COMPETENCY LEVEL OF EXTENSION AGENTS AND ITS RELATIONSHIP ON WORK PERFORMANCE IN RICE TECHNOLOGY TRANSFER AT IADA ROMPIN

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BY

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A project report submitted to Faculty of Agriculture, Universiti Putra Malaysia, in fulfilment of the requirement of PRT 4999 (Final Year Project) for the award of the degree of Bachelor of Agricultural Science

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ENDORSEMENT

This project report entitled "Competency Level of Extension Agents and Its Relationship on Work Performance in Rice Technology Transfer at IADA Rompin" is prepared by Huril Ain Binti Ami Nordin and submitted to the Faculty of Agriculture in fulfillment of the requirement of PRT 4999 (Final Year Project) for the award of the degree of Bachelor of Agricultural Science.

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ABSTRACT

Rice is the staple food of Malaysian and because of this, 12 granary areas have been developed by the government to increase the self-sufficiency level of rice which is now about 73%. There is a huge gap between potential yield and current yield and this issue is also happening in granary areas that are equipped with complete facilities. Rice check manual that has been provided by Department of Agriculture is the basis for rice technology in Malaysia. Extension agents are responsible to transfer this technology to the farmers. This research is to evaluate the competency level of extension agents in rice technology transfer based on the planning, implementing, monitoring activities and work performance. Next is to determine the relationship between the competency level of the extension agents in planning, implementing and monitoring activities and the work performance. Lastly, this research is to identify the strongest independent variables that contribute to work performance. The study is conducted using and analysing 161 established questionnaires that were distributed to farmers in IADA Rompin. Results show that competency level of extension agents in planning, implementing, monitoring activities and work performance is moderate. All independent variables have a positive correlation to the work performance with only monitoring shows high correlation. Next, implementing and monitoring is highly significant with work performance which indicates the strong relationship and contribution to work performance. As a recommendation, IADA Rompin needs to give attention in implementing and monitoring because they are significant with their work performance while improving in planning as it is also important. As a conclusion, implementing and monitoring contribute more to the work performance of extension agents in IADA Rompin.

ABSTRAK

Nasi adalah makanan ruji rakyat Malaysia oleh kerana itu, 12 jelapang padi telah dibangunkan oleh kerajaan untuk meningkatkan tahap sara diri beras yang kini dianggarkan sebanyak 73%. Terdapat jurang yang besar antara hasil potensi dan hasil semasa di kawasan pengeluaran padi. Masalah ini juga berlaku di kawasan jelapang yang mempunyai kemudahan lengkap. Manual 'Rice Check' yang telah dikeluarkan oleh Jabatan Pertanian adalah asas teknologi padi di Malaysia. Agen pengembangan berperanan untuk memindahkan teknologi ini kepada petani. Kajian ini adalah untuk menilai tahap kompetensi agen pengembangan dalam pemindahan teknologi padi berdasarkan aktiviti perancangan, pelaksanaan, pemantauan dan prestasi kerja. Seterusnya adalah untuk menentukan hubungan antara tahap kompetensi agen pengembangan dalam merancang, melaksana dan memantau aktiviti dan prestasi kerja. Akhir sekali, kajian ini adalah untuk mengenalpasti pembolehubah bebas yang menyumbang kepada prestasi kerja. Kajian dijalankan dengan mengumpulkan dan menganalisa 161 borang kaji selidik yang telah disediakan dan diagihkan kepada pesawah di IADA Rompin. Keputusan menunjukkan bahawa semua pembolehubah bebas mempunyai korelasi positif dengan prestasi kerja agen pengembangan dengan hanya pemantauan menujukkan korelasi tinggi. Pelaksanaan dan pemantauan adalah sangat signifikan dengan prestasi kerja dan ini menunjukkan ia menyumbang kepada prestasi kerja. Sebagai cadangan, IADA Rompin perlu memberi perhatian dalam pelaksanaan dan pemantauan kerana keduanya adalah signifikan dengan prestasi kerja dan pada masa yang sama memperbaiki aktiviti perancangan kerana ia juga penting. Kesimpulannya, pelaksanaan dan pemantauan lebih menyumbang kepada prestasi kerja agen pengembangan di IADA Rompin.

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ABBREVIATION

IADA	Integrated Agriculture Development Area
SPSS	Statistical Package for Social Science
UPM	Universiti Putra Malaysia
DOA	Department of Agriculture
MOA	Ministry of Agriculture
RMK-10	Rancangan Malaysia Ke-10
MADA	Malaysian Agricultural Research and Development Institute

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter consists of the introduction for this study. It will explain on the rice production in Malaysia, competencies and its components, problem statements, objectives and significance of the study.

1.1 Rice Production in Malaysia

Rice is the staple food of Malaysian and because of its importance, the production has been given a serious attention by the government. Even before the independence era, the paddy and rice development policy has started and continued after independence in 1957. The economic development and policy formulation has always been revised depending on the current national situation and world rice market (Nurnabilah, 2017).

According to the Department of Agriculture, in 2014 the area of rice planting is about 671.7 thousand hectares with the total rice production of 1677.4 thousand tons. Self-sufficiency level of rice in Malaysia is about 73% and the total population of Malaysia recorded in 2016 by the Department of Statistics is 31.7 million and this will continue to increase every year. Self-sufficiency is very important to ensure food security of the nation. To ensure food security and the effort to increase the self-sufficiency of rice, the government has developed 8 granary areas in the Peninsular Malaysia with the average yield of 5.212 ton/ha and 2,088,449 ton paddy production in 2014 (DOA, 2015).

1.2 Granary Area

Paddy planting in granary areas is expected to have higher yield than outside of the granaries because they have improved facilities and drainage, advisory services from extension agents of government departments and subsidies in the forms of fertilizers, herbicides and etc. Realizing the needs to increase the productivity and to improve the efficiency of yield system, 4 new granary have been developed in 10th Malaysian Plan which are Integrated Agriculture Development Authority (IADA) Rompin in Pahang, IADA Pekan in Pahang, IADA Kota Belud in Sabah and IADA Batang Lupar, Sarawak adding to the previous eight old granary areas (Salim, 2017).

The initiation of new granaries can be seen in aiding to increase rice production in Malaysia upon the reduction of land for rice cultivation due to competition with the development of housing area, industrial area, roads and other infrastructure that can be seen in several granaries. This situation has already affected Muda Agriculture Development Authority (MADA) in Muda Kedah. The Department of Agriculture reported that there is a reduction of the total planted area from 96,377 hectares in 2005 to only 94,779 hectares on 2014 and it even reaches 92,047 hectares on 2013 (Paddy Statistics of Malaysia, 2014).

Table 1.1 shows the rice production in ton per hectare for ten granaries during the main season in 2013/2014.

Table 1.1 Average Yield for Granary Main Season 2013/2014

Granary	Yield (ton/ha)
IADA Barat Laut Selangor	6.247
IADA Terengganu Utara (KETARA)	5.996
IADA Pulau Pinang	5.692
MADA	5.536
IADA Seberang Perak	4.634
KADA	4.406
IADA Kerian	4.396
IADA Kemasin Semerak	3.823
IADA Rompin	3.586
IADA Pekan	2.338

(Adapted from: Paddy Production Survey Report, 2015)

1.3 Integrated Agricultural Development Authority Rompin (IADA Rompin)

The research is conducted focusing on the IADA Rompin, Pahang that consist of 1638 paddy farmer with 2525 hectares of the planted area on 2013/2014 season and yield of 3.586 ton/ha which ranked 9th from ten granaries as shown in Table 1.1 (DOA, 2015).

IADA Rompin is one of the four new granaries developed in 10th Malaysian Plan (RMK 10) which is one of the strategies to increase rice production in Malaysia and reducing the reliance of imported rice from other countries. Upon the initiation, five schemes are developed where two of it has already equipped with complete infrastructures which are Paya Sepayang and Paya Setajam. About five extension agents are responsible to provide assistance to paddy farmers within the area.

Figure 1.1 and 1.2 shows the layout of block in IADA Rompin which are Paya Sepayang and Paya Setajam respectively while Table 1.2 and 1.3 shows the area allocated for each block.

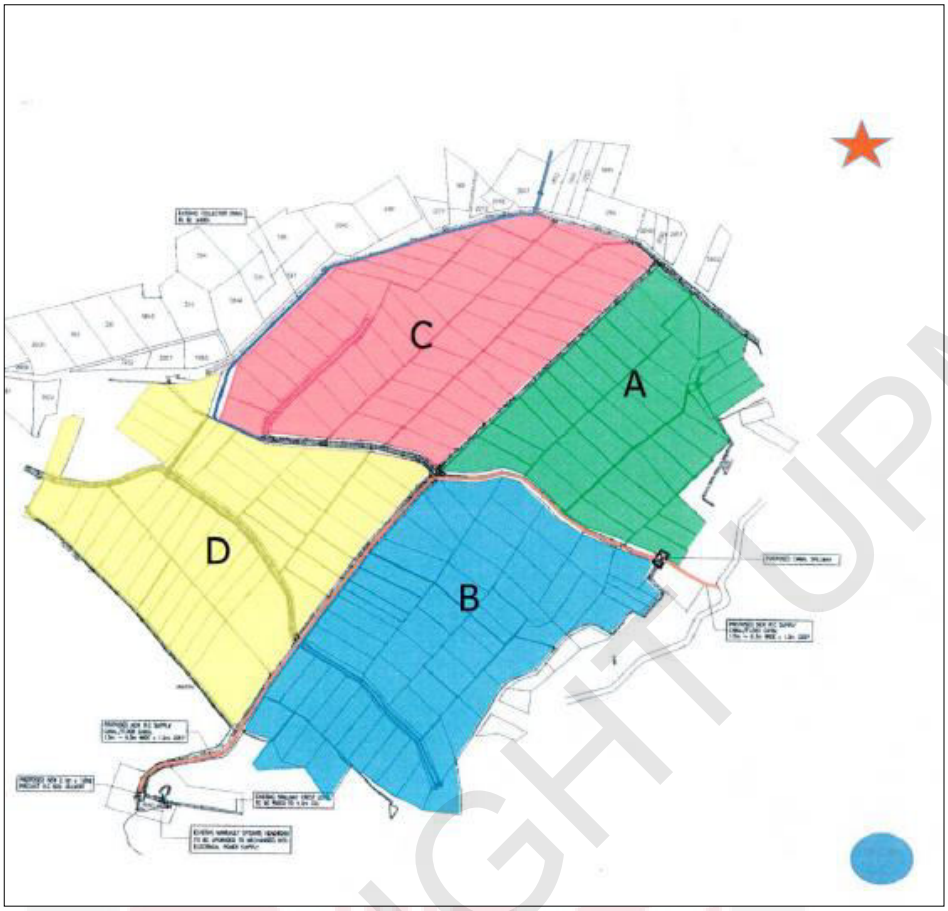

Figure 1.1 Layout of Block in Paya Sepayang

(Source: IADA Rompin, Pahang)

Table 1.2 Lot Numbers and Area of Paya Sepayang

Block	Number of lot	Area (Ha)
A	40	48
B	54	64
C	54	64
D	54	64
Total	202	240

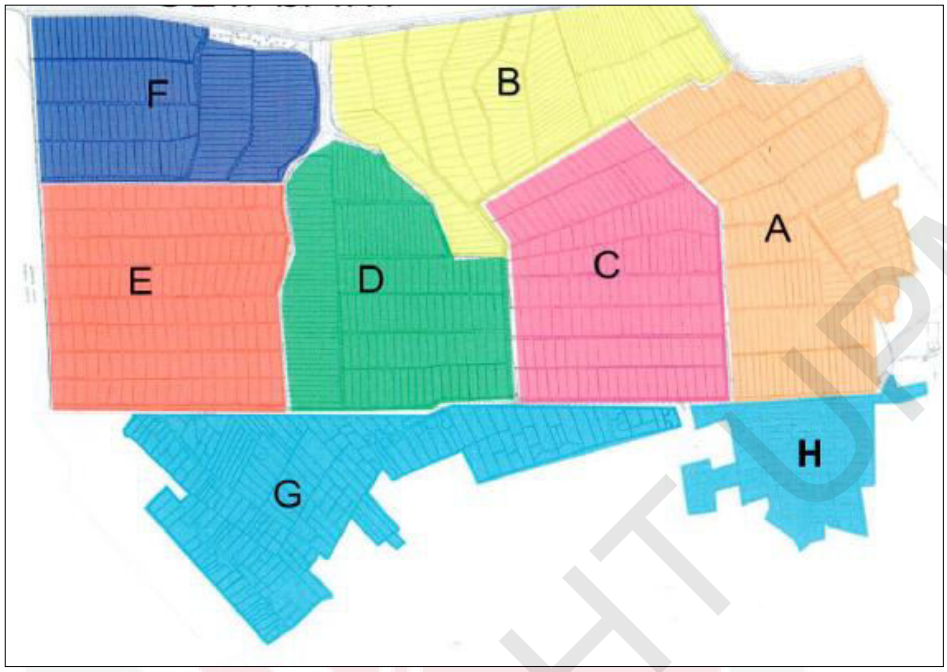

Figure 1.2 Layout of Block in Paya Setajam

(Source: IADA Rompin, Pahang)

Table 1.3 Lot Numbers and Area of Paya Setajam

Block	Number of lot	Area (Ha)
A	157	233
B	166	246
C	167	247
D	149	220
E	165	244
F	131	194
G	59	72
H	81	74
Total	1075	1530

1.4 Rice Check Technology

In Malaysia, Rice Check manual is a list of recommended technology package with complete standard (MARDI, 2002). In order to monitor and observe actual sustainability in rice fields, Rice Check appeared in Australia during the 1980s as the first Rice Check. The purpose is to improve the yields and product quality and also provide recommendations and learning tools to rice growers. It is adapted from Australia and started when MARDI launched MR 219 in January 2001 and the Department of Agriculture provides the manual. In that manual, the important activities of paddy planting starting from land preparation until harvesting are listed accordingly. The manual is prepared according to the actions that need to be taken during the activity and day number. The type and amount of materials that are going to be used in each activity are also provided for farmers as their references. The main component of Rice Check manual is the suitability of land, the design of land, land preparations, sowing, fertilizer application, water management, pest and disease control, weed control, harvesting and quality of rice (Zainalabidin, 2016).

1.5 Extension Agents

One main role of the agricultural extension agent is to ease the flow of innovations from the agricultural extension organization to the agent's clients, for example, the farmers (Abdel-Maksoud & Abdel-Maksoud, 2015). The needs for extension agents are very crucial to make sure that new technology from the researcher can be fully transferred to the farmers because it is not the researchers' task to transfer the technology. Without the extension agent, the industry will waste the new improved technology or variety as there is no connecting bridge between farmers and researchers. In planning activity, extension agent will provide the guidelines or

schedule to use any technology or variety for farmers to implement in the farming activity. The task of an extension agent does not end there. During the implementation process, the extension agents are responsible to monitor whether the farmers follow the guidelines provided by the researcher so that it is possible for the farmer to achieve maximum yield.

Extension agents also are responsible to open up the channels of communication and negotiation within and between structures to improve participation (Terblanché, 2008). Effective communication and negotiation between farmers, researchers, and management authority can be achieved if the extension agents managed to be the medium. As mentioned above, extension agents are the linkage between the farmers and authority including researchers. If there are any problems in the area of technology that are going to be transferred, it can be observed by the extension agents during the planning and monitoring activity. During the implementation of any technology, if there is any limitation that made the technology cannot be fully utilized or implemented, extension agents are responsible to gather the information from the farmers and report it to the management for example in this project, to IADA management so that appropriate actions can be taken to solve the problem.

1.6 Problem Statements

The research of new granary area on the competency and work performance of the extension agents are still scarce.

As a new granary area, the research on how the competency of extension agents related to the work performance in technology transfer is still low. It is important to find out the root cause of the below average yield in IADA Rompin so that the right

action can be taken by the authority to ensure the harvested yield will increase near to potential yield.

There is a huge gap between the potential yield of variety, for example, MR 219 that have been released by MARDI in January 2001 which is 10 ton/ha (MARDI, 2002) and the farmers' yield in IADA Rompin. As a new granary area with complete infrastructures, IADA Rompin ranked second last on the yield per hectare which is only 3.586 ton/ha after IADA Pekan which is 2.338 ton/ha in 2014 (DOA, 2015). As 30% of major granary area has been planted with MR219 variety that has potential yield about 10 ton/ha, it is shown that the yield reduced about 64.4%. In most of the old granary where the infrastructures are complete, the yield of MR219 from 2002 until 2014 is always at 50% below the potential yield (DOA, 2015). This creates a concern to see if the huge gap happens because of the low competency of the extension agents for transferring technology based on Rice Check which we know if it is followed correctly will give near potential yield or not. This study is an early action to tackle the real issues behind the yield gap so it will not be the same as in old granary area. The management authority can have the benefit to improve the competency of their extension agents if it is proved that the competencies of extension agents are related to the work performance.

Various agencies in Malaysia have produced new technologies and varieties to increase the yield of rice per hectare. As an example, Universiti Putra Malaysia has launched 9 new products in paddy technology on 30th of October 2016 and a new variety which is Padi U-Putra that have the potential yield of up to 10 ton/ha. This new improved variety and technology cannot be wasted by incompetent extension agents because according to the Minister of Higher Education Dato' Seri Haji Idris Jusoh on 2nd of February 2017, these new technologies by UPM will be introduced to

other granary and non-granary area. So, it is important for us to evaluate how effective is the competency in the transfer of technology by the extension agent in the granary area especially in IADA Rompin so that the potential yield can be achieved.

1.7 Objectives

1.7.1 General Objectives

To evaluate the competency of extension agents in the transfer of technology based on the Rice Check.

1.7.2 Specific Objectives

i. To evaluate the competency level of extension agents in rice technology transfer based on the planning, implementing and monitoring activities.

ii. To determine the relationship between the competencies of the extension agents in planning, implementing and monitoring activities and the work performance.

iii. To identify the strongest independent variables that contributes to work performance.

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