cases in several regions, despite Indonesia has been stated as self-sufficient state. This study revealed the extent of food barn's role as community institutional food reserves in addressing the food insecurity issue.

Wonogiri district is a rural area where high number of labor is available, particularly to engage in agricultural sector. However, most of the population preferred to "migrate" to other regions and overseas, as they expect to gain higher earning rather than 'merely' cultivate farmlands.

As the focus of this study, it was presumed that the lacks of community empowerment and farmer institutional role were the main causes of the declined agricultural productivity. In the context of this study, the 'low' level of community empowerment as manifested in farmer institutions, particularly the **Food Barn**

**for the Village Community (LPMD)** to attain the food security, was the focus of the subsequent discussion.

Among the farmer communities, the position and function of farmer institution as a component of social institution is to facilitate social interplay in a community. The concept of institution was recognized solely on the organization aspect, both formal and informal organizations. In the context of agricultural institutions, the term of "local" is identified as something with peculiar characteristics related to local circumstance. It covers the basics to commit collective actions, energy for consensus, and coordination for task responsibility, as well as to collect, analyze, and review information. Those basics do not occur automatically, but require the presence of specific regional-based institution (Suradisastra, 2008).

There are four institutional components to construct the concept of participatory development, which are: 1) person, 2) interest, 3) regulation, 4) structure (Hadi, 2009).

## **2. Research Methods**

Samples in this study were: (1) the members of farmer groups, (2) the heads of farmer groups, and (3) the community figures. They were obtained from multi-stage sampling method of cluster and stratified sampling. The cluster was the geographic distribution of respondents' sub-district. The stratified element was based on respondents' group (TK, TK candidate, key-persons). Respondents can be specified as follows: (1) migrants, including the migrants or migrant families, n= 20; (2) key-persons from community figures/leaders in each respective study area, n= 20; and (3) key-persons from relevant agencies, n = 10.

The approaches used for data collection in this study were interviews, observation, documentation, focus group discussion (FGD), and participant observation.

There were three analytical tools employed in this study including:

1. **Quantitative Analysis: Descriptive statistics**  
The approach applied in this research was the analysis of respondents' perception as implemented previously by Sumastuti (2015) and Farhanah (2015), with several modifications. This analysis is a study of phenomenon based on the respondents' opinions or perceptions as the actors. Those perceptions were measured by using the Analytic Hierarchy Process (AHP). It is a multiple criteria decision-making tool that has been used in almost all the applications related with decision-making (Vaidya, Omkarprasad S, and Kumar, Sushil, 2006).
2. **Qualitative Analysis**  
In-depth interview and participant observations (Syahza, 2013) can provide a more comprehensive and specific information on the respondents' profile or character. Qualitative analysis has been massively recommended by anthropologists or sociologists to profoundly explore an individual's character towards the observed particular values.
3. **Model Development Analysis**  
Brainstorming and discussion with the stakeholders will be used as a media to formulate a model (management and/or assistance) or a model developed in this study.

## **2. Results and Discussion**

### **2.1. Map of Food Security Status Based on Food Availability Aspect**

The status of food availability at the immigrant enclave in Wonogiri district based on study and evaluation of Food Security Agency was secure. The rice production of Baturetno district in Wonogiri dalam Angka (2011) was amounted to 8.058, corn was 11.272, cassava was 5.973, and thus, the total production was 25.303. Net production was 1.219 in a year and yielded the consumption ratio of 0.25. Basically, the food security based on the aspect of food availability in Baturetno district was declared high surplus.

Table 1. Status of Food Security at the Immigrant Enclave

No	District	Rice 2010-10	Corn 2010-10	Cassava 2010-10	Total production	Population	Net production	Consumption ratio	R_AV	IAV
1	Baturetno	8.058	11.272	5.973	25.303	56.861	1.219	0,25	High surplus	0,76
3	Wonogiri	5.662	9.969	19.626	35.257	93.511	1.033	0,29	High surplus	0,93

Source: Data analysis.

## 2.2. The Role and Contribution of *Lumbung Pangan Masyarakat Desa* in Community Empowerment Process

The phenomenon of migrant as observed at the immigrant enclave in Wonogiri showed a declined trend. The particular characteristic of migrant farmer families was the member's mean age was 46 year-old, the oldest was 58 year-old, and the youngest was 30 year-old. In addition, the lowest educational background of the respondents was junior high school and the highest was university.

Another characteristic was the major livelihoods of the migrants comprising of farmer, trader, employee, and entrepreneur. Migration (*boor*) to other areas was carried out with economy as the main motivation, which was to earn capital. Generally, after obtaining sufficient capital, they will return to their hometown instead of settling in their new places. The migration level of families in the study area was relatively low meaning the opportunity for an institutional empowerment is quite considerable.

Institutional empowerment on the samples was carried out on Gapoktan, LPMD, Institute of Public Food Distribution (LDPM), Farmers Groups, Government at Village level, Agricultural Agency and Food Security Agency.

Gapoktan, LPMD, LDPM, and Farmer Groups are established to assist the farmers to increase their productions. Gapoktan is set up to obtain capital assistance for the farmers. LPMD is established to help the farmers to accommodate their agricultural products.

Institutions under the Agricultural Agency and institutions under the Food Security Agency are interrelated in order to improve the welfare of the farmers. The Agricultural Agency supports the welfare of the farmers by providing farming technical assistance,

while agency Food Security supports them by attaining the community food security.

The Agricultural Agency as a government agency has made efforts by employing Agricultural Extension Officers in the field to provide education about farming techniques to maximize agricultural production. One of farming techniques that was disseminated among the farmers was "*Jejer Legowo*". It is a technique of planting rice with 20-20, 40 of row spacing. By adopting this technique, it was expected the farmers could maximize the land utilization and obtain higher yield. The principle of this system is to increase the population of rice by adjusting the spacing where the rows are interspersed by an empty row and the spacing of the rows at the edge is a half of the spacing between the rows.

"*Jejer legowo*" is also a strategy to manipulate the planting site, hence, there will be higher number of plants on the edges with more empty rows. Crops planted alongside the field were evidenced to grow and thrive better in compared to those at the middle rows, as the consequence, they provided higher amount of yield and higher quality of rice. It was due to the plants at the edge rows gained higher light intensity. The implementation of this system will provide optimum yield by focusing on the row direction and the sun light direction. The rows are arranged facing toward the sunrise so that the entire rows at the edge can obtain optimum solar radiation. Therefore, the entire rows of the plants particularly those that are blocked by the row will be exposed to the Sun.

Farming technique assistance carried out by Agricultural Extension Officers based on interviews had positive result on production. Program initiated by Agriculture Service by organizing technical training for farmers through the Empowerment of farmers groups joined in Gapoktan and other farmer community association, had inspired the farmers to manage their land.

Food Security Agency performed institutional empowerment via the development of LPMD. It was done through LPMD to facilitate and solve the problem faced by the farmers in the pre-cultivation to the post-harvesting period.

The results of FGD revealed that empowerment should be conducted through the community figures/leaders to take charge of the institution, thus, they will encourage and motivate the farmers to optimally utilize the land, to communicate the innovation in farming techniques and the diversification of crops on the land, to train farmers related to land preparation with the treatment of semi-organic fertilizer (microbe), and to organize agricultural institution meeting in regular basis.

The role of leading figures who keenly encourages and mobilizes the members of LPMD to actively participate in agricultural sector was also essential. One of the prominent leaders in the institutional empowerment by optimizing LPMD in Baturetno district is Bapak Kukuh. He provides stimulant for problem-solving for the farmers who face obstacles in the production process. For instance, he provided facility required by the farmers, but instead of giving the farmers the financial assistance, he realizes it in the form of materials and equipments. Subsequently, the farmers will return the expenditure when they can afford it or after harvesting period. Actually, Bapak Kukuh was not born in Baturetno, but a migrant from Solo. Nevertheless, he has motivation to empower the local community by optimizing the agricultural production through institution

in order to enhance the potential of Baturetno as agricultural area. He expects that by the increased production, it will diminish the community's desire to migrate to other area and to uphold the achievement of food security in Baturetno district.

Another central figure is Bapak Sutarman who was the head of Neighborhood Association (*Rukun Tetangga/RT*). Bapak Sutarman was the Head of LPMD that was located at farmer group village in Kedungrejo village, Baturetno district. His role in institutional empowerment is by promoting the implementation of *Jejer Legowo* to the members of LPMD, in which he applied the technique on his farmland by himself to demonstrate the result. In addition, Bapak Sutarman explicated the benefits of the technique based on his experiences, in which the rice production was higher. His main motivation to empower the members of LPMD is to improve the welfare of the local community. In addition to promote *Jejer Legowo* technique, Bapak Sutarman also persuaded the local community to utilize greenbelt area in adjacent to Waduk Gajah Mungkur when the water recedes. As the result, greenbelt becomes an area where the local community can utilize for agricultural production.

Assessment of the immigrant enclave characteristics to support the institutional community empowerment was confirmed quantitatively by using conventional scale questionnaire. Based on the analysis, the characteristics of institutional-based empowerment level in the immigrant enclave was determined.

Table 2. Community Empowerment Level at Immigrant Enclave

No.	District	Indicator of institutional-based community empowerment	Score (1-10)	Empowerment level
		The access of information, capital, and marketing		
		The presence of farmer groups		
1	Wonogiri	The role of local leaders and stakeholders	23	Low
		Training and Assistance		
		Farmer participation		



No.	District	Indicator of institutional-based community empowerment	Score (1-10)	Empowerment level
		The access of information, capital, and marketing		
		The presence of farmer groups		
2	Baturetno	The role of local leaders and stakeholders	38	High
		Training and Assistance		
		Farmer participation		

### 2.3. Community Empowerment Model of Food Barn for the Village Community (LPMD) to Realize Food Security

Strategy was built based on the confirmation as derived from in-depth interview and FGD. Concerning with the strategy of farmer institutional empowerment, Haryadi as the officer of Food Security emphasized on the potential of leading figure to promote and mobilize this sort of empowerment. It means that leadership is the power engine in the effort of institutional empowerment. It was reaffirmed by Agricultural Extension Officers in Wonogiri district, Bapak Riyanto (45 year-old) asserted that the farmers in rural areas was still engaged on traditional methods, which had been practiced for decades. It was relatively difficult to change those methods. Thus, Agricultural Extension Officers initiated an approach by involving the active role of community leaders/figures. It was assumed as a solution to guide the farmers toward optimal agricultural production, and to empower the prevailing farmer institution. Bapak Kukuh affirmed the hindrance when he persuaded the community figures to participate in the farmer institutional empowerment.

Bapak Kuku added that to change a custom that has been embedded in a community is complicated. The approach used to stir an institution was to encourage the active role of community figures. Nevertheless, this approach might not be optimal, hence, training and assistance are also required. In this case, the role of Bapak Sutarman who proved the advantage of *jejer legowo* by implementing and demonstrating his higher yield of harvesting was considerable. It was similar with the experience of Bapak Kukuh.

Bapak Sutarman and Bapak Kukuh were the executive board of LPDM in Gambiranom village, Baturetno district. However, they had different experiences. Bapak Sutarman played his role in LPDM in association with the agricultural technique, while Bapak Kukuh was responsible in advocating the farmers to maximize the land utilization ranging from the cultivation to the distribution of agricultural products.

The findings of in-depth interview were reinforced by the results of FGD that emphasized the role of community figures in this model of empowerment. FGD discussed the efforts to empower the farmer institution. In this forum, there was an argument about the role of community figures as the power engine in farmer institution. The main reason was despite the numbers of community figures/leaders, people did not necessarily follow the promoted program. The dispute was examined comprehensively and subsequently, it could be summarized that community figures as the initiator for the empowerment model was a suitable start, by considering the figures' discipline and authority to encourage the members toward a better life.

Empowerment process requires the community figures to hearten and motivate the farmers. In addition, stakeholders, academics, and industries play an important role in supporting the changes during the empowerment process, particularly related with the agricultural development. This study found out the immigrant enclave with relatively low empowerment level was Wonogiri district, while the higher level was obtained by Baturetno district. Based on this status, this study suggested the need for strengthening the farmer institutional

empowerment with two scenarios, which refer to the institutional components and indicators.

**First scenario**, Farmer institution with high empowerment level. The condition is based on the attainment of the prevailing institutional indicator component. The recommended development for this sort of farmer institution is Empowerment Model with Assistance. This model is commenced when the farmer groups encounter difficulties with their production. Therefore, assistance with stakeholders (academics, government represented by Food Security Agency and BUMN Bulog, farmer groups) should address the issue of agricultural products distribution. Furthermore, this model yields the achievement of the legality of the agricultural product supply to Bulog, with standards set up by Bulog.

Endeavors to enhance the agricultural production through community institutional empowerment are expected to shift the availability of agricultural products that are provided and supplied by the farmers. The shift will affect on the price changes of agricultural products. These price changes needs the government's contribution to determine a policy concerning with price incentive that positions the government as "middlemen". Theoretically, it is intended to anticipate the farmers' decision to distribute their products to the middlemen. Government's active participation can also be actualized through the prevailing farmer institutions (Gapoktan, LPMD, and LDPM). Moreover, the government via the relevant agencies has to mediate the management of agricultural production by farmers of those farmer institutions into Territorial-owned enterprises (BUMD).

**Second scenario**, farmer institutions with low empowerment level. The status was in accordance with the accomplishment of the prevailing institutional indicator components. The development of farmer institution should be done by Empowerment Model with Standardization and Training. This model was carried out by organizing training and farming skills development for standardization such as land

preparation in prior to the treatment of organic fertilizer. Both the members and the executive board should be motivated and trained by Food Security Agency and stakeholders (academic and private) during the land preparation and the semi-organic fertilizer treatment of microbe, and by organizing regular meeting. The results of this scenario are to improve the quality of agricultural production to meet the standards of Bulog.

#### 2.4. The Economic and Non-Economic Aspects

Active role of Food Barn for the Village Community from the economic aspects included: the additional capital for farmers, the additional agricultural equipments, and the area for agricultural sector, the availability of labor, the addition seeds stock, and sufficient irrigation. Those aspects were derived from FGD that involved the executive boards of Gapoktan, LPMD, LPDM, Agricultural Agency of Wonogiri district and Food Security Agency of Wonogiri district. The economic aspects in the development of community empowerment through active role of food barn for the village community are as follows:

- a. Economic aspects
  - The addition of capital
  - The addition of agricultural equipments
  - Area for agriculture
  - Labors
  - The addition of seeds stock
  - Sufficient irrigation

Based on the analysis of the six economic aspects, the aspects that had the most dominant role were the aspect of the addition of agricultural equipments and the addition of agricultural seeds stock. The farmers in immigrant enclave had attempted to obtain the extra of those aspects. Another significant aspect was the capital.

Assessed from the non-economic aspects, there were 17 aspects that were classified into the religious, social, cultural, and educational aspects

in supporting the development of community empowerment through active participation of village community food barn. The aspects are briefly described as follows:

- a. Religious aspect
  - Worship motivation
  - Obligation
  - Mandate
  - Good relationship with others
  - Time discipline
  - Honesty
- b. Social aspect
  - Good relationship with others
  - Politeness
  - Mutual cooperation spirit
- c. Cultural aspect
  - Religious tolerance
  - Harvest festival /communal feast
  - Mutual cooperation spirit
- d. Educational aspect
  - Graduate
  - Interest for formal education
  - Literacy
  - Financial management
  - Marketing technique

Based on the result of AHP analysis, worship motivation was the most prominent non-economic aspect that supported the development of community empowerment through active participation in village community food barn. The aspects of fulfilling the mandate and to strengthen the relationship with surroundings were the non-economic aspects in this model of empowerment. In overall, there was the hierarchy of the non-economic aspects that support the development of community empowerment through community's active participation in food barn

The economic aspect having an important role in strengthening community empowerment through the active participation of Food Barn

for the Village Community included the addition of agricultural equipments and the addition of agricultural seed stock. Farmers in migrant enclave had strived to gain extra tools and seeds. Another significant aspect was the additional capital. Furthermore, worship motivation became the most dominant non-economic aspect that encouraged the members' active participation in the food barn for the Village community. Similarly, the responsibility to uphold the mandate (*amanah*) and to make good relationship with acquaintances (*silaturahmi*) was other non-economic aspects that strengthened this model of community empowerment.

The farmer community at the migrant enclave expected the active role of food barn for the Village community to enhance the numbers of agricultural equipments and the addition stock of seeds. The two aspect of the food barn's role were the most urgent requirements for the farmers during the farmland preparation. They utilized the facility of village community food barn, which was to obtain the addition of agricultural equipments and the seed stock. Food barn becomes one kind of supports for the farmers in an urgent condition. It is due to the Food Barn for the Village Community (LPMD) is managed of, for, and by the farmers.

### 3. Conclusion

The farmers' participation based on local needs and the local leaders' active role that are synergized in the form of rural community collective barn was evidenced to enrich the model of community empowerment. In addition, this model becomes a sort of self-determination for rural community and local institutions, particularly to attain the community food resilience.

The economic aspects having important role in strengthening the community empowerment included the additional provision of agricultural equipments and seeds stock. However, farmers in immigrant enclave had attempted to obtain those extra provisions. In addition, capital was also a crucial aspect. Meanwhile, worship became



the most dominant non-economic aspect that encouraged the community's active participation in the food barn for the village community. Similarly, the responsibilities to uphold the mandate (*amanah*) and to make good relationship with acquaintances (*silaturahmi*) were other non-economic aspects that strengthened this model of community empowerment.

#### 4. References

- Ariani, Mewa. 2007. Penguatan Ketahanan Pangan Daerah untuk Mendukung Ketahanan Pangan Nasional. (*Journal*) Pusat Analisis Sosial Ekonomi (PSE) dan Kebijakan Pertanian, Monograph Series No. 26. Tahun 2007.
- [www.pse.litbang.deptan.go.id/ind/pdf/files/Mono26/3/](http://www.pse.litbang.deptan.go.id/ind/pdf/files/Mono26/3/). Accessed on October 9, 2011.
- Badan Ketahanan Pangan. Laporan Kinerja Badan Ketahanan Pangan 2010-2014. <http://bkp.pertanian.go.id/tinymcepuk/gambar/file/LapKinerjaBKPTahun2010-2014.pdf>, Accessed on August 10, 2016.
- Farhanah and Prajanti. 2015. Strategies in Developing Agropolitan Areas in Indonesia. *Jurnal Ekonomi Pembangunan*, Vol.16 No.2, Desember 2015: 158-165.
- Hadi, Agus Purbathin. 2009. *Konsep Pemberdayaan, Partisipasi dan Kelembagaan Dalam Pembangunan*. Article. Yayasan Agribisnis/Pusat Pengembangan Masyarakat Agrikarya (PPMA).
- Keputusan Menteri dalam Negeri dan Otonomi Daerah Nomor 26 Tahun 2001.
- Peraturan Pemerintah Republik Indonesia (PP) No.68 tentang Ketahanan Pangan.
- Pranadji. Tri, 2004. Kerangka Kebijakan Sosio-Budaya Menuju Pertanian 2025 ke arah Pertanian Pedesaan Berdaya Saing Tinggi, Berkeadilan dan Berkelanjutan. *Forum Penelitian Agro Ekonomi*. Vol. 22 No. 1, Juli 2004: 1-21.
- Pranadji, Tri, 2006. Penguatan Modal Sosial untuk Pemberdayaan Masyarakat Pedesaan dalam Pengelolaan Agroekosistem Lahan Kering (Studi Kasus di Desa-Desa /Hulu Das Ex-Proyek Bangun Desa, Kabupaten Gunungkidul dan Ex-Proyek Pertanian Lahan Kering, Kabupaten Boyolali). *Jurnal Agro Ekonomi*, Vol. 24 No.2, October 2006: 178-206
- Sutikno *et.al*, 2010. Pemilihan Program Pengentasan Kemiskinan melalui Pengembangan Model Pemberdayaan Masyarakat dengan Pendekatan Sistem. *Jurnal Ekonomi Pembangunan*, Vol. 11, Nomor 1, June 2010, p.135-147.
- Rachmat, Muchjidin. 2015. Percepatan Pembangunan Pangan Menuju Pencapaian Ketahananpangan yang Mandiri dan Berdaulat. *Forum Penelitian Agro Ekonomi*, Vol. 33 No. 1, July 2015: 1-17.
- Sumastuti, Efriyani. 2015. The Empowerment Strategy for The Food Crop Farmers in Anticipating The Climate Change. *Jurnal Ekonomi Pembangunan*, Vol.16, No.2, 131-145, December 2015.
- Suradisastira. 2008. Strategi Pemberdayaan Petani. *Forum Penelitian Agroekonomi*, Vol.26 No.2, December 2008.
- Syahyuti, *et al*, 2015. Kedaulatan Pangan sebagai Basis untuk Mewujudkan Ketahanan Pangan Nasional. *Forum Penelitian Agro Ekonomi*, Vol. 33 No. 2, December 2015: 95-109.
- Syahza, Almasdi and Suarman. 2013. Strategi Pengembangan Daerah Tertinggal Dalam Upaya Percepatan Pembangunan Ekonomi Pedesaan. *Jurnal Ekonomi Pembangunan* Vol. 14 No. 1, June 201: p. 126-139.
- Undang-undang (UU) No. 7 tahun 1996 tentang Pangan.
- Vaidya, Omkarprasad S and Kumar, Sushil, 2006. Analytic hierarchy process: An overview of applications. *European Journal of Operational Research* 169 (2006) 1-29.