

**FOOD SECURITY POLICY ANALYSIS PERSPECTIVE ON FOOD SELF-SUFFICIENCY VILLAGE PROGRAMME CASE IN CENTRAL JAVA INDONESIA****Muhamad Rusliyadi**

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**ABSTRACT**

This purpose of the research is analyses of the Food Security Policy In Indonesia Case Food Self-Sufficiency Village Programme (DMP Programme) in terms of the role, implementation and impact of the DMP Programme. This analysis method was used a policy strategy using SWOT analysis. The expected benefit of the analysis is to provide a description of the output national and grassroots levels. Furthermore, of analysis was used the Analytic Hierarchy Process (AHP) method. The result of the result is on the impact of the program on village level revealed that the total score of (S) - (W) factor value of 0.24 and the total score (O) - (T) factor is 0.17. These positive values mean that the impact of the program generally showed relative success in terms of making some improvements. However, because of the severe conditions of poor households, the impact of the Programme has not been significant enough in changing the wellbeing of the community. The conclusion of the research are first, pay more attention to ensure community involvement and active participation in the Programme: the focus should be on poor households, because most of these are not active in the village. Second, in the short term, the Programme has very significant impacts: it can contribute to increased income and food security of poor households but the villages have been running the Programme only for about four years and there is a need to ensure the sustainability of the Programme. Third, the sustainability of the Programme at village level is needed and more effort needs to be made for farmer groups not to become too dependent on fund assistance.

**Keywords:** *analytic hierarchy process (AHP), food self-sufficiency village programme, food security analysis at household level, the role and impacts of policy, swot analysis*

**BACKGROUND**

Integrated agricultural policies on food security and poverty reduction policies are not new. There have been many studies that show how agricultural policy contributes positively to poverty alleviation. There is a need for government to make a comprehensive effort to promote policy instruments in terms of effective policy implementation for poverty reduction and food security (Rusliyadi et al., 2019).

Numerous agricultural policies in Indonesia have been launched, with several schemes in the rural areas. However, the impact and implementation are not significant, as is indicated from the data on the poverty rate and percentage of poor people. In rural areas, 16.56% of the population is considered poor, higher than in urban areas, where it is 9.87%. The main problem of poverty in

Indonesia is the use of the basic needs measurement approach. The biggest contributor of the basic needs measurement of the poverty line is the food component at 32.81%, whereas non-food components contributing to the poverty line is 6.35% (CBS, 2016).

The challenges in food security development in general are linked to high population growth, limited natural resources and shifting functions of agricultural soil, inadequate infrastructure for businesses in the food sector, increased competition with imported merchandise in the marketplace, and the sheer number of poor people (Paasch et al., 2015). Moreover, demand for food per capita increases over time, driven by increased revenue, awareness of health and diet changes, because of the influence of globalization and various community activities. In Indonesia, poverty and the attainment of food security have been the main problems. Food insecurity is widely experienced in many regions and is positively linked to impoverishment (Rusliyadi, 2021).

People who are faced with poverty are generally weak in fulfilling critical needs such as food and nutrition, health and education. Data from the National Food Security Agency (2011) indicate that most people in Indonesia have a shortage of energy and protein for consumption, that is, below the recommended amount of 2000 kcal of energy per capita (CBS, 2017). A total of 127.9 million people, or more than 53% of the entire population of Indonesia, has an energy consumption from 1,322 to 1,988 kcal per capita per day, or 66.6% - 99% of the recommended dietary allowance.

Another problem for poverty reduction effort is in terms of food intake per head consumption, which is rather high in Indonesia. The total consumption for the whole population per year is not commensurate with total domestic food production. For instance, rice is the staple food in Indonesia. According to Paasch et al. (2015), Indonesia is the world's third leading paddy producer and has a yearly output of 54.8 million metric tons of rice in 2011. Rice has given an economic boost to approximately 13.6 million farmers, of whom 65% are categorized as poor smallholders with less than 0.5 ha of landholdings. It is calculated that about 21 million people find work in the entire rice sector. At the same time, rice is by far the most influential staple food, involving about 215 million citizens, contributing 60% of the per capita of daily calorie intake (FAO, 2011). Rice consumption presently exceeds production by around 5% and is building up even more rapidly than production. It makes Indonesia as one of the world's biggest rice importers (Rusliyadi and Libin, 2018).

Against this backdrop, this research seeks to situate itself in the gap of in-depth studies dealing with positive contributions to rural development in Indonesia with a focus on economic development and the food security programme. It analyses the Food Self-sufficiency Village Programme (Desa Mandiri Pangan Programme – DMP Program) and agricultural extension policy. These policies are aimed at resolving the existing problems at the grassroots level in rural areas. Therefore, these policies are expected to contribute importantly to the overall operation of rural growth. Moreover, Indonesia is currently facing troubles with food insecurity and imbalance between production and consumption. This research examines problems in agricultural policies that have direct or indirect beneficial impact on poverty alleviation. The study is about trying to understand the issues and problems in the hope of providing solutions to the problems facing the majority of Indonesian society in the rural development chain (Rusliyadi et.al., 2019).

## RESEARCH METHODS

This research is focused on the existing food security policy in Indonesia with regard to the Food Self-Sufficiency Village Programme (DMP) that has been implemented since 2015. The methodology used in the study was mainly quantitative, but a qualitative approach was also used to enrich the findings of the quantitative study. Primary data were analyzed using Microsoft Excel and Statistical Program for Social Science (SPSS). Research site in Java Island has the largest number of population in Indonesia. It was chosen to represent the research site. Central Java was chosen for this case study because it constitutes 17% of the population experiencing poverty (CBS, 2016). Secondly, it has many poor villages when compared to other provinces. Four villages were selected purposely, based on the recommendation by the Agricultural and Food Security Agency in Regency Level. Two villages from Kebumen Regency, Kedung Dowo Village at Poncowarno District and Selogiri Village at Karanggayam District, and the others in Magelang Regency at Madukoro Village Kajoran District and Candirejo Village Borobudur District were selected. These villages have been implementing the programme in varying stages with different characteristics and success rate.

Data related to the Food Self-Sufficiency Village Programme (DMP) and extension service were collected using unstructured and semi-structured questionnaire. The survey was conducted in four villages, each of which involved 100 samples. Samples were selected using a purposive and clustered sampling technique based on some particular sample criteria. Criteria of the sample chosen were based on farmer characteristics such as rich farmer, poor farmer, farmer leader, the village leader, man and women. The purposive sampling technique is a type of non-probability sampling that is most effective when one needs to study a certain cultural domain with knowledgeable experts within.

The analysis data is using analysis SWOT analysis and Analytical hierarchy process (AHP). According to Kurttila et al. (2000), AHP is a commonly used decision analysis method, the AHP's value is that its calculations are integrated with SWOT analysis. AHP's connection to SWOT yields analytically determined priorities for the factors included in SWOT analysis and makes them commensurable. The main aim of applying this method is to improve the quantitative information basis of strategic planning processes.

## RESULT AND DISCUSSION

### **The Role of the DMP Programme in Food Security and Poverty Reduction**

The Programme is important in food security and poverty reduction. If the Programme is to be run smoothly and successfully, it has to follow the necessary patterns and structures of policy and programme. DMP is a multi-year programme, the purpose of which is for food security and poverty alleviation in villages. A comprehensive analysis is needed in order to learn whether or not the activity is successful at the village or grassroots level. The main objective of the Programme is to enhance food security and nutrition through the utilisation of community resources, institutions and local culture in the countryside. The Programme develops rural communities so that they are able to create food security and nutrition and can lead to healthy and productive lives. The effort is through community empowerment and recognising local potential, seeking alternative opportunities and solving problems. The ability to make use of natural resources in an efficient and sustainable way is

important in the Programme. The expected result is the availability of venture capital, the availability of an integrated business group, development of more complete infrastructure facilities and a decreased in the number of poor households.

The programme expands every year, as shown in Table 30 below. The number of villages has increased from 250 in 2011 to 3,249 villages in 2017. The target is to reach 369,750 poor families. The number of poor households to be allocated to the Programme has increased and this is followed by an increase in the amount of assistance funds allocated. According to the Food Security Agency in the Ministry of Agriculture (2017), the amount of social aid funds allocated to villages has increased over time. The increase in social aid is as follows: Rp. 24,040 billion (2011), Rp. 35,400 billion (2012), Rp. 22,100 billion (2013), Rp. 35,900 billion (2014), Rp. 50,230 billion (2015), Rp. 40,600 billion (2016) and Rp. 39,800 billion (2017) (BKP, 2017).

**Table 1.** DMP Programme Development by Year

No.	Description (Number)	Year						
		2011	2012	2013	2014	2015	2016	2017
1.	Poor Family	31,250	75,500	103,125	148,000	235,625	331,375	369,750
2.	Farmers' Groups	1,250	3,020	4,125	5,920	9,425	13,255	14,790
3.	Villages	250	604	825	1,184	2,013	2,851	3,249
4.	Regencies	122	181	202	276	378	399	410
5.	Provinces	30	32	33	33	33	33	33

Sources: Food Security Agency - Ministry of Agriculture, 2018.

The social aid funds from the Programme were used for on-farm businesses in the area of agriculture (60%), off-farm activities (14%), and non-farm activities (26%). On-farm businesses in agriculture include the cultivation of paddy crops, fruit crops, fisheries, nurseries and livestock. Off-farm businesses involved the processing of agricultural products. Non-farm businesses outside of agriculture include savings and loans, various types of trading, buying and selling, and crafts such as batik, woodcarving, carving and rattan furniture (BKP, 2017). Table 2 shows the hierarchy of implementing the programme in the chain of coordination from the Ministry of Agriculture to the village level. Each level of food security institution has specific duties and functions to perform. Food security institutions at each level should know their jobs and should be more active in carrying out their functions for the success and sustainability of the programme.

**Table 2.** Functions and Roles of Food Security Institutional Levels

No	Institutional level	Level of Authority	Functions And Roles of Institutions
1.	Food Security Councils	Center/National	Coordinator of Programme Implementers of Food Self-Sufficiency Village
2.	Food Security Agency/Department/Offices/ Works Unit	National/Province/Regency	In Charge of Activities in the Programme

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3.	Task Force/Working Groups Food Self-Sufficiency Villages	National/Province/Regency	Resume and Implementers of the Activities of Food Self-Sufficiency Village (Working Groups Inside Food Security Councils)
4.	Head Of District	Districts	Village Coordinators Food Self-Sufficiency Village Programme
5.	Head Of Village	Village	Person In Charge of Operational Activities Village Level Food Self-Sufficiency Village Programme
6.	Food Village Team	Village	Initiator, Activator And Formulate Activities at Village Level
7.	Affinity Farmer Groups	Village	Implementer of Activities at Village Level

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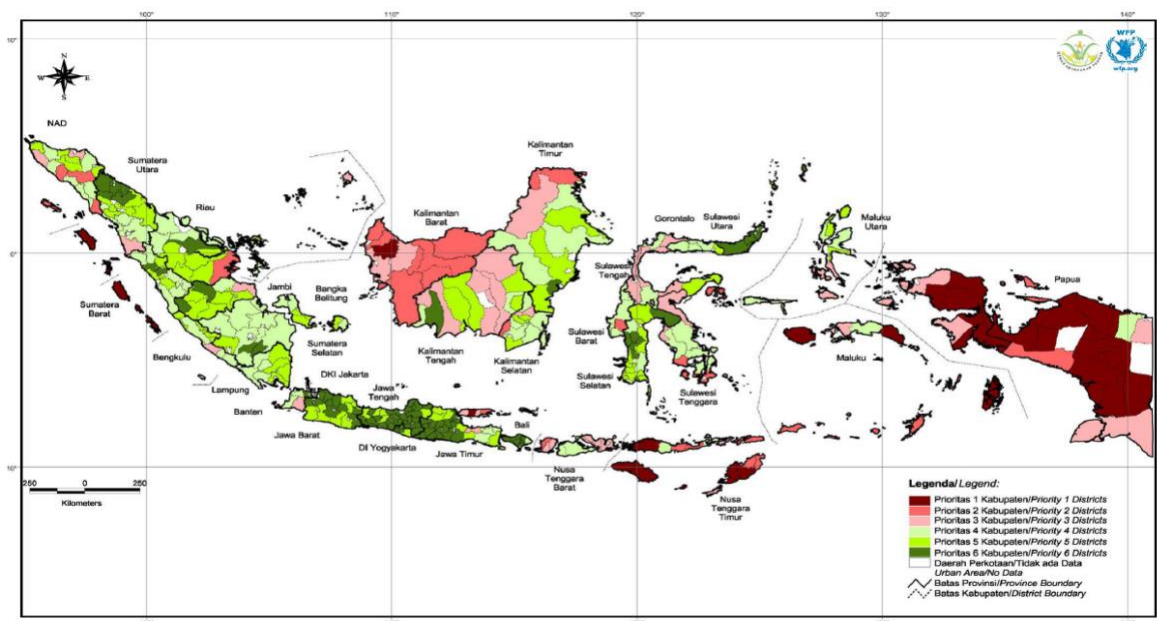
Sources: Secondary data from the Food Security Agency - Ministry of Agriculture, 2018

### Macro Level Analysis (National Level)

Nationally, the role of the Programme has addressed some important points. These include: 1) providing socio-economic information by mapping food insecurity areas in order to support local government, 2) pioneering/piloting projects in food security, 3) providing baseline information and characterization of poor areas, and 4) the flagship program, based on local commodity resources.

In 2014, the Food Security Council and the World Food Programme issued a Vulnerability and Food Security Map of Indonesia of 346 regencies in Indonesia, divided into six groups of priorities in handling food insecurity. The grouping is based on the variables causing food insecurity in the area. In the first three priority groups (groups categorized as vulnerable), access factors and the absorption of food variables affecting food insecurity in the area have been examined (DKP-WFP, 2014). The contribution of the Programme to the map of Vulnerability and Food Security Indonesia is expected to become one of the additional information complementaries to subsequent food security policies.

The map in Figure 1 is based on information obtained in the first and second priority groups of regencies. The main variables causing food insecurity are high rates of poverty, limited access to electricity, limited road access and limited access to clean water. In the third priority group of regencies, the main variables causing food insecurity are high rates of poverty, limited access to clean water, the large disparity between demand and food production (cereals), and limited access to electricity. These results indicate that in the first and the second priority groups, the main variables that indicate food insecurity variables do not include availability of food. On the other hand, the variables include the factors of food access and food absorption for the third priority group. The availability of food is important to note, because variables, including food availability (referring to the gap between demand and food production) are among the main variables that indicate food insecurity in an area. These results indicate that the factors of food access and food absorption are more dominant in affecting food insecurity in an area compared to the availability of food (DKP, 2014).



**Figure 1.** Food Security and Vulnerability Atlas-FSVA of Indonesia

Sources: Food Security Councils - Ministry of Agriculture and World Food Programme, 2014

The DMP Programme is a pilot project of the Ministry of Agriculture that seeks to promote food security and alleviate poverty. The pilot program will be a breakthrough in the implementation of the policy at village level in terms of food security. The success of the program has been recognized by the non-profit organization, AGFUND (Arab Gulf Programme for Development), which announced that DMP was the winner of the AGFUND International Prize in 2017. This Programme gets the best results in the category of the activities carried out by government agencies in the development of innovative ideas and the pioneer adoption activities in implementing national policy (www.bkp.pertanian.go.id, 2018).

**Table 3.** SWOT Analysis the Role of DMP Programme at National Level

No	Description Internal and External factor	Value	Rating	Score
<b>Internal Factor</b>				
<b>Strengths (S)</b>				
1	Large potential of land and resources	0.32	5	1.6
2	Additional socio-economic information to support map food insecurity	0.14	4	0.56
3	Pilot project the poor areas based on the food security Programme	0.19	4	0.76
4	The existence of structures and coordination of food security institutions	0.12	3	0.36
5	The flagship programme of the Ministry of Agriculture with a long duration	0.23	4	0.92
				4.2

<b>Weaknesses (W)</b>				
1	Inadequate human resources (staff and support officers)	0.38	3	1.14
2	The role of national food security institutions are not optimal	0.1	4	0.4
3	Dependence on rice and the staple food.	0.2	3	0.6
4	Low level of knowledge of food cultivation technology	0.17	4	0.68
5	Low farmer incomes	0.15	3	0.45
				3.27
	Total score Strengths (S) - Weaknesses (W) factor			0.93
<b>External Factor</b>				
<b>Opportunities (O)</b>				
1	Community Food Institutional Development at the National level	0.18	4	0.72
2	The existence of Food Security Programme Policy at national level	0.27	3	0.81
3	High Potential Employment	0.23	4	0.92
4	The existence of public health and nutrition institutions	0.15	3	0.45
5	Synergy programme opportunities across sectors with the same platform	0.17	4	0.68
				3.58
<b>Threats (T)</b>				
1	High Population Growth	0.18	4	0.72
2	The high number of poor households remain	0.25	4	1
3	A high price of agricultural inputs	0.3	3	0.9
4	The tendency of nutrition and health problems	0.13	3	0.39
5	The sectoral ego is still high	0.14	3	0.42
				3.43
	Total score Opportunities (O) - Threats (T) factor			0.15

Source: Primary Data Analysis, 2018.

Table 3 shows the SWOT analysis of the role of the Programme at the national level. SWOT analysis distinguishes factors scheme that used value rating and score at all levels. It also shows its influence on policy implementation. Nationally, the value of total score, Strengths (S) - Weaknesses (W) factors and the total score Opportunities (O) - Threats (T) factors, shows a positive value. That means in general the role of policy indicates in general that it is running well in food security policy in Indonesia. According to Kurttila et al. (2000), such positive factors show what predominated: four out of five of the highest priorities represented strengths or opportunities.

According to BKP (2018), there are 10 criteria used in the assessment of an activity which deserves the AGFUND Award. These include: first innovation demonstrated by an activity in line with the missions, values and goals and themes defined by AGFUND, second the design activities' contribution in support of effective management pattern to achieve the main objectives, third appropriateness (relevance) level of the activities in relation to the theme, fourth the impact of the activities, in relation to input and access to given benefits and services that are performed by the

activity, fifth participation of beneficiaries in design and preparation, sixth the possibility of replication in other areas or countries, seventh efficiency of financial management and resource utilization and timeliness in implementation, eight achievement of the objectives of activities, nine sustainability of activities, benefits and services, and ten social and environmental impacts. The DMP Programme met all 10 requirements, earning it the winning position, outperforming programmes implemented in other countries.

In relation to the SWOT analysis, Table 3 shows the analysis of policy options based on priorities. The combination of internal factor strengths with external factor strengths produced three strategies: 1) implementing synergies and revitalisation of agriculture, fisheries, forestry land with the potential resources available for poverty reduction, 2) creating coordination, advocacy and dissemination of food security in order to overcome the problem of population, poverty, production facilities, and nutrition and health issues, and 3) improved facilities and infrastructure as the first priority to alleviate poverty at national level, especially access roads in remote villages. Item number 9: “Increasing Unit Working Main Duty and Function, Competency Local Officers and Synergy Between Sectors” is ranked 8 as the priority. The result shows that knowledge of food security with the duties and functions of officers in institutions is not running smoothly since the value on the SWOT analysis is not high. There is a need to improve and review the duties and responsibility of officers related to the development of food security by each working unit area. The synergy between sectors is still low with a need for improved or foci on national level policies to be addressed in national programme priorities.

**Table 4.** Policy Option Analytical Hierarchy Process (AHP) Base on Priorities of the Role of Programme at National Level

No	Policy Option	Values	Percentage (%)	Priorities
1.	Cultivation technology knowledge development	0.07345	7	7
2.	Facilities and infrastructure development	0.18898	19	1
3.	The village barn development	0.06435	6	9
4.	Human resource development	0.12586	13	3
5.	Poverty reduction policies focus	0.15745	16	2
6.	Diversification food processing technology Development besides rice	0.09423	9	6
7.	Improvement of the pattern of food nutrition and public health	0.12477	12	4
8.	Maintain input and output prices at national level	0.10345	10	5
9.	Increasing unit working main duties and functions, competency of local officers and synergy between sectors	0.06746	7	8

Sources: Primary Data Analysis, 2018.

### Implementation of the DMP Programme for Food Security and Poverty Reduction

Since food is a strategic commodity that can affect the social, economic and political situation, more attention is required for handling it. Similarly, the related policies of food sovereignty should be the focus of the central government to be able to allocate the budget each year. The success of a program must necessarily be followed by implementation at both national and village levels. This



section evaluates the implementation of the DMP Programme in relation to food security and poverty reduction at different levels.

The analysis and evaluation of the existing data are shown in Table 5. The instruments used show that the four villages have not achieved the expected outcomes of program implementation (described as indicator/instruments). Few villages score ‘high’ in the instruments. This is because routine monitoring and evaluation are not carried out on the implementation of each programme in order to institute improvement after the evaluation exercise. The evaluation and monitoring of the programme in detail is, therefore, critical to the success of a programme at village level. Comprehensive review and structured efforts are needed by credible institutions in evaluating the programmer and not by organizer institutions.

**Table 5.** Evaluation Instrument of Food Self-Sufficiency Village Programme Implementation.

Indicator/Instrument	Kebumen Regency		Magelang Regency	
	Kedungdowo Village	Selogiri village	Candirejo Village	Madukoro Village
Instructors (assistants) – (INS)	Average	Low	Average	Average
Farmer Group Management (FGM)	High	Average	High	High
Capital Circulation (CCL)	Average	Average	Average	High
Infrastructure (IFT)	Low	Low	Low	Low
Employment (EMP)	Average	High	High	Average
Technology (TEC)	Low	Low	Low	Average

Sources: Primary Data Analysis, 2018.

The matrix provides a preliminary description of the implementation situation in each village. The matrix also provides a simple way of comparing the implementation situation as well as the programme impacts in the assessment of the villages.

**Table 6.** Preliminary Assessment Matrix of Food Self-Sufficiency Village Programme Implementation 2018

No	Village	Criteria					
		INS	FGM	CCL	IFT	EMP	TEC
1.	Kedungdowo	4	4	4	2	4	2
2.	Selogiri	4	3	4	2	5	2
3.	Candirejo	3	4	4	2	5	2
4.	Madukoro	4	5	5	2	4	3
	Criteria value number	0.20	0.15	0.20	0.15	0.15	0.15

Sources: Primary Data Analysis, 2018.

Based on transformation results shown in Table 6, Kedungdowo has a total performance index score of 114.25, making it 2<sup>nd</sup> in ranking. Selogiri has a value of 112.75 placing it 3<sup>rd</sup>. Candirejo has a value of 112.25 which is fourth. Madukoro has a value of 119.75 and is ranked first. This means that the greater the value of the performance index of a village, the higher the performance of the DMP Programme implementation for rural development as perceived by the community.

**Table 7.** The Transformation Matrix Results Comparison Technique Performance Index on Implementation Assessment of DMP Programme

No	Villages	Criteria						Value	Rangking
		INS	FGM	CCL	IFT	EMP	TEC		
1.	Kedungdowo	125	115	120	100	120	100	114.25	2
2.	Selogiri	120	100	125	100	125	100	112.75	3
3.	Candirejo	110	125	110	100	130	100	112.25	4
4.	Madukoro	125	130	125	100	125	110	119.75	1
	Criteria value number	0.20	0.15	0.20	0.15	0.15	0.15		

Sources: Primary Data Analysis, 2018.

**Macro Level Analysis (National Level)**

Implementation of the programme or policy is one important step in the process of public policy. A policy programme should be implemented in order to have the desired impact and purpose. According Setyady (2010), the policy implementation process not only involves the behaviour of the administrative body but also anyone responsible for implementing the programme. Its also involves a network of political forces and social factors directly or indirectly influencing the behaviour of all parties. Successful programme implementation depends on the stakeholders’ understanding of common goals and their commitment to them. The successfully implementation of a policy can be measured by looking at the synchronisation between the design plan and the implementation of policies, goals and objectives of the policy itself.

On policy implementation theory, according to Howlett (2019), there are four critical variables in the implementation of public policies or programmes: firstly, communication or information clarity and consistency of information (communication), secondly, availability of resources in a certain quantity and quality (resources), thirdly, the attitudes and commitment of the bureaucrats implementing programmes or policies (disposition), and lastly bureaucratic structures or standard operating procedures governing the work and governance (bureaucratic structure).

Based on the results of the SWOT analysis in Table 8, and when this is linked with Edward’s theory, it can be shown that communications, resources, disposition and bureaucratic structure can be placed in different quadrant positions. These indicators could represent quadrants of Strength (S), Weaknesses (W), Opportunities (O) and Threats (T). The variable in quadrant Strength (S) is communications and in quadrant Opportunities (O) additional support in socio-economic information map of food insecurity, and synergy programme opportunities across sectors with the same platform. This indicates that communication is critical in both internal and external policy factors, so there is a need for it to be improved effectively. Resources variable in quadrants Strength (S) and Opportunities (O) are also extending the mental ability of implementers’ policy that can be successfully applied. Disposition and bureaucratic structures in fact cover all the parts of a SWOT analysis where the executors are local officers in terms of implementation at village level. Civil servants play a major role in the success of policy implementation.

**Table 8.** SWOT Analysis on the Implementation of DMP Programme at National Level.

No	Description Internal and External factor	Value	Rating	Score
<b>Internal Factors</b>				
<b>Strengths (S)</b>				
1	Large potential of land resources	0.36	4	1.44
2	Additional socioeconomic information to support food insecurity map	0.24	4	0.96
3	The poor areas Pilot Project based on the food security programme	0.14	4	0.56
4	The existence of structural and coordination of food security institutions	0.12	3	0.36
5	The flagship programme of the Ministry of Agriculture with a long duration	0.14	3	0.42
				3.74
<b>Weaknesses (W)</b>				
1	Inadequate quality and quantity of civil servants.	0.28	4	1.12
2	The role of national food security institutions are not optimized	0.14	4	0.56
3	Dependence on rice as staple food	0.21	4	0.84
4	Low knowledge of food cultivation technologies	0.19	4	0.76
5	Low farmer incomes	0.18	4	0.72
				4
Total score Strengths (S) - Weaknesses (W) factor				-0.26
<b>External Factors</b>				
<b>Opportunities (O)</b>				
1	Community food institution development at the national level	0.23	4	0.92
2	Food Security Programme policy at the national level	0.17	4	0.68
3	High potential employment	0.16	3	0.48
4	Existence of public health and nutrition institutions	0.18	3	0.54
5	Programme synergy opportunities across sectors with the same platform	0.26	4	1.04
				3.66
<b>Threats (T)</b>				
1	High population growth	0.17	4	0.68
2	High number of poor households remain	0.25	4	1
3	High price of agricultural inputs	0.24	4	0.96
4	The tendency of nutritional and health problems	0.16	3	0.48
5	High sectoral ego	0.18	3	0.54
				3.66
Total score Opportunities (O) - Threats (T) factor				0

Sources: Primary Data Analysis, 2018.

The results of the SWOT analysis in Table 8 show that the total score of Strengths (S) - Weaknesses (W) is -0.26 and the total score of Opportunities (O) - Threats (T) is zero (0). These results show, in general, that there are problems in the implementation of the Programme because of the high value scores in the quadrants Weaknesses (W) and threats (T). There is a need for the strategy

in the food security policy to be comprehensive, and one such strategy is self-sufficiency in food production, i.e., ensuring the availability of (soybeans, sugar, beef) and sustainable self-sufficiency (rice, maize), enhancing food diversification, enhancing value, competitiveness and exports, and enhancing farmers’ welfare.

**Table 9.** Policy Option Analytical Hierarchy Process (AHP), Based on Priorities in the Role of Programme at National Level

No	Policy Options	Values	Percentage (%)	Priorities
1.	Cultivation technology knowledge development	0.09452	9	7
2.	Facilities and infrastructures development	0.12453	12	3
3.	The village barn development	0.08456	8	9
4.	Human resource development	0.13255	13	1
5.	Poverty reduction policies focus	0.12894	13	2
6.	Diversification food processing technology development besides rice	0.12423	12	4
7.	Improvement of the pattern of food nutrition and public health	0.11477	11	5
8.	Maintain input and output price at national level	0.10345	10	6
9.	Increasing unit working main duty and function, competence and local officers synergy between sectors	0.09245	9	8

Sources: Primary Data Analysis, 2018.

In practice, policy efforts are needed at the national level institutions in synergy. Synergy allows effective policy implementation without causing overlapping policies. Based on the AHP above, ‘increasing unit working main duty and function, competence and local officers’ synergy between sectors’ is ranked eighth. This shows that the effectiveness of bureaucracy at work in policy implementation remains low. Policy management should be pursued nationally, utilizing the synergy of each policy. The Indonesian government’s efforts in improving bureaucracy, for example, include having a special Institute for the Presidential Working Unit for Supervision and Control (UKP4). One task of UKP4 is to ensure consistency and synchronization of programs and projects included in the “National Priorities” and reduce red-tape by performing analysis, coordination, and facilitation to unravel the problems that occur in implementation. Unfortunately, the institution is at national level and not at regency or provincial level. There is a lack of supervision for programme implementation at lower levels. The regency level should have the same structure as the UKP4 institution.

**Macro Level Analysis (National Level)**

**Table 10.** SWOT Analysis of the Impacts of the DMP Programme at National Level

No	Description	Value	Rating	Score
<b>Internal Factors Strengths (S)</b>				
1	Large potential of land resources	0.27	4	1.08
2	The socioeconomic information an additional support for mapping food insecurity	0.22	4	0.88

3	The poor areas pilot project based on the food security programme	0.18	4	0.72
4	The existence of structures and coordination of food security institutions	0.15	4	0.6
5	The flagship programme of the Ministry of Agriculture with a long duration	0.18	4	0.72
				4
	<b>Weaknesses (W)</b>			
1	Inadequate quality and quantity of civil servants	0.21	4	0.84
2	The role of national food security institutions are not optimal	0.17	3	0.51
3	Dependence on rice as staple food	0.21	4	0.84
4	Low knowledge of food cultivation technology	0.16	4	0.64
5	Low farmer income	0.25	4	1
				3.83
	Total score Strengths (S) - Weaknesses (W) factor			0.17
<b>External Factor</b>	<b>Opportunities (O)</b>			
1	Development of community food institutions at the national level	0.21	4	0.84
2	The existence of food security programme policy at the national level	0.18	4	0.72
3	High employment potential	0.17	3	0.51
4	The existence of public health and nutrition institutions	0.15	4	0.6
5	Synergy opportunities across sectors with the same platform	0.29	4	1.16
				3.83
	<b>Threats (T)</b>			
1	High population growth	0.16	4	0.64
2	High number of poor households remain	0.28	3	0.84
3	High price of agricultural inputs	0.23	4	0.92
4	The tendency of nutrition and health problems	0.14	4	0.56
5	High sectoral ego	0.19	3	0.57
				3.53
	Total score Opportunities (O) - Threats (T) factor			0.3

Source: Primary Data Analysis, 2018.

One of the current development focuses is directed at the handling of the problem of poverty by increasing food security. In line with this, one of the community development programmes of food security is the reduction of rural poverty and food security at household level. The food security effort is to be realized in the context of working together with community and government, in terms of household development. If every household achieves food security, this will automatically lead to the achievement of community food security and reduced poverty the regional and national level.

The impacts of the Programme at national level are demonstrated using the SWOT analysis shown in Table 49. The results show that the total score of Strengths (S) - Weaknesses (W) is 0.17 and the total score of Opportunities (O) - Threats (T) is 0.3. The national impact is quite significant,

although it can still be enhanced to become optimal. The Programme has survived since 2011 and it delivers positive performance across the country. It has directly contributed to poverty reduction. The number of poor people has fallen significantly with the impact of decrease in people suffering from food insecurity at village level.

**Table 11.** AHP of Policy Options Based on Priorities of the Impacts of the Programme at the National Level.

No	Policy Option	Values	Percentage	
			(%)	Priorities
1.	Development of cultivation technologies and knowledge	0.08656	9	8
2.	Development of facilities and infrastructures	0.12456	12	3
3.	Village barn development	0.09995	10	6
4.	Human resource development	0.14396	14	1
5.	Poverty reduction policies focus	0.13876	14	2
6.	Diversification of food processing technology development besides rice	0.11435	11	5
7.	Improvement of the pattern of food nutrition and public health	0.11764	12	4
8.	Maintain input and outputs, prices at the national level	0.09876	10	7
9.	Increasing main duty and function unit working, competency local officers and synergy between sectors	0.07546	8	9

Source: Primary Data Analysis, 2018.

The AHP of the SWOT analysis of the impact of the national Programme in Table 10 shows that the first priority for policy is human resource development. It generally suggests that human resources, such as farmers and other programme implementers, need special attention from the government. In this case, the government needs to develop human resources in the Programme with practical training and education from top-down to village level. This should go hand-in-hand with the development of farmers and local officers to become qualified and committed to lead for the success of any programme implemented in the village.

It is interesting to note that the policy option ‘maintain input and outputs, prices at the national level’ is seventh in the AHP ranking. Why is it so far down the AHP ranking? The reason is that the government was powerless to prevent the rising price of inputs or outputs among speculators, big traders, middlemen and ‘mobsters’ to hold or raise prices. The fluctuating input price was determined by company distributors arbitrarily raising the price of inputs if there was no subsidy from government. Currently, the Indonesian government is subsidizing fertilizers such as urea, SP36, Za, organic manure and NPK compound fertilizers. The main constraints on the provision of these subsidies are that availability is not guaranteed and the price tends to fluctuate. Distribution of subsidized fertilizers is problematic at village level. Farmers used a basic plan of farmer groups’ needs (RDKK) to apply fertilizers, but availability depends on the store or trader at village level and sometimes there are gaps between farmer needs and trader stocks.

The policy of providing farmers with input subsidies is motivated by the importance and strategic role of fertilizers in increasing agricultural output and productivity. The government continues to encourage the efficient use of fertilizers through several policies which cover technical, supply, distribution and pricing issues. In addition, the distribution of fertilizer subsidy applied from the planning phase to the utilisation phase needs to be set at the highest retail price (HET). The total amount of fertilizer subsidy in the distribution system needs comprehensive calculation.

However, subsidies do not always have a positive impact on society. Subsidies may cause inefficient allocation of resources, because consumers pay for goods and services at a price lower than the market price, thus causing a tendency for consumers to be less efficient in their consumption. Policies on fertilizer subsidy have been applied in many countries, but they face strong criticism because they have caused problems such as unfair distribution, market dualism and excessive use of fertilizers: the subsidy costs outweigh benefits, as well as inhibiting the development of the national fertilizer industry.

**Table 12.** Resume Policy Option AHP Based on Priorities in the Role, the Implementation and Impact of DMP Program at National, Provincial, Regency and Village Level

No.	Cultivation technology knowledge development	Facilities and infrastructure development	The village barn development	Human resource development	Poverty reduction policies' focus	Diversified of food processing technology development besides rice	Improve ment of the pattern of food nutrition and public health	Maintain input and output prices at village level	Increasing the unit working main duty and function, competency of local officers, synergy between sectors
1	0.073	0.188	0.064	0.125	0.157	0.094	0.124	0.103	0.067
2	0.117	0.098	0.140	0.153	0.071	0.112	0.144	0.083	0.077
3	0.143	0.158	0.134	0.105	0.157	0.094	0.104	0.063	0.037
4	0.094	0.124	0.084	0.132	0.128	0.124	0.114	0.103	0.092
5	0.087	0.126	0.112	0.165	0.116	0.085	0.136	0.084	0.084
6	0.125	0.158	0.134	0.105	0.157	0.094	0.104	0.073	0.045
7	0.086	0.124	0.099	0.143	0.138	0.114	0.117	0.098	0.075
8	0.085	0.133	0.125	0.132	0.102	0.107	0.123	0.112	0.077
9	0.096	0.134	0.086	0.124	0.143	0.098	0.138	0.093	0.083
Average	0.101	0.138	0.109	0.132	0.130	0.102	0.123	0.090	0.071
%	10	14	11	13	13	10	12	9	7
Ranking	7	1	5	2	3	6	4	8	9

Source: Primary Data Analysis, 2018.

Operational policy recommendations based on the AHP are as follows: 1) facilities and infrastructure development, 2) human resource development, 3) poverty reduction policies, 4) improvement of the patterns of food, nutrition and public health, 5) village barn development, 6) diversification of food processing besides rice, 7) development of cultivation technologies and knowledge, 8) maintenance of input and output prices at the village level, and 9) increasing the main duty and function working unit, competence of local officers, and synergy between sectors.

The roles played by the programme at national level include: 1) contribution to socio-economic information with food insecurity area maps, 2) empowering pilot project programmes in food security policy, 3) provision of baseline programmes for poor areas, and 4) the flagship programme based on local commodity resources.

The programme at provincial and regency levels has strategic roles that include: 1) competitive/flagship programmes in each province, 2) providing a database resource for food security information at provincial and regency level, 3) acting as an alarm for food availability in insecure and vulnerable areas, and 4) Programme policy that covers almost all provinces in Indonesia is the foundation of food security policy in each region.

The findings from the analysis of the total performance index scores presented earlier revealed the following results. High scores mean high implementation performance of the Programme as perceived by the community: 1) Madukoro scores 119.75 and is ranked first, 2) Kedungdowo scores 114.25 and is ranked second, 3) Selogiri scores 112.75 and is ranked third, and 4) Candirejo scores 112.25 and is ranked fourth. This means that the best implementation performance in the Programme is shown by Madukoro.

The government has been able to implement rural development through the DMP Programme in terms of improving food security and poverty reduction. However, policy implementation at the local level has not been carried out effectively. The prevailing issues include misuse of budget funds due to improper design and misuse of budget expenditure where resources are only partially used for village development.

The impacts of the program at the national level using the SWOT analysis show the total score analysis (S) - (W) factor is 0.17, the total score (O) - (T) factor is 0.3. The impact of the nation is significant, but not as good as anticipated. The Programme has been in existence since 2011 and it makes significant contributions to rural development. It has contributed to poverty reduction directly. The number of poor people has reduced considerably, and as such there are fewer people now compared to before who are suffering from food insecurity at village level.

The implementation of the Programme at provincial and regency level shows the results of the analysis below. The total score (S) - (W) factor value of 0.07 and total score (O) - (T) factor value of -0.17. This means that the performance the implementation of the program is such that it has not been able to provide the maximum positive value. This is because of the external threats and internal strengths, such as high population growth and many poor households, the high price of agricultural inputs and the low production capacity and economic activity in the village, and there are few job opportunities. These factors have affected the performance of Programme implementation. The causes of implementation problems at provincial level include: the lack of information and socialization programmes, the lack of synergy with other programmes, and lack of effective evaluation performed at the provincial and regency levels.

Programme implementation at village level should emphasise the following points. Each rural development-based policy requires specific improvement in social, cultural and technical capabilities. The main objective of the Programme should be focused on the grassroots level. There is a need to create harmony in Programme implementation at both national and regional levels. The village level is the foundation for the success of a programme. For instance, the DMP Programme has been able to increase the income of farmers and thereby reduce poverty in the community.

The Programme effort at provincial and regency levels is more focused on utilisation of the nearest potential market and agriculture business, which has significant potential in generation of employment. Thus, policies should aim to create more job opportunities at district level to take up more labor from the rural community. The specific objective of the Programme is to involve more poor households in it and initiate economic activity in the village that will benefit villagers in the long



run. Policies are more supportive of each other than before between the provincial and the village level, because of the initiation of the Programme.

## CONCLUSION AND SUGGESTION

The results in this study show that the role of the programme at village level is crucial and it has significant objectives. This refers to a comprehensive purpose of the programme at the grassroots level. It has been observed that Programme has successfully improved institutional performance, which is a prime mover in increasing production capacity and economic activity with affinity groups (KA). The impact of the Programme, which is increasing the dynamism of farmer groups, giving rise to other contributions such as enhancing the achievement of food security at household level, increasing production capacity and rural economic growth, synergizing and integrating the rural economy, and accelerating food security and alleviating poverty of the affinity groups at village level. These are important points to be taken into consideration and the government should pay more attention to investing its resources in these areas.

The implementation of the program at national level, of SWOT analysis shows the total score (S) - (W) factor value of -0.26 and a total score (O) - (T) factor score of zero (0). This shows that, in general, there are some implementation problems affecting the scores in the quadrant (W) and (T) factors. The recommendation from the findings of this analysis is a comprehensive strategy in food security policy. One of such strategy is self-sufficiency in food production, i.e., ensuring the availability of (soybeans, sugar, beef) and sustainable self-sufficiency (rice, maize), enhancing food diversification, enhancing value-added agriculture products, enhancing competitiveness and exports, and enhancing farmer welfare.

SWOT Analysis on the impact of the Programme at village level revealed that the total score of (S) - (W) factor value of 0.24 and the total score (O) - (T) factor is 0.17. These positive values mean that the impact of the program generally showed relative success in terms of making some improvements to the previous situation. However, because of the severe conditions of poor households (very poor), the impact of the Programme has not been significant enough in changing the wellbeing of the community. Some important points to improve Programme implementation include the following. First, pay more attention to ensure community involvement and active participation in the Programme: the focus should be on poor households, because most of these are not active in the village. Second, in the short term, the Programme has very significant impacts: it can contribute to increased income and food security of poor households but the villages have been running the Programme only for about four years and there is a need to ensure the sustainability of the Programme if long-term impacts are to be seen. There is a need also for the affinity groups to be more active in the community. Third, the sustainability of the Programme at village level is needed and more effort needs to be made for farmer groups not to become too dependent on fund assistance.

The main recommendation from this research is the need for the roles, implementation and impact of the DMP program to be synergised. The integration between food security and poverty is crucial in the implementation stages at the national as well as the local level. In fact, there should be one 'policy map' for addressing food security and poverty issues. This provides a basic overview for each institution to plan the implementation of the policies. The policy actions become focused, so that there is no overlapping of policies between food security and poverty.

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