

The Impacts of Permanent Food Production Park Program on the Participants' Knowledge, Attitude, Practice and Income: A Case Study in Tawau, Sabah

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ABSTRACT Permanent Food Production Park program (or in Malay called as program *Taman Kekal Pengeluaran Makanan*, TKPM) is a strategy under Third National Agricultural Policy (DPN3). Tawau TKPM was started in 2008 with financial provision from the Federal Government. The project site was allocated by the Sabah State Government. The total area of the project was 92.3 hectares and divided into 59 lots, planted with various food crops. Currently, there are 43 entrepreneurs or participants involve in the project. The main purpose of this study was to identify the impacts of the implementation of Tawau TKPM on the knowledge, attitude, practices and income of the participants. The data for the study consisted of primary and secondary data. The primary data were obtained through questionnaire, while the secondary data were obtained from the records and reports published by the Department of Agriculture Sabah. All of the participants in the TKPM project in Tawau were selected as the respondents. The results of the Pearson's chi-square test revealed that The TKPM project has certainly given a significant impact to the participants' knowledge, attitude, and practices toward the good agricultural practices. The project at some extent has also successfully improved the participants' income. The study also found that the TKPM project requires certain duration of participation to be effective since the participants are dealing with different types of food crops. The findings of the study can be used as a reference to the authority to enhance the effectiveness of this project as well as other similar projects if to be implemented in the state in the future.

KEYWORDS: Knowledge, Attitude, Practice, Income, Permanent Food Production Park

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INTRODUCTION

Permanent Food Production Park (TKPM) program (or in Malay called as *program Taman Kekal Pengeluaran Makanan*, TKPM) is a strategy under Third National Agricultural Policy (DPN3) in the Eighth Malaysia Plan (RMK-8) to encourage the implementation of large-scale, commercial and high-tech agricultural projects by agricultural entrepreneurs including the private sector as a leading company (anchor company). In particular, the TKPM program is focused on increasing the production of fruits and vegetables. It is seen as a High Impact Project (HIP) which is considered as imperative to the redevelopment of the agricultural sector (Yusoff, 2015).

The concept of the TKPM implementation is to create cooperation between the Federal Government, State Government and entrepreneurs through a Memorandum of Understanding (MoU). This project is implemented to overcome the problem of lack of land suitable for food production. There are more than 76 TKPMs throughout Malaysia which have been developed from the RMK-8 to RMK-10 involving 1,384 participants with a physical area of 10,304 Ha (Department of Agriculture, 2012). Tawau Permanent Food Production Park was started in 2008 with financial provision from the Federal Government. The project site was allocated by the Sabah State Government. The total area of the project was 92.3 hectares and divided into 59 lots, planted with various food crops. The project involves 43 entrepreneurs or participants.

The main element in the implementation of TKPM is the project's participants. Their development in terms of knowledge, attitude and practices should always be emphasized that help them to gain a higher income. It is related to the informal dissemination of information and educational activities for the benefit of the target group, especially farmers in improving their ability towards better socio-economic development (Tiraieyari, 2009; Tiraieyari *et al.*, 2013).

Although this agricultural development activity has been implemented since the establishment of the TKPM, it is still unclear either the program or project has succeeded in improving the participants' knowledge, attitude and practices toward the good agricultural practices (GAP). Moreover, it is also important to identify if any constraints and weaknesses that limit the effectiveness of the program.

Knowledge, attitude, and practice (KAP) surveys are representative of a specific population to collect information on what is known, believed and done in relation to a particular topic or in this study is good agricultural practices (GAP). Knowledge is defined as a level in the form of truth, principles and information and is a well-founded belief (Hunt, 2003). If a person's knowledge increases, then it will be a motivator for him to change his attitudes (Valente *et al.* 1998). According to Fishbein & Ajzen (1975), attitude is a learned trait, and it takes a long time to respond directly to certain people, groups, ideas or situations as they like or not. While practice is a way that translates the knowledge and attitude possessed by an individual based on actions, behaviour, implementation and then become a habit.

METHODOLOGY

This study was conducted at the Tawau TKPM, Tawau, Sabah. The total area of the site is 93.0 hectare and is divided into 59 lots with 43 entrepreneurs or participants. All the entrepreneurs in the TKPM were selected as respondents in this study. A cross-sectional survey design was applied which is important in identifying the reasons behind various processes, as well as evaluating the effects of changes on norms, processes and others (Zikmund *et al.*, 2012). Data for the study consisted of primary and secondary data. The primary data were obtained through questionnaire that carried out from December 2016 until December 2017. Meanwhile, the secondary data were obtained from the records and reports published by the Department of Agriculture Sabah as well as from the Agris GeoPortal.

Four main variables studied are knowledge, attitude, practices, and income. The Guidelines for the Implementation of Good Agricultural Practices by Department of Agriculture Malaysia (2013) and the Malaysian Good Farm Practice Scheme Standards (2006) were used as main references in measuring the KAP of the participants on the good agricultural practices (GAP). The historical incomes of the respondents were obtained from the secondary data. Pearson's chi-square test was used to test the relationship between the participants' changes in knowledge, attitude, practices and income with their socioeconomic background.

RESULTS AND DISCUSSION

Table 1 shows the distribution of the participants according to their background information. As shown in Table 2, most of the participants (i.e. 35 or 81.4%) managed to improve their knowledge on GAP. However, only 18 or 41.9% and 4 or 9.3% of the participants have experienced positive change and improvement in their attitude and practices toward GAP, respectively.

Table 1. Background information

Background information		N (%)
Age	≤ 45 years	16 (37.2%)
	>45 years	27 (62.8%)
Education Level	≤ Secondary school	33 (76.7%)
	> Secondary school	10 (23.3%)
Gender	Male	35 (81.4%)
	Female	8 (18.6%)
Main Source of Income	TKPM as main income	11 (25.6%)
	TKPM as side income	32 (74.4%)
Experience	≤5 years	8 (18.6%)
	6-10 years	20 (46.5%)
	>10 years	15 (34.9%)
Duration of Participation in TKPM	<8 years	16 (37.2%)
	≥ 8 years	27 (62.8%)

Table 2. Impacts of the TKPM on the participants' KAP toward GAP

Impacts on KAP		N (%)
Knowledge	No improvement	8 (18.6%)
	Improved	35 (81.4%)
Attitude	No change	25 (58.1%)
	Positive change	18 (41.9%)
Practices	No improvement	39 (90.7%)
	Improved	4 (9.3%)

According to Valente *et al.* (1998), if a person's knowledge increases, then it will be a motivator for him to change attitudes. But the results show that the knowledge has no direct influence on the participants' attitude as well as their practices (Table 2). Majority of the participants have improved their knowledge on GAP after joining the TKPM project but not in their attitude and practices.

The Pearson's chi-square test's results show that there is no significant relationship between the impacts on the participants' knowledge towards GAP with their agricultural experience as shown in Table 3. But there are significant relationships between the changes in attitude and practices with the participants' experience. Majority of the participants with the experience of more than 10 years in agriculture (i.e. 60%) have changed their attitude towards GAP to positive as compared the participants with less than six years of experience where none of them (i.e. 0%) has changed their attitude towards GAP. It contradicts with the impact of the TKPM on the participants' practices toward GAP where the percentage of participants who have improved their practices is higher among the participants with less than six years of experience (i.e. 37.5%) as compared to those who have more than ten years of experience (i.e. 6.7%). The results indicate that the more experience the participants, the more positive they are toward the GAP. But this is not in the case of practices where a higher experience does not guarantee the participants to improve their practices toward GAP.

Table 3. Relationship between the impacts on KAP and the agricultural experience

Impact on KAP		Agricultural Experience						Pearson's chi-square test
		≤ 5 years		6-10 years		> 10 years		
		N	%	N	%	N	%	Value
Knowledge	No improvement	2	25.0	4	20.0	2	13.3	0.517
	Improved	6	75.0	16	80.0	13	86.7	
Attitude	No change	8	100.0	11	55.0	6	40.0	7.869*
	Positive change	0	0.0	9	45.0	9	60.0	
Practices	No improvement	5	62.5	20	100.0	14	93.3	9.714*
	Improved	3	37.5	0	0.0	1	6.7	

*Significant at 0.05

The relationship between the participants' changes in income and their background was also tested using Pearson's chi-square test. The results show that age, education, gender, main source of income, and agricultural experience were not significantly associated with the participants' changes in income before and after joining the project (Table 4). But there is a significant association between the duration of participation in the project and the changes in income. Majority of the participants with at least eight years of participation in the TKPM (i.e. 90.9%) have experienced an increase in their income, while only 53.1% of the participants with less than eight years of participation have experienced the same. This result indicates that the TKPM project requires certain duration of participation to be effective in increasing the participants' income. However, the Ministry of Agriculture and Agro-based Industry (KPIAT) has taken a proactive active by increasing the physical area with the minimum lot size is 1.22 hectare and the maximum is 2.55 hectare since 2014 (Department of Agriculture Sabah, 2017). This is seen as one of the efforts to increase the income of the participants to be above the income target outlined by the KPIAT which is RM3,000.00 (Yusoff, 2015). Besides, the participants actually need to be equipped with information, skills and organizational technology or innovation in order to improve their lives level while benefiting their productivity (Masso et al., 2016).

Table 4. Relationship between changes in income and background

	Background	Changes in Income				Chi-Square Pearson Test
		No change		Increased		
		N	%	N	%	Value
Age	≤ 45 years	11	34.4	5	45.5	0.430
	>45 years	21	65.6	6	54.5	
Education Level	≤Secondary School	26	81.3	8	72.7	0.359
	>Secondary School	6	18.8	3	27.3	
Gender	Male	27	84.4	8	72.7	0.359
	Female	5	15.6	3	27.3	
Main Source of Income	TKPM as main income	8	25.0	3	27.3	0.733
	TKPM as side income	24	75.0	8	72.7	
Experience	≤5 years	5	15.6	3	27.3	0.846
	6-10 years	15	46.9	5	45.5	
	>10 years	12	37.5	3	27.3	
Duration of Participation	<8 years	15	46.9	1	9.1	5.002*
	TKPM ≥ 8 years	17	53.1	10	90.9	

*Significant at 0.05

The study also found that the participants were facing various challenges and obstacles in order to achieve the target set by the department and also by the ministry, which are to achieve a minimum income of RM4,000.00 per month and to receive a MyGAP certification. Therefore, various efforts might be relevant to be made such as:

- i. Encourage development program activities through advance technology. According to Rahimah (2001), when new technology is introduced in a society, it will indirectly reshape that society. The use of technology is seen to increase productivity in an environmentally friendly and sustainable way (Mc Isaac, 1996). Although the department is facing the issue of lack of human capital, but the current technological advances need to be manipulated and utilized such as introducing mobile software that is more friendly to farmers;
- ii. Continuous monitoring of supervision from time to time should also be carried out continuously through full cooperation to ensure that agricultural participant always get guidance on the KAP that need to apply; and
- iii. Promoting GAP and MyGAP Certification aggressively and continuously in various media channels today as well as local activities actively. Creating efficient marketing channels and promotion of agricultural products at MyGAP farmers' market stalls in collaboration with various agencies.

CONCLUSION AND SUGGESTION

The TKPM project has certainly given a significant impact to the participants' knowledge, attitude, and practices toward the good agricultural practices. The project at some extent has also successfully improved the participants' income. The study has proved that the background of the participants is not an important factor in making the project successful except for the agricultural experience and duration of participation. It implies that the TKPM project is not a short-term program which can give an immediate result especially in improving the participants' income. It requires certain duration of participation to be effective since the participants are dealing with different types of food crop. However, there were a limited number of participants involved as the respondents in this study. A further study which covers more TKPM projects in other areas especially in Sabah should be conducted to validate the findings of the present study. Nevertheless, the findings of the study can be used as one of the references to the authority to enhance the effectiveness of the TKPM project as well as other similar projects if to be implemented in the state in the future.

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