



**UNIVERSITI PUTRA MALAYSIA**

**OFF FARM EMPLOYMENT AMONG PADDY FARMERS IN THE  
MUDA AND KEMASIN SEMARAK GRANARY AREAS, MALAYSIA**

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**OFF FARM EMPLOYMENT AMONG PADDY FARMERS IN THE MUDA  
AND KEMASIN SEMARAK GRANARY AREAS, MALAYSIA**

**By**

**SADIYA SAMI ISMAILA**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in  
Fulfillment of the Requirement for the Degree of Master of Science.**

**December, 2008**



In appreciation of their love and sacrifices, this thesis is dedicated to Parents Alhaji Musa Sami and Hajiya Jummai Ibrahim Argungu, my beloved husband Samaila and my daughter Fauziya.



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science.

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Poverty is one of the most serious problems confronting paddy farmers worldwide, Malaysia inclusive. Off farm employment is an alternative strategy and has a potential to improve the income and well being of the paddy farmers. This study assessed the off farm employment decision among 500 paddy farmers in Muda Agricultural Development Authority and Kemasin Semerak granary areas. Specifically the study determined the relationship between the determinants of off farm and the off farm participation decision. It also describes the characteristics of respondents and their status in off farm employment. And it also tests hypotheses of relationships between off farm and individual, family and farm characteristics. Furthermore, it examined the income level of the farm households from paddy farming and off-farm employments and shows the effect of off farm employment to paddy farmers, using descriptive analysis, chi-square ( $\chi^2$ ) analysis and logit regression methods. Cross tabulation were applied to identify the relationship between dependent variable (off farm employment) and independent variables (age, gender, education, dependents size, other income, farm size and type). Chi-square was used to test the null hypothesis, stating that “there is no relationship between off farm employment and individual, family and farm



characteristics respectively”. To know the strength of the relationship between the variables that shows statistical significance with the dependant variable, Logit regression model was used.

From the overall empirical analysis of the results, the variables that show highly statistically significant association with off farm employment are age of farmers, gender number of dependants other income and farm type. Evidently farm size and education were not significant factors affecting off farm participation decision as no significant association was observed between them and off farm participation.



Abstrak thesis dikemukakan kepada senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**KEPUTUSAN PENYERTAAN PEKERJAAN BUKAN PERTANIAN OLEH  
PETANI PADI DI KAWASAN LEMBAGA KEMAJUAN PERTANIAN MUDA  
(MADA) DAN KEMASIN SEMERAK, MALAYSIA**

Oleh

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**Februari 2008**

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Kemiskinan adalah satu masalah yang membelenggu petani padi di seluruh dunia, termasuklah Malaysia. Pekerjaan bukan pertanian adalah satu strategi alternatif dan mempunyai potensi untuk meningkatkan pendapatan dan kehidupan para petani padi. Dalam kajian ini, penentu-penentu bagi keputusan penyertaan di dalam pekerjaan bukan pertanian dikaji di antara 500 petani padi di kawasan jelapang Lembaga Kemajuan Pertanian Muda (MADA) dan Kemasin Semerak. Hubungan di antara peayertaan bukan pertanian dan pemboleh ubah bebas dikenalpasti dan dikaji menggunakan “chi-square” untuk menguji hipotesis yang menyatakan bahawa “tiada kaitan di antara pekerjaan bukan pertanian dengan individu, keluarga dan ciri-ciri ladang”. Bagi mengetahui kekuatan perkaitan di antara pemboleh ubah yang menunjukkan kebergantungan dengan pemboleh ubah tetap, model “regresi logit” telah digunakan bagi menguji kesan hubungan di antara pemboleh ubah tetap (bukan pertanian) dan pemboleh ubah bebas (umur, jantina, pendadikan, jumlah tanggungan, pendapatan lain, saiz ladang dan jenis ladang). Dari analisis empirikal keseluruhan keputusan, pemboleh ubah yang

menunjukkan kesan statistik tinggi berkaitan dengan pekerjaan bukan pertanian adalah umur petani, jumlah tanggungan dan pendapatan lain. Terbukti ciri-ciri ladang adalah faktor kurang penting yang memberi kesan pada keputusan penyertaan bukan pertanian kerana tiada perhubungan jelas yang diperhatikan di antara saiz ladang dan penyertaan di dalam pekerjaan bukan pertanian.

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The crowning glory goes to my Husband Samaila for standing by me through thick and thin, may Allah reward him with the best of rewards.

I cannot find the words for my parents Alhaji Musa Sami and Hajiya Jummai Ibrahim "Oh Allah showers your mercies upon them, just as they nourish me when I was young".





I certify that an Examination Committee has met on 27<sup>th</sup> August 2008 to conduct the final examination of Sadiya Sami Ismaila on her Master of Science thesis entitled “Off farm employment among paddy farmers in Muda Agricultural Development Authority and Kemasin Semerak granary areas, Malaysia” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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## **DECLARATION**

I declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or and is not concurrently submitted for any other degree at UPM or at any other institution.

---

**SADIYA SAMI ISMAILA**

Date: 22 December 2008



## TABLE OF CONTENTS

	<b>Page</b>
<b>DEDICATION</b>	ii
<b>ABSTRACT</b>	iii
<b>ABSTRAK</b>	v
<b>ACKNOWLEDGEMENTS</b>	vii
<b>APPROVAL</b>	x
<b>DECLARATION</b>	xii
<b>LIST OF TABLES</b>	xiv
<b>LIST OF FIGURES</b>	xvi
<b>LIST OF ABBREVIATIONS</b>	xvii
<b>CHAPTER</b>	 
<b>1 INTRODUCTION</b>	<b>1</b>
1.1 Agriculture in economic development.	1
1.2 Agricultural sector in Malaysia.	1
1.3 Paddy production in Malaysia.	4
1.4 Granary areas in Malaysia.	6
1.5 Importance of off farm employment.	9
1.6 Statement of the problem.	13
1.7 Objectives of the Study.	15
1.8 Research questions.	16
1.9 Significance of the Study.	16
1.10 Thesis Outline.	17
<b>2 LITERATURE REVIEW</b>	<b>18</b>
2.1 Introduction	18
2.2 Definitions of off farm employment	18
2.3 Theory on livelihood diversification	19
2.4 Methodologies.	24
2.4.1 Decisions to engage in off farm by households.	24
2.4.2 Time allocation between on and off farm employment.	28
2.5 2.4.3 Labor supply	29
On determination of off farm work and empirical evidence	32
<b>3 METHODOLOGY</b>	 
3.1 Introduction.	36
3.2 Conceptual framework.	36



3.3	Data collection	37
	3.3.1 Sampling design.	38
	3.3.2 Sampling frame and size.	39
	3.3.3 Source of data.	40
	3.3.4 Questionnaire design.	41
	3.3.5 Pre-testing of questionnaire	43
	3.3.7 Hypothesis	43
	Data analysis	44
3.4	3.4.1 Descriptive analysis.	44
	3.4.2 Chi square	44
	3.4.3 Logistic model	46
3.5	Dependent variables	48
3.6	Independent variables	48
<b>4</b>	<b>ANALYSIS OF RESULTS</b>	
	4.1 Introduction	51
	4.2 Descriptive Analysis	51
	4.3 Relationship between dependent and independent variable.	64
	4.3.1 Individual characteristic and off farm	64
	4.3.2 Family characteristics and off farm	69
	4.3.3 Farm characteristics and off farm	73
	4.4 Effect of Off farm Employment to Paddy Farmers	78
	4.5 Chi-square Results	81
	4.6 Logistic Regression Results	86
<b>5</b>	<b>CONCLUSION AND RECOMMENDATION</b>	
	5.1 Introduction	93
	5.2 Summary	93
	5.3 Conclusion and policy recommendations	94
	5.4 Limitation of the study	96
	5.2 Recommendation for future research	96
	<b>REFERENCES</b>	97
	<b>APPENDICES</b>	103
	<b>BIODATA OF THE STUDENT</b>	112



## LIST OF TABLES

3.1	Hypothesis	38
4.1	Age of respondents	78



## LIST OF TABLES

<b>Table</b>		<b>Page</b>
		43
3.1	Hypothesis	51
4.1	Age of respondents	52
4.2	Gender of respondents	53
4.3	Level of education of respondents	54
4.4	Marital status of respondents	55
4.5	Race of respondents	55
4.6	Religion of respondents	56
4.7	Farm size of respondents	57
4.8	Dependents size of respondents	58
4.9	Paddy income of respondents	59
4.10	Off farm income of respondents	60
4.11	Total income of respondents	61
4.12	Off farm employment	62
4.13	Change in income due to off farm of respondents	63
4.14	Off farm by sector	64
4.15	Age and off farm employment	66
4.16	Gender and off farm employment	67
4.17	Education and off farm employment	69
4.18	Dependents size and off farm employment	71
4.19	Other income and off farm employment	



4.20	Farm size and off farm employment	73
4.21	Land ownership and off farm employment	75
4.22	Farm type and off farm employment	77
4.23	Effect of off farm to farmers in MADA	78
4.24	Effect of off farm to farmers in Kemasin Semerak	80
4.25	Effect of off farm to farmers in the Combine Areas	81
4.26	Age and off farm chi square	83
4.27	Education and off farm chi square	84
4.28	Gender and off farm chi square	84
4.29	Dependent size and off farm chi square	85
4.30	Other income and off farm chi square	85
4.31	Farm size and off farm chi square	86
4.32	Farm type and off farm chi square	86
4.33	Logit result for MADA area	87
4.34	Logit result for Kemsin area	89
4.35	Logit result for combine areas	91





## LIST OF FIGURES

<b>Figure</b>		<b>Page</b>
2.1	The basic livelihood framework	19
2.2	Positive attributes of livelihood diversification	24
3.1	Conceptual framework for off-farm employment	37



## LIST OF ABBREVIATIONS

FAO	Food and Agricultural Organization
NGOs	Non-Governmental Organizations
ha	Hectares
MADA	Muda Agricultural Development Authority



# CHAPTER 1

## INTRODUCTION

### 1.1 Agriculture in Economic Development

The agricultural industry is an important sector in the economy and it encompasses all agricultural activities. These include crops such as rubber, oil palm, cocoa, paddy, fishing, livestock and forestry. It is characterized by both small and large-scale production units, which produce output for domestic consumption and export.

The strategic importance of the agricultural sector in the overall economic development of a country extends to being a major source of food supply, export earnings, capital formation and linkages with other sectors. Most significantly, Agricultural sector serves as a source of employment. Its major contribution to rural development is also apparent in terms of improvement in income of rural households and subsequently, improves their quality of life. It can be concluded that the agricultural sector is an important sector of every economy.

### 1.2 The Agricultural Sector in Malaysia

The agricultural sector has contributed significantly to the growth and development of the Malaysian economy even though the Malaysian economy has undergone significant structural changes over the last four decades. For the first three decades since independence, agriculture was the main contributor to the Malaysia's national economy. This sector laid the foundation and has been the driving force behind the economic growth of the country. Agriculture was used to finance the development of

the country, which progressively led to the transformation of the economy towards industrialization (National Agricultural policy 3).

According to the Ninth Malaysian Plan (9<sup>th</sup> MP); the agricultural sector registered a favorable growth during the Eighth Plan period. Export earnings of the sector expanded significantly due to the increase in export volume and better prices of agricultural industrial commodities. The sector continued to provide the raw materials required by the domestic agro-based industries and part of the nation's food demand. In the present Ninth Plan period, the agricultural sector is being revitalized to becoming the third engine of growth. The emphasis now on the new Agriculture which will involve large-scale commercial farming, wider application of modern technology, production of high quality and value-added products, unlocking the potential in biotechnology, increased convergence with information and communications technology (ICT) and the participation of entrepreneurial farmers and skilled workforce. The functions of agricultural agencies are also being streamlined to enhance service delivery and efficiency.

During the Eighth Malaysian Plan (8<sup>th</sup>MP) period, the performance of the agricultural sector improved in terms of production, value added and exports, driven by the utilization of new technologies, shift to large-scale commercial production, and wider adoption of the group farming system, increased market accessibility and better commodity prices. Emphasis was given to the redevelopment of alienated agricultural land, particularly to expedite modernization and improve productivity (Ninth Malaysian Plan). The improved output of the agricultural sector contributed to better income and standard of living, particularly for farmers in rural areas. The

agricultural value added grew at an average rate of 3.0 per cent per annum throughout the eighth Plan period, higher than the target of 2.0 per cent. The higher growth was due to better performance of the agricultural industrial commodities sub sector, particularly oil palm and rubber (Ninth Malaysian Plan).

The share of the sector to gross domestic product (GDP) decreased slightly from 8.9 per cent in 2000 to 8.2 percent in 2005. Nevertheless, total agricultural value added increased from RM18.7 billion in 2000 to RM21.6 billion in 2005. The value added of agro-based industry grew at an average rate of 4.5 per cent per annum to reach RM16.9 billion in 2005. The combined value added of the agriculture and agro-based industry was RM38.5 billion or 14.7 per cent of GDP in 2005 (Ninth Malaysian plan).

Employment in the agricultural sector continued to decrease at an average rate of 0.2 per cent per annum to 1.4 million in 2005. However, labor productivity improved, as reflected by the increase in value added per worker from RM13,120 in 2000 to RM15,750 in 2005, at an average rate of 3.7 per cent per annum. The Agricultural census 2005 identified a total of 816,813 individuals or 7.2 per cent of the total labor force was involved in the agricultural sector. Of this total, 52.8 percent were agricultural operators, 37.2 percent workers and 10.0 percent-unpaid family workers. In terms of age profile, 43.8 per cent were in the age group 55 and above while only 25.3 percent were in the 15 to 40 years age group (Ninth Malaysian Plan).

Agricultural land use increased from 5.9 million hectares in 2000 to 6.4 million hectares in 2005. This is largely due to the expansion in the hectare of oil palm,

coconuts, vegetables and fruits. Of the total land area, 4.0 million hectares were under oil palm followed by 1.3 million hectares under rubber. During the Plan period, a total of 163,000 hectares of agricultural land remained idle. Efforts to optimize the utilization of idle land were hindered by several constraints, particularly absentee landlords, ageing landowners and farmers as well as difficulties in consolidating native and customary land (Ninth Malaysian Plan).

### **1.3 Paddy Production in Malaysia**

Paddy is produced mainly by small holders with an average farm size of about 1.06 hectares. There are approximately 296,000 paddy farmers of which 116,000 are full time farmers depending on paddy cultivation for their livelihood. Sixty five percent of the paddy farmers have farms of less than one hectare while only four percent have more than three hectares. According to Malaysian Agricultural Research and Development Institute (MARDI), the total planted area is about 670,000 ha, 386,000 ha within the eight granary areas, about 218,000 ha outside the granary area and about 70,000 ha representing upland/hill padi especially in Sabah and Sarawak. Average yield for the country is about 3.5 t/ha - an average of 4.2 t/ha in the granary areas and 3.2t/ha outside.

The domestic consumption of rice is projected to increase from 1.8 million tones in 1995 to about 2.3 million tones in 2010 as a result of population increase despite the declining per capita consumption of rice. Under the National Agricultural Policy, the local production of rice is expected to meet about 65 % of the domestic demand. The increase in production is targeted to come from higher productivity in the existing granary areas since there is no plan to increase the area under paddy cultivation.

With the shift of economic policy towards industrialization investors tend to invest more in industries rather than agriculture, resulting in the declining share of the agricultural sector in the GDP of the country. The agricultural sector also faces an acute shortage in labor due to the generally better incomes from working in factories and other industrial and commercial ventures. This has resulted in a gradual increase of non- planted or idle paddy land in many irrigation areas in the country. The government has already put in place policies within the Ninth Malaysia Plan (9MP) to increase the self sufficiency level (SSL) in food, with 90% for rice (subsequently revised to 86%). The current situation emphasizes the urgency of reaching this target. Malaysia imports some 30% of its rice needs. For the record, out of the RM2.5 billion originally budgeted for the 9MP National Food Security Policy, more than 70% was dedicated to rice alone. Of this total, RM803 million is to increase rice production and RM1.01 billion to create a stockpile. However, in the 9MP mid-term review (June 26, 2007) the government announced an additional RM3 billion to the National Food Security Policy. It is understood that the bulk of the allocation would go towards various subsidies for farmers. This according to MARDI, is in addition to the existing subsidies provided to the farmers which stands at RM923 million for 2008. The allocation is meant to quickly increase paddy production, with the targeted increase in production by about 0.5 mt/ha by 2010, through the provision of additional fertilizers for better soil fertility, land leveling, maintenance of irrigation and drainage, control of pests and diseases and so on. With that expected increase in productivity, the SSL will increase to about 86% by the same year.

Despite the small size of the rice sector in relation to the national economy, government has continued to provide generous support and various incentives to rice farmers in order to sustain rice production in view of its strategic importance as a staple food crop as to support farmer's incomes.

While Malaysia is moving rapidly towards industrialization, food production, particularly in the case of its staple food (rice) will continue to receive the attention of the economic planners and policy makers. Malaysia is a high cost rice producer compared to her neighbors rice production in Malaysia is facing a host of physical and operational constraints such as shortage of land and water resources, escalating prices of agricultural inputs, labor shortages, low water use efficiency, low adoption of technology, uneconomic land holdings, high post-harvesting losses, inadequacy of infrastructural facilities, etc. A clear long term vision supported by workable and comprehensive strategies will be required to achieve the production target. The production of other food crops will be determined by market forces but suitable incentives should be provided to help increase production in order to cut down the hefty food import bill which has escalated over the years with the rise in population and general income levels of the people.

#### **1.4 Granary Areas in Malaysia**

Malaysia currently has eight granary areas covering 386,000 ha of the total paddy area, and contributing about two-thirds of total national rice production. The granary areas are MADA, KADA, KETARA, IADP Pulau Pinang, Krian Sg. Manik, Barat Laut Selangor, Seberang Perak and Kemasin Semerak. The granary areas are managed by a dedicated government authority with dedicated human resources and



development operating budgets, and operate on an integrated area development approach involving relevant government agencies and departments. Under this approach, the authority is mandated to increase farm productivity and maximize farm income, modernize farm production and increase farm outputs.

Irrigation facilities for double cropping are mainly focused on the eight main granary schemes and the 74 mini-granary schemes, with an average cropping intensity of 150 percent. The current irrigation efficiency is around 35-45 percent with a water productivity index for rice of about 0.2 kg/m<sup>3</sup>. For this study we will concentrate on only two granary areas, which are Muda Agricultural Development Authority (MADA) and Kemasin Semerak.

Kemasin Semerak is among the second set of granary areas, it was established in 1982, with the aim to accelerate 'in-situ' rural development integrated through flood control, irrigation and drainage system in order to increase farm productivity. The width of the area under PERKASA administration is about 68,350 hectare which includes Bachok Territory, Pasir Puteh and parts of Kota Bharu territory. From this total, only 24,000 hectare of agricultural land involved about 30,195 farmers in many agricultural sectors.

MADA is the largest and the most important granary area in the country in terms of both size and output. The region is one of the most efficient paddy producing Regions in the country. The MADA irrigation scheme is located in the Northwest region of peninsular Malaysia, covering both the states of Kedah and Perlis. The