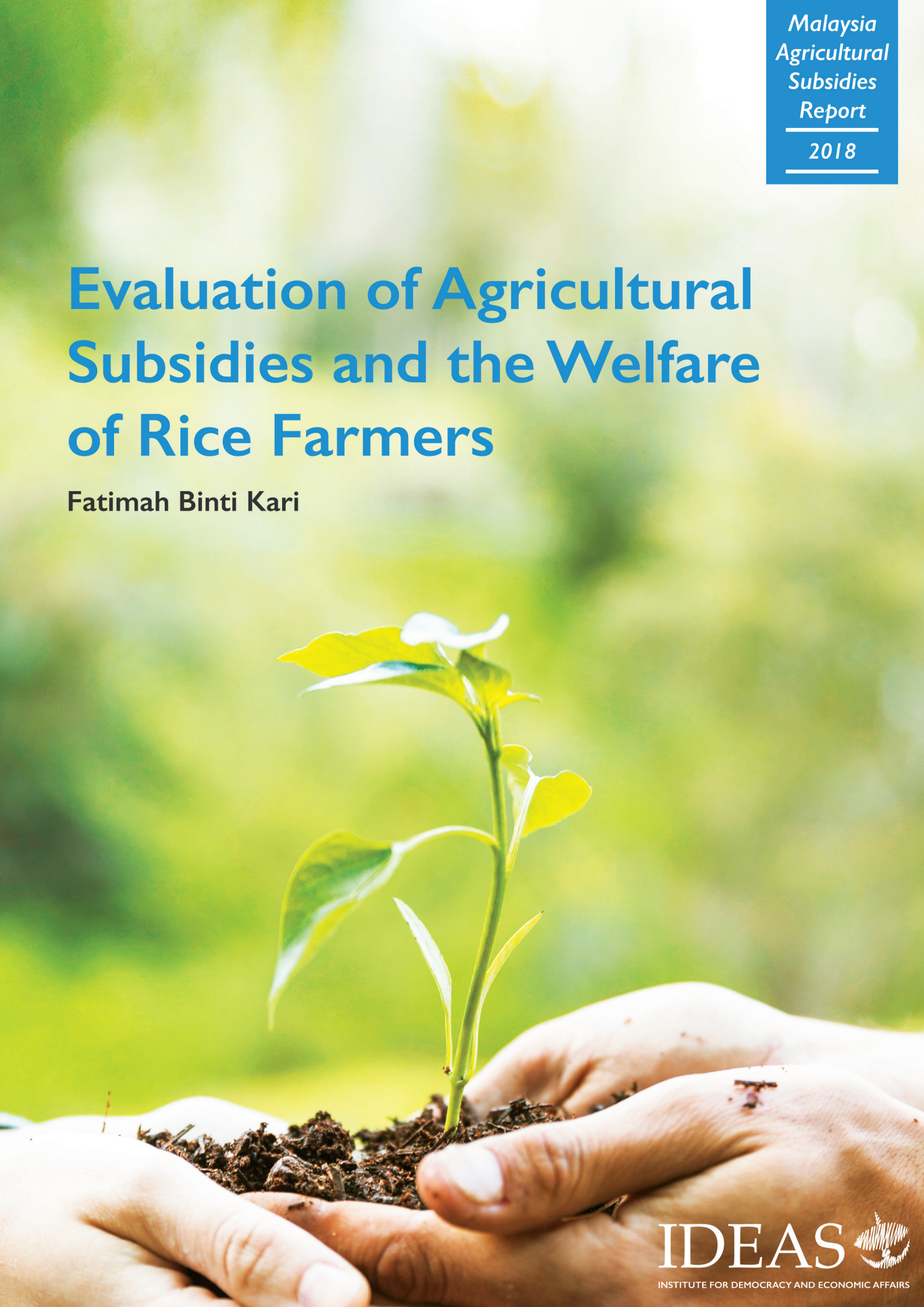
Malaysia Agricultural Subsidies Report 2018

Evaluation of Agricultural Subsidies and the Welfare of Rice Farmers

Fatimah Binti Kari



IDEAS
INSTITUTE FOR DEMOCRACY AND ECONOMIC AFFAIRS

IDEAS
INSTITUTE FOR DEMOCRACY AND ECONOMIC AFFAIRS

First published in December 2018

ISBN: 978-967-16674-0-8

Published by:
IDEAS Policy Research Berhad
The Lower Penthouse
Wisma Hang Sam, 1, Jalan Hang Lekir 50000 Kuala Lumpur

www.ideas.org.my
Reg №: 1219187-V

Text editing: Low Yi Jun
Design and layout: Norhayati Murni Misran
Cover and photos are downloaded from: www.freepik.com

Table of Contents

Profile

PROFESSOR DR. FATIMAH KARI earned a Bachelor's degree from National University of Malaysia (UKM), a Master of Economics from the University of Leicester, UK and a PhD (Economics) from Mississippi State University, United States. She is formerly the director of the Centre for Poverty and Development Studies (CPDS), University of Malaya, former head of Department of Economics, former Deputy Dean of Undergraduate and Post Graduate, Faculty of Economics and Administration, University of Malaya. She has published and presented many scholarly papers in the area of Environment and Poverty, Poverty Indexing and Environment and Growth. She has been a consultant for several consultancy project sponsored by the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC), Ministry of Water, Land and Natural Resources (KATS) and Economic Planning Unit, Prime Ministers Department, UNDP, Malaysia, Johor Corporation and Ministry of Communication and Multimedia, Malaysia. Dr. Fatimah Kari has published in several index journals such as Energy Policy, Energy, Energy and Environment, Journal of Transportation, Asia Pacific Economy, Social Indicators Research, Journal of Environmental Management and Journal of Development Studies.

Acknowledgement

I wish to thank the management of Muda Agriculture Development Authority (MADA) and Integrated Agriculture Development Barat Laut Selangor (IADABLS) who facilitated our research into the farming communities of Kedah, Perlis and Sekinchan. A great deal of appreciation also goes to the farmers and institutional officers who participated in our interviews and focus group discussions.

I would also like to extend my sincere gratitude to the reviewers, Dr Rospidah Ghazali and Dr Ng Boon Kwee, for their valuable insight and contribution.

I would also like to thank the team from IDEAS and my research team for their contribution and support throughout the entire process. I would like to thank Wan Ya Shin and Azam Wan Hashim for managing and coordinating the project. My heartfelt thanks to my research assistants, Dr Mohd Khaled Saifullah, Muhammad Siraj Abdul Aziz and Nur Annaty Mohd Jamil for their assistance with the research, data processing and writing of the report. I would also like to thank the enumerators: Annaty Mohd Jamil, Wan Ya Shin, Azam Wan Hashim, Muhammad Siraj Abdul Aziz, Isabel Loke, Kew Li Wen, Wan Shu Huey, Lee Shee Lan, Chan Jia Pei, Christina Chin and Ler Jing Wen for their efforts with the data collection. Thanks to colleagues from IDEAS who have provided editorial and operational support.

Executive Summary

Malaysia's paddy and rice sector is one of the most assisted and subsidized industries within the country, which has severe implications on the cost of rice production as well as the productivity of the industry. The government is faced with a challenging sectorial objective to balance between national food security, farmer welfare and low consumer prices. With the paddy sector's stagnating productivity growth and the subsidy programs presenting an ever-increasing fiscal burden, there is a call to review and recalibrate how we approach these challenges.

In 2018, IDEAS conducted a research study of 125 interviews with paddy farmers from two major granary areas, MADA and IADABLS, to explore the efficacy of subsidies in Malaysia's paddy sector in improving farmers' welfare. Additional data were collected through focus group discussions with farmers and institutional officers to cross-reference the data collected. This Policy Ideas presents the findings of the study and the impact that agricultural subsidies have on farmers' yield, income, cost and behavior. The results show that:

- The elder generation continues to be involved in rice farming activities, which has serious implications on the long-term sustainability of the industry as elderly farmers tend not to be involved on a full-time basis in farm management, which leads to lower productivity and higher cost.

- Farmers do not know the specific roles of the various types of subsidies that they receive. Respondents found it difficult to relate to various subsidy schemes except regular programs related to fertilizers, pesticides or improved seeds, which are easily recognized by the farmers. Thus, a significant information gap exists in farmers' awareness on the programs, which calls for a complete review on how each program is to be rebranded.

- Although a majority of farmers considered the quality of subsidized agricultural inputs to be good, several concerns were raised, including: the suitability of fertilizers with the farm soil type, the subsidized pesticides creating a secondary problem such as new diseases, the timing of delivery for subsidized inputs, and the quality of subsidized inputs being inferior to those available in the open market.

- A majority of responses indicated that there were no significant short- to medium-term effect on farm acreage, yield, income nor productivity as a result of an increase in the producers' price support scheme (SSHP). The negligible effect may be due to the deteriorating quality of the land from intensive use of fertilizers, pesticides and other chemical-based input and geo-physical factors that affect the land productivity.

- Input subsidies in fertilizers have led to the continued dependence on chemical-based inputs, which leads to the degradation of soil quality and the increasing fertilizer use needed to maintain yields. Almost half of the farmers interviewed did not use organic inputs due to the cost of organic inputs, the lack of subsidies for organic fertilizers, and the uncertainty about the benefits associated with organic inputs.

- In many cases, subsidized inputs (fertilizers and seeds) end up in the hands of unproductive farmers, those without required resources (e.g., land and labour), or productive, but resource-rich, farmers. This results in the crowding out of some commercial input demand, which is a displacement that has a negative impact.

- Government intervention in the input and output markets has led to the distortion of both markets. Such market control has created structurally weak input and output markets that has negatively affected the local rice industry and stifled the effort to achieve self-sufficiency and food security in Malaysia.

Introduction

Since the 1960s, Malaysia's rice sector has gone through significant transformational changes due to market and policy interventions. Malaysia's national policy on the rice sector has been driven by two primary pillars: improving food security measures and addressing poverty within rural areas. As such, the national policy mandate had a strong emphasis on self-sufficiency goals on the back of heavy public investment in the rice and paddy sector.

This sector plays an important role in ensuring that the national food supply is sufficient to meet the basic needs of Malaysian citizens. In 2015, Malaysia's total paddy production was 2,741,470 metric tons (MT) and rice production was 1,767,126 MT (Sirin, 2017). On average, Malaysia's total rice imports is around 700,000 – 900,000 MT per year. In 2016, the total importation of rice into Malaysia was valued at US$377 million, nearly 65% of which was the long-grain variety of fragrant white Jasmine rice from Vietnam and Thailand (USDA Foreign Agricultural Services, 2017). In 2016, Thailand and Vietnam contributed more than 70% of the rice imported into Malaysia with a total volume of 675,000 MT, valued at US$186 million and US$91 million, respectively. The UN Food and Agriculture Organization (FAO) has forecasted a higher level of rice imports for Malaysia in 2018 at 950,000 MT, compared to 822,000 MT in 2017. By 2025, the amount is expected to further increase to 1.27 million MT (Ali, 2017).

Over the last decade, Malaysia's paddy and rice production recorded only a modest increase, from 1.36 million MT in 1993 to 1.76 million MT in 2017. Meanwhile, the level of domestic consumption has increased faster as compared to domestic production. Such a diverging trend has created an increasing reliance on importation as domestic production faces structural constraints, which has implications for the nation's future food security and self-sufficiency level with regard to food crops such as rice. In order to ensure a sufficient supply of rice in the market, the Malaysian government maintains and a stockpile of 20% of the total rice supply, which is kept separate from total domestic consumption (Fatah, 2017).

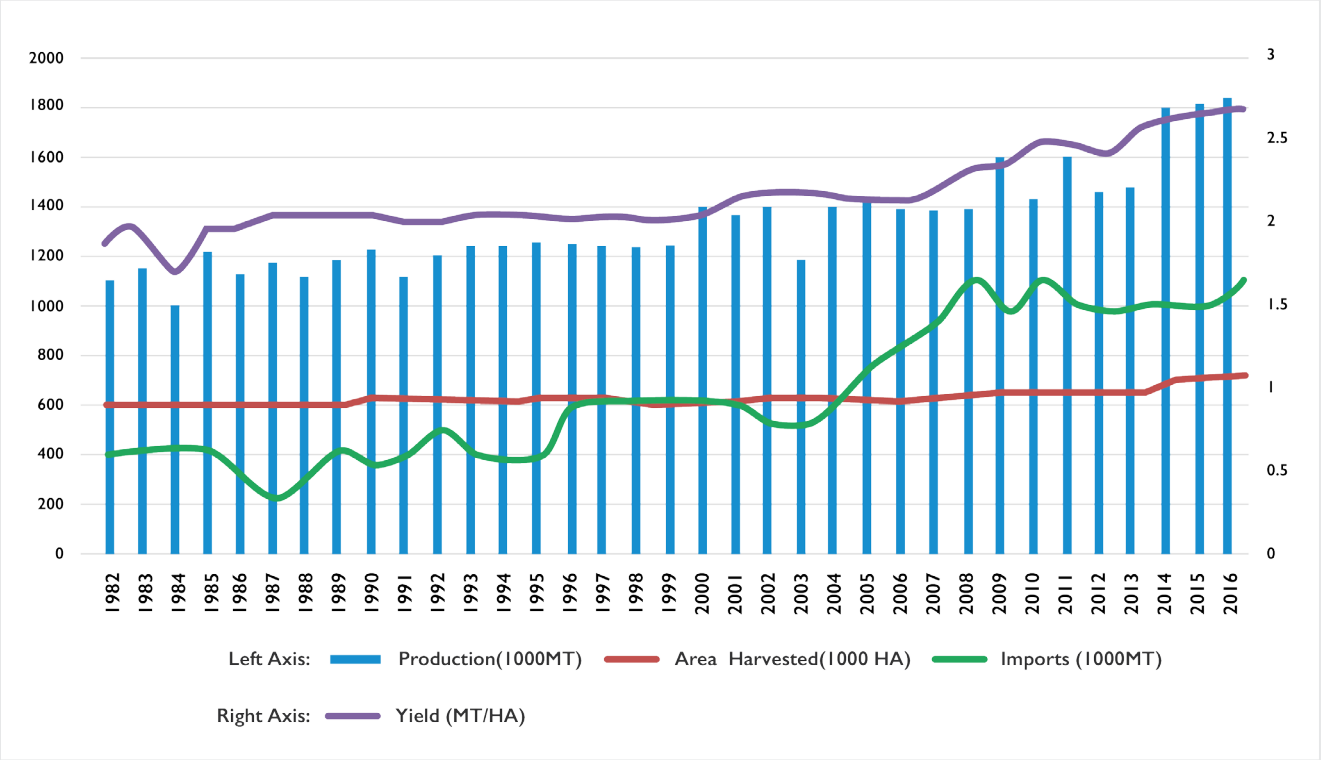
Admittedly, Malaysia's rice sector is one of the most protected industries in the country and such a policy stance has severe implications on the productivity of the industry as well as the cost of production. Additionally, the growth of Malaysia's rice market structure emerged from institutional and market influences, which has had significant impacts on the welfare of both consumers and farmers. This report attempts to look at the sectoral growth of the industry and its impact on rice farmers, who are considered among the most marginalized groups where poverty rate is among the highest in the country (Malaysia, 2010).

Production, Consumption and Yields

Malaysia has always been a net importer of rice. In 2016, the country recorded an annual average import of about US$340 million and a net negative trade balance of US$3,882.20 (UM Comtrade & Khazanah Research Institute, 2018). Domestic production has been increasing at a moderate rate, whilst domestic consumption has been increasing at a faster pace (Figure 1). As rice consumption surpasses rice production in Malaysia, imported rice plays a vital role in closing this gap.

There is a growing concern related to food security and the nation's ability to be self-sufficient in its rice production, mainly due to high rice production costs, limited rice production capacity and dependency on rice imports (Khazanah Research Institute, 2018). Given limited production capacity and a high cost structure, the government aims to increase domestic production through various forms of intervention within the sector. Many have argued that such measures are necessary to attain a high degree of self-sufficiency as well as to protect the welfare of consumers and producers (Tey, 2010; Athukorala and Wai-Heng, 2007; Najim et al., 2007; Dano and Samonte, 2005). However, even with the high provision of government support to stimulate rice production, productivity in the sector has improved slowly; the nation has only produced between 65% to 70% of total domestic consumption over the years (Ali, 2017). In 2015, total rice production grew only marginally by 0.87%, of which, 0.52% came from yield improvements and 0.32% came from the increase in area harvested (Ibid,15).

Figure 1: Production, Import, Area Harvested and Yields (1990-2016)



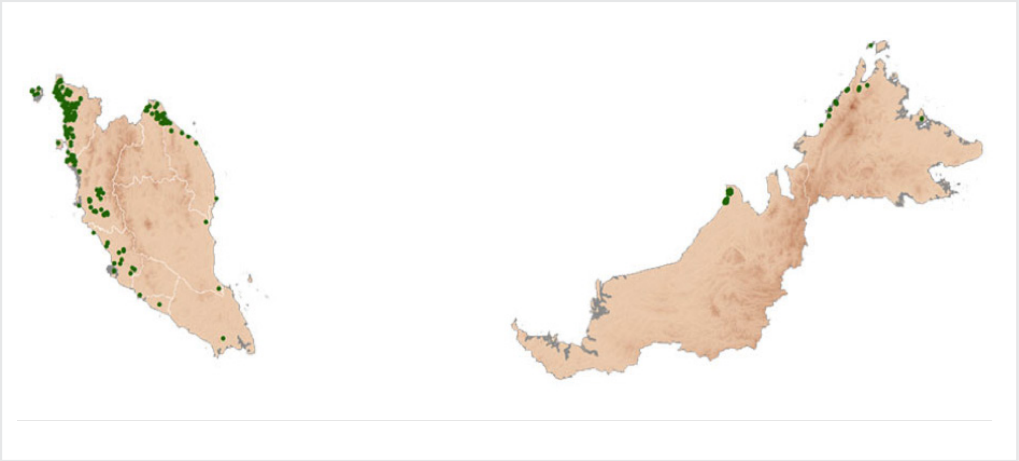
Source: Ali (2017)

Structure of the Paddy Industry in Malaysia

Paddy is the most assisted crop in Malaysia (Athukorala and Loke, 2009). The government provides assistance for the production of the crop in the form of guaranteed minimum prices, a price subsidy scheme, a fertilizer subsidy scheme, credit facilities, research and development (R&D), irrigation, as well as management and extension services (Athukorala and Loke, 2009). In 2013, the government allocated RM563 million for the Paddy Production Incentive Scheme; RM528 million for the Price of Rice Subsidy; RM480 million for the Paddy Price Subsidy Scheme; RM465 million for the Paddy Fertilizer Subsidy Scheme; RM85 million for the Certified Paddy Seed Incentive and RM80 million for the Yield Increment Incentive (WTO, 2014). According to Malaysia's 2018 Budget report, the government will provide RM2.3 billion for aid and incentives, such as input and price subsidies, and almost RM500 million to improve irrigation infrastructure in agricultural areas.

The paddy industry has gone through significant structural shifts, but technological adoption occurs at a slow rate, with current production methods remaining primarily conventional. Government support remains strong, however, as the paddy industry provides crucial employment, income and socio-economic development for the rural low-income areas of Malaysia. Indeed, paddy and rice have risen up to be the main food crop amongst other commercial crops, such as palm oil and natural rubber, which have dominated the agricultural landscape in Malaysia. The role of other mono-crops, such as cocoa and pepper, have diminished as they do not receive much support through public funding or R&D, and scale of production has reduced (Ali, 2017; Fatah, 2017). Nevertheless, in terms of land use, rice farming areas occupy only 8% (465 thousand hectares) of the total agricultural land of the country, while other food crops, such as coconut, fruits and vegetables, account for about 10% of agricultural land (Fatah, 2017).

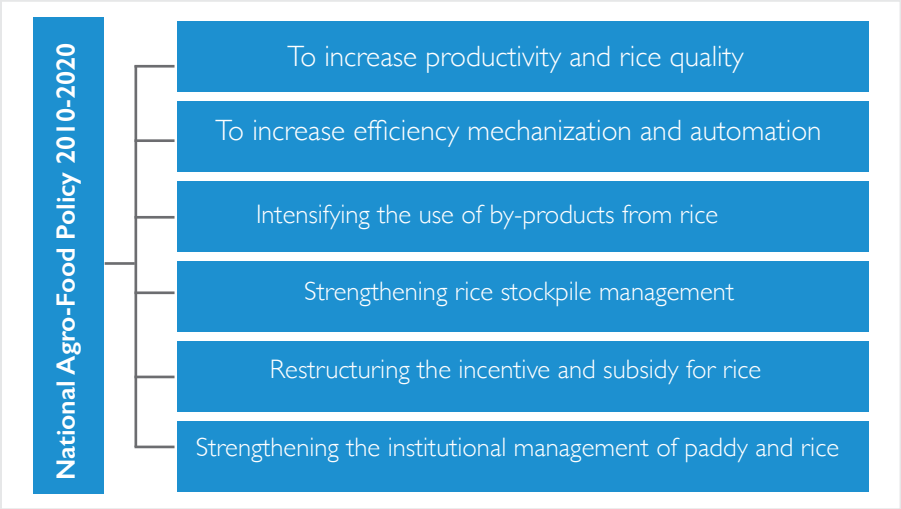
Figure 2: Paddy Planting Area



Source: Ali (2017) and Khazanah Research Institute (2018)

Figure 3 shows the six strategies for the paddy industry framework that the Malaysian government employs under the National Agro-food Policy 2010-2020 (NAFP 2010-2020):

Figure 3: Six strategies of NAFP 2010-2020



One of the main thrusts of the NAFP 2010-2020 is to "restructure the incentive and subsidy for rice," which remains the key issue in strengthening the domestic supply chain of the paddy industry. The government uses a supply chain management approach to fulfill the six strategies of NAFP 2010-2020 and to manage the strengths and weaknesses of the overall paddy industry (Wong et al., 2010). A brief review of the rice industry supply chain highlights the network of organization that coordinates the upstream and downstream activities of rice production, which leads to market efficiency and enhancement of consumer and producer welfare (Yong, 2008).

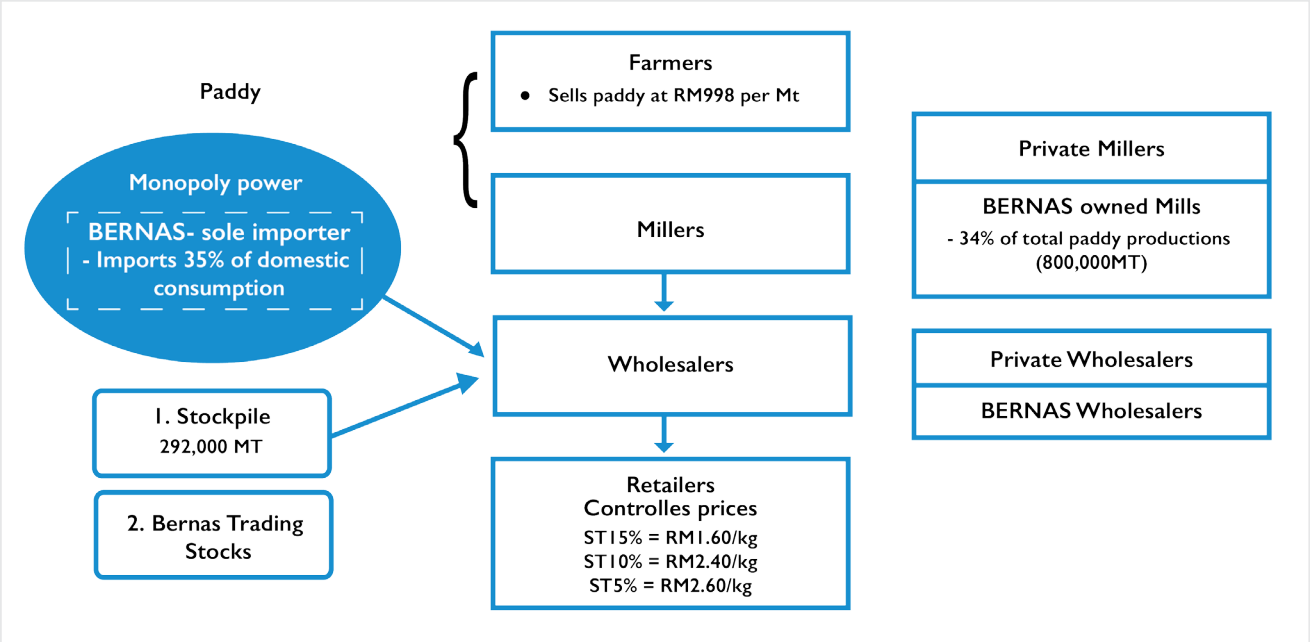
The structure of the rice market is characterized by many producers supplying to a concentrated number of distributors, who then sell to a huge number of consumers. This structure gave rise to an imperfect market where the off-farm market distribution remains inefficient and skewed towards sellers rather than producers (Suasih and Yasa, 2017; Arshad, 1982). The price transmission elasticity of 1.23 indicates that the rate of price change at the rice retailers' level is greater than the rate of price change for dry grain (GKP) at the farmers' level (Suasih and Yasa, 2017). The market faced is imperfect or uncompetitive, i.e. there is a monopoly and oligopoly in the distribution system and the prevailing distribution system is inefficient.

A similar observation made by Arshad (1982) explains that market integration and access are critical and important aspects to farmers. Linking farmers to markets is one of the main keys to promoting agricultural growth and reducing poverty. Smallholder competitiveness, facilitation of market entry, improved market access, and the establishment of efficient value chains are critical factors in agricultural development (FGD, 10th October 2018).

Over the years, Padiberas Nasional Bhd's (BERNAS) corporate strategies have negatively affected growth, especially in terms of acquisition of control and ownership. This has resulted in the failure of the paddy industry to achieve the sectoral objectives underlined by the government's national policy on self-sufficiency, as well as that on Malaysia's security and poverty reduction among paddy farmers. BERNAS' role in influencing Malaysia's rice industry structure has been quite significant in explaining the inefficiency in the rice market. Davidson (2018)

argues that the distorted market is due to BERNAS' import monopoly; political financing in Malaysia continues to forge links between big businesses and political power (Figure 4). Such political capital has resulted in lucrative returns where BERNAS—as a monopoly—earns a profit margin of RM700 per ton from imported rice (The Edge, 12th June 2018).

Figure 4: Structure and Supply chain of paddy industry



Source: Vengedasalam et al. (2011)

Despite the need to strengthen the industry supply structure, various impending problems have affected the efficiency of the domestic market. This includes market imbalance, mismatch between demand and supply, higher cost of production and the government regulatory structure. A study has indicated that an integrated supply chain in the industry could be the solution to addressing weaknesses in the input markets as well as the distribution of subsidized inputs to farmers (Yong, 2008). As such, the market shock in 2008 that led to a mismatch between demand and supply is very much embedded into the need to create an efficient supply chain that is guided by a pragmatic public policy framework. Davidson (2018) explains that this mismatch is due to the structural weakness which continues to decay as Malaysia's current rice policies appear to be caught up in a contradiction between the government's efforts to raise the domestic production of rice and its continued support of BERNAS' monopoly on rice imports (Davidson, 2018).

In mid-2018, however, the ruling government that came into power after a landslide victory in May 2018 announced key reforms to BERNAS' control of the license to import rice. Some other related reforms are expected to be introduced following this revision. Many observers see the monopoly as necessary, but it is also necessary to formulate a well-thought-out and comprehensive plan to ensure fair trade and healthy competition among all players (The Edge, 11th June 2018). An over-regulated market will cause the industry to lose its dynamic capability. Moreover, the regulation deters social capital building between the cluster and the formal institutions of the government. Also, the presence of government-owned companies that crowd out competition among other industry players shows that the government plays a conflicting role as a supervisory body, policymaker and trader (Ng et al., 2017). Despite the government's formal announcement on the elimination of the BERNAS' monopoly, BERNAS' ownership has continued to be controlled by dominant personalities. Thus, the

new government under the Pakatan Harapan coalition will need to carefully analyze and introduce a new framework for the paddy and rice industry, following the dismantling of BERNAS' monopoly in the sector (The Edge, 11th August 2018). According to the latest media report by the Ministry of Agriculture (MOA), Minister Salahuddin Ayub has stated that "the government is ready to take over the function of BERNAS after the termination of the concession in 2021, as this is crucial to ensure any impact on the country's rice industry can be addressed accordingly" (The Edge, 17th October 2018). Nevertheless, some remain skeptical as to how the actual reforms will be pursued. It is argued that although the new administration appears keen on rejuvenating pre-existing agricultural schemes, factors such as lack of sectoral prospects, federal budget constraints, and moral hazards stemming from long-term administrative de-concentration may impede the progress of agricultural reforms (Pakiam, 2018).

Objective of the study

This study explores whether or not government assistance is setting up the example of providing perverse incentives to a particular part of the population. Notwithstanding the political sensitivities of this topic, this project is of national interest as it can provide a balanced examination of the negative impacts of reliance on government intervention in a free market economy.

Therefore, the main objectives of this study are:

1. To assess the impact of government subsidies and assistance on the attitudes of farmers;
2. To explore differences, if any, in terms of attitude and mindset among the farmers who receive subsidies and assistance based on the two granary regions of MADA and IADABLS;
3. To understand the profile and socio-economic status of the farmers who receive subsidies and assistance;
4. To identify recommendations that would provide support and assistance to farmers without resulting in the provision of perverse incentives; and
5. To inform revisions of subsidy schemes in attaining a more competitive and sustainable paddy sector.

Research Questions

Based on the selected objectives, this study will address the following research questions:

1. What is the impact of government subsidies and assistance on the attitudes of farmers?
2. What are the differences in terms of attitude and mindset among the farmers who receive subsidies and assistance based on the two granary regions of MADA and Sekinchan IADABLS?
3. What are the profiles and socio-economic statuses of the farmers who receive subsidies and assistance?
4. What are recommendations that would provide support and assistance to farmers without creating perverse incentives?

Subsidy Policy in Rice Industry

Malaysia, like other countries, provides a high level of subsidies for food, energy, education, and other sectors of the economy in order to improve poor households' access to various commodities, primarily food and energy. This is also to reduce the level of poverty in Malaysia.

Although this can bring social benefits through access to affordable energy and employment in the economy, it may also carry economic and environmental costs. In 2013, government expenditure on subsidies was nearly 16% of the government operating expenditure, which was about 5.1% of the total GDP (Solaymani et.al., 2014). In addition, these subsidies are costly for the government because an increase in energy prices also increases the cost needed in order to alleviate the negative effects of the shock on energy prices. Malaysia's subsidy rate for local rice production is among the highest in the region, as countries like Thailand and Indonesia pay their farmers only 10% of what the Malaysian government pays to its paddy farmers (NST, 28th June 2018).

Despite the high subsidy payouts, as reported by the Malaysia Productivity Blueprint, the productivity of the agro-food sector is plagued with several factors such as (a) insufficient focus on value-adding and disconnection along the value chain; (b) multiple small producers with low levels of productivity; (c) issues with quality and standards across the subsector, and (d) slow adoption of technology and modern farming practices. These factors demand immediate attention and they can contribute towards promoting the dynamic role of smallholding and family farms in Malaysia's agriculture sector (Khazanah Research Institute, 2018).

It is feared that Malaysia's dependence on foreign countries to supply food resources will have a negative impact on the country's economic growth, especially in the value of the ringgit, when total imports exceed total exports. Malaysia needs to consider geopolitical factors because, in the event of tension in relations with a supplier country, the country's food supply may abruptly plunge into a crisis. This also makes Malaysia less viable in terms of its own food supply. Hence, the government gives full priority to the implementation of food sovereignty policies as a strategic move in minimizing dependence on imported food supplies and, simultaneously, raising the socio-economic status of the farmers. Distribution of related assistance, such as subsidized fertilizers and paddy, needs to be continued to ensure that food production costs are regulated and the industry is able to generate profit. Table 1 lists a few types of rice production subsidies and incentives provided by the government.

Table 1: Types of Incentives and Subsidies for Rice Farmers

Incentives / Subsidies	Explanation	Rate
The Minimum Guaranteed Price[1] (HMT)	The minimum guaranteed price is an important step towards addressing the issue of paddy prices and rice in the country. HMT guarantees farmers to receive the minimum profit from the sale of rice deemed reasonable. Increases in the price of rice in the market can be controlled with reserve setting HMT. HMT serves as a scheme to support the farmers' income, which is instrumental in securing basic minimal income among the producers.	1990 = RM 496.10 / metric ton (long rice) = RM 463.00 / metric ton (simple rice) 1997 = RM 550.00 / metric ton 2006 = RM 650.00 / metric ton (beginning 1 Nov 2006) 2008 = RM 750.00 / metric ton (May 2008) 2014 = RM1200.00/metric ton
Rice subsidy scheme[2] (SSHP)	Implemented in 1980 through the Paddy and Rice Board (LPN) and managed by BERNAS since 12th January 1996. The objective of the SSHP is to increase the revenue of farmers living below the poverty line and to ensure the price of rice in the market is sustained at a level predetermined by the government for the sake of consumers.	During the initial stage of implementation, farmers received the price subsidy of RM33.20 per MT of rice metric clean sold on the door factory. 1982 = RM167.00/MT 1990 = RM248.10/MT 2016 = RM300/MT
Federal Government Paddy Fertilizer Scheme[3] (SBPKP)	Started in 1979 through the Farmers' Organization Authority (LPP). SBPKP's goal is to help farmers reduce the cost of production by encouraging the use of fertilizers as an important input in increasing yields.	12 urea fertilizer bags (20kg/bag) and 5 compound fertilizer bags (20kg/bag) per hectare rice.
Production Rice Incentives[4] (IPP)	It was introduced on 1st March 2007 to help farmers reduce the cost of paddy production	Incentives worth RM240.00/hectare given in two forms, namely, aid for plowing = RM100/ hectare per season; IPP assistance and extra fertilizer = RM140/hectare per season.
Improvement Result Incentives[5] (IPH)	It was introduced on 1st March 2007, aimed at motivating farmers and promoting increase in yield. This incentive is given to farmers who can improve season yield by at least 1%.	This incentive pays RM650 per additional MT as compared to the last season
Production Seeds of Legitimate Rice Incentives[6] (IBPS)	This program aims to ensure all farmers use quality, legitimate rice seeds as a step towards improving production.	An incentive of RM1.03/kg (RM20.60/bag) was paid to rice seed producers and the government has allocated a total of RM75 million under the scheme.

[1] Harga Minimum Tetap
[2] Skim Subsidi Harga Padi
[3] Skim Baja Padi Kerajaan Persekutuan
[4] Skim Insentif Pengeluaran Padi
[5] Insentif Peningkatan Hasil
[6] Insentif Benih Padi Sah

Subsidy: A Drawback

According to World Trade Reports (2006), introducing a subsidy or any other government measure within a perfect market framework renders that market inefficient and welfare-diminishing. If a market is inefficient, any form of government intervention, such as establishing subsidies, may affect economic welfare. According to Kari, Masuud and Saifullah (2017), since 2012, subsidy rationalization has been at the forefront of Malaysia's annual budgets. Steps were taken in light of widening fiscal deficit, which currently represents about 5% of Malaysia's GDP. Three primary objectives of subsidy reforms include:

1. To achieve greater overall efficiency gains where subsidy savings and over-consumption support can be directed to productive infrastructure spending, such as on education, science and technology, healthcare and public transportation;

2. To improve economic efficiency. As we move closer to the market prices, supply and demand become more market-responsive and are then driven by price signals. Transport services and basic food industries can be improved to become more competitive. They will become more efficient as they respond more efficiently to price changes. In sum, non-subsidized prices for goods and services allows resources to be allocated with minimum wastage;

3. To produce a more resilient economy, reinforced by lower fiscal deficit and lower government debt.

Subsidy Rationalization under the Economic Transformation Plan (ETP)

For the last 10 years, Malaysia has been running a fiscal deficit which has grown progressively from RM5 billion in 1998 to a record high of RM47 billion in 2009. This is due to the fact that government expenditure, including subsidies, has been escalating, whereas government revenue has not been able to keep pace with economic growth (Kari et al., 2017). Consequently, the government has had to borrow a lot of money to cover this shortfall. The Malaysian government debt in 1997 was RM90 billion and has grown at a rate of 12% a year to reach a record of RM362 billion in 2009. In addition, in proportion to national GDP, Malaysia is one of the world's highest subsidized countries, utilizing 4.7% of its GDP for subsidies, compared to Indonesia's 2.7%, the Philippines' 0.2%, and the Organization for Economic Co-operation and Development (OECD) country average, which is at 1.5%.

Strengthening the social safety net is an integral part of the authorities' fiscal strategy. Untargeted fuel and food subsidies were regressive as households in the top two quintiles of per capita consumption received 60% of the subsidies while only 3% went to the bottom quintiles. The elimination of fuel and food subsidies can free up resources, which can be redirected to better support the poor. To mitigate the impact of subsidy rationalization and GST, the 2015 Budget called for increased cash transfers to poorer households (those earning less than RM4,000 per month). The authorities are also reviewing overlapping and fragmented cash transfer programs.

Methodology

This study has adopted two main methods in collecting data from active farmers in two major rice-producing regions in Peninsular Malaysia. First, questionnaires were developed and launched in 125 paddy farming communities, which were selected based on two major granary areas at Sekinchan, representing the sub-region under Integrated Agricultural Development Areas Barat Laut Selangor (IADABLS), and four administrative blocks of MUDA Agriculture Development Area (MADA) in the Northern regions. Second, a series of focus group discussions (FGDs) were conducted among the same groups. These FGDs were used to acquire additional information (supplementary to the questionnaire) as well as investigate responses to some of the questions asked in the questionnaire.

Prior to the actual survey, several visits were made to the study areas (confined to Sekinchan) to build the questionnaire as well as to pilot the questionnaire for clarity and ease of understanding. Any variable which was deemed too sensitive to the respondents was eliminated from the questionnaire to allow for maximum cooperation between stakeholders and the target respondents. The sampling frame was based on convenient random sampling, in which the samples were drawn from areas where innovative farming was broadly adopted, as reported by previous studies (Ng et al., 2017; Sirin, 2017).

A study by Sirin (2017) reported that IADABLS (Sekinchan) had achieved a high technology adoption score and this was a reason why IADABLS were chosen for this study. Stratification by geographical region was based on higher rates of innovation practices, as reported by the previous study and suggested by Ng et al. (2017). Selection of the sample was based on the name list provided by the IADABLS office, which also indicated the farmers who were willing to participate in the survey. It was proposed that farmers were selected on a random basis with all farmers having an equal likelihood to be chosen to participate in the survey. Convenient sampling was also adopted in consideration of farmers' farming commitments. As the questionnaire and FGD session were carried out at the IADABLS office, it involved work and travelling costs incurred to respondents. A total of 25 samples were drawn from Sekinchan to complete the questionnaire followed by face-to-face interviews. From 20 samples, 5 of the samples were subsequently rejected due to incomplete information and problems associated with non-response bias.

The MUDA region was chosen due to its importance as the main granary area for rice production in Malaysia. Prior to the survey and FGD session, a discussion was held with the MADA officers to introduce the study and the assistance needed to launch the study. We proposed the survey to be done in 4 blocks in which the blocks were chosen in terms of the number of farmers in each administrative block. The same principle of convenient sampling was adopted such that participating farmers were randomly selected by the MUDA officers as this assured the farmers' willingness to participate in the survey and FGD session. The 4 administrative blocks include Kayang (MADA B-I), Kodiang (MADA A-II), Alor Senibong (B-III) and Pengkalan Kundur (B-IV). The MUDA regions, which cover the state of Kedah and Perlis, have a total of 49,260 farmers (www.doa.gov.my; http://www.mada.gov.my/). No-show respondents were randomly replaced and the selection was based on convenience in terms of time availability, cost and willingness to participate in the survey. A total of 105 samples were drawn from the MUDA region, which represents about 3% of the total population of farmers in that region. Sampling bias exists as the locations were confined to administrative blocks, but this was done to enable enumerators to carry out the survey and FGD within a given time with cost as the limiting factor. The small sample size may be the biggest drawback in the sample representation, but this weakness may be mitigated by the fact that the interview was

based on face-to-face interaction and each interview lasted for 30 to 40 minutes. This provided ample time for researchers to obtain additional details, crosscheck data, as well as address nonresponse problems associated with the questionnaire. In addition, FGDs were conducted following the in-depth interview to validate some of the key issues addressed in the questionnaire.

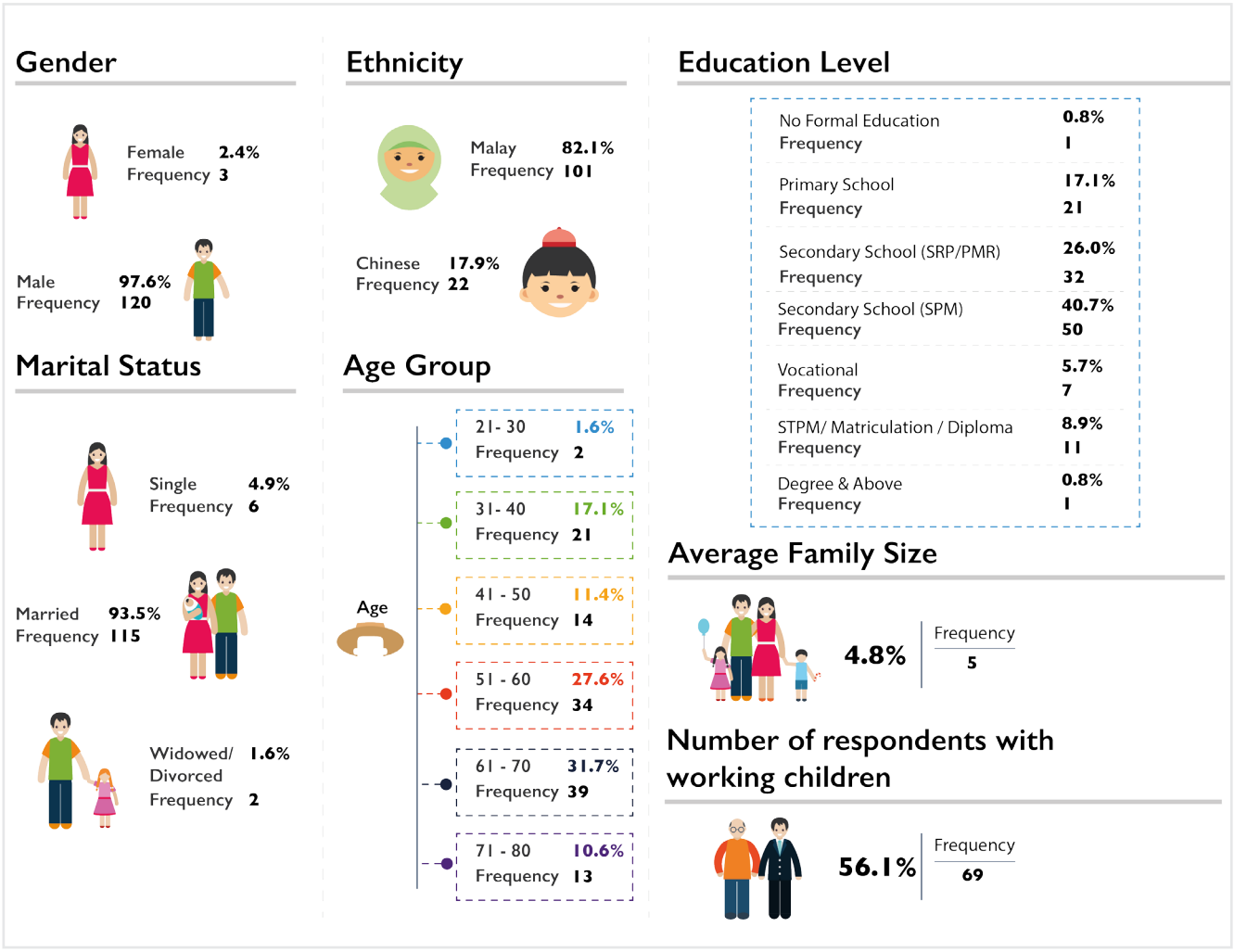
The questionnaire was designed to address the various objectives of the study based on (i) quantitative information and (ii) open-ended questions. The data acquired were analyzed based on normal descriptive statistics and a simple behavioral model was developed to address detailed aspects of the impact of subsidies on farmers' behavior. FGDs were conducted after each interview to verify certain questions in the survey as well as obtain additional information on farming activities among the farmers. The FGD session was structured to cover several topics, including the impact of subsidies, cost of production, profitability of farm operation, disease and pest issues, as well as current challenges affecting the farm yield, such as risk and production loss due to climate change.

Results and Findings

Basic Socio-demographic Profile of the Respondents

The study is based on a sample of 125 people made up of 97.6% male and 2.4% female paddy farmers (Figure 5). In terms of marital status, about 93.5% were married while 6.5% were either single, divorced or widowed. The sample consisted of 82.1% Malay farmers and 17.9% Chinese farmers. About 69% of farmers were above 50 years of age, and the sample had an average age of 55. The lowest age was 25 while the highest age was 75, hence indicating that the elder generation continues to be involved in rice farming activities. This has serious implications on the long-term sustainability of the industry as elderly farmers tend not to be involved on a full-time basis in farm management, leading to low productivity and higher cost (FGD, 8th August 2018). In terms of education, 40.7% of farmers attained SPM level education while 26% attained PMR/SRP level education. The basic profile detailed above may explain the behavior and attitude of the farmers towards government programs, especially in terms of subsidies, handouts, extension as well as their perception towards the future prospects of paddy farming activities. About 40.8% of farmers reported a family size of 5 persons while 12.8% of them reported a family size of 6 to 8 persons. The baseline data also indicated that a sizeable percentage of the respondents in the sample have working children who are employed with a full-time job.

Figure 5 : Basic Socioeconomic Profile of Respondents

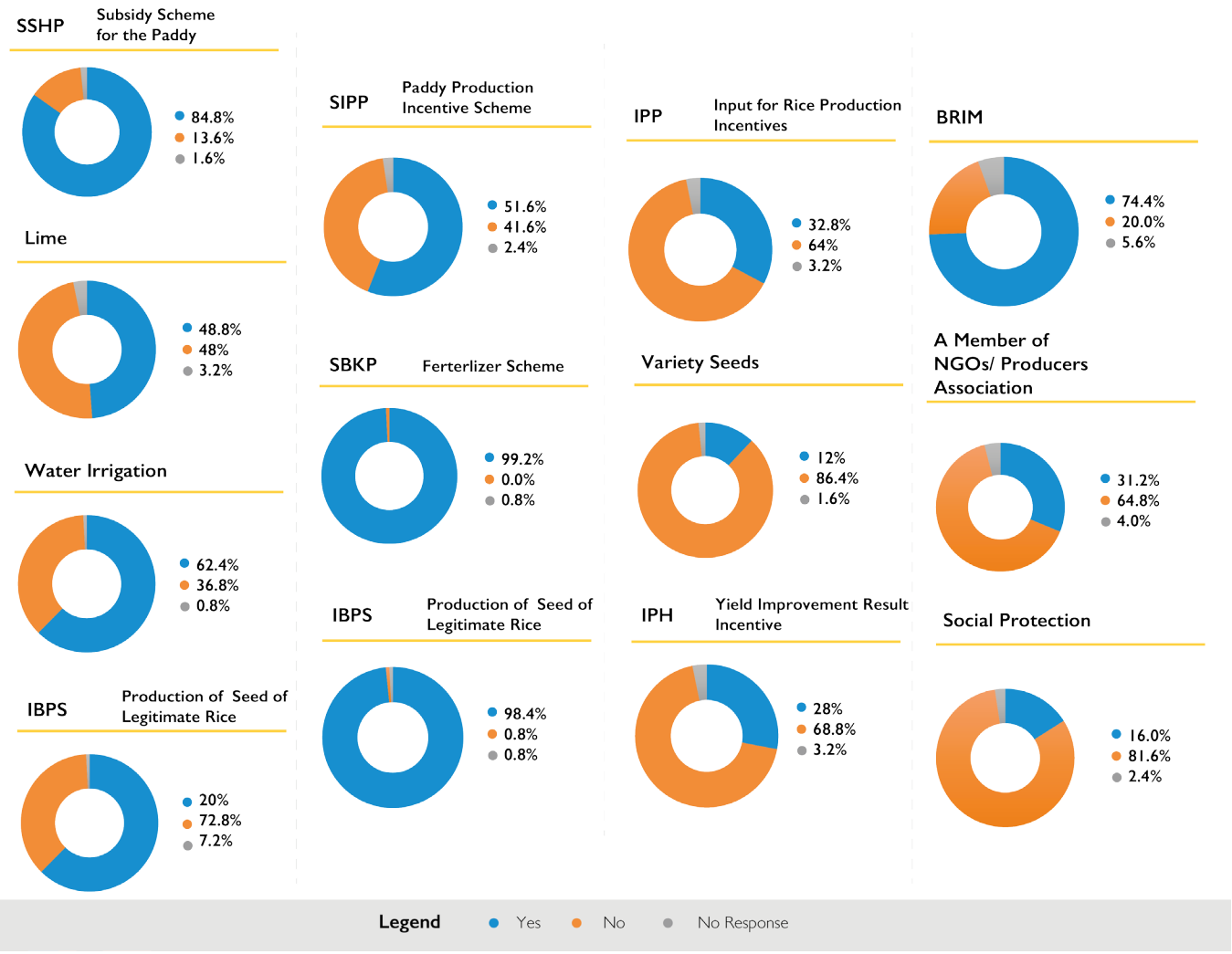


Subsidy Program: Availability and Accessibility

The farmers were asked about the types of subsidies they have received. For reference, the list of subsidies was obtained from the Ministry of Agriculture (MOA) website. Figure 6 indicates the number of farmers who have received the various type of subsidies. Surprisingly, quite a significant number of the respondents did not receive price support or pesticides subsidies. However, based on FGDs with the farmers as well as a cross reference with MADA and IADABLS (Sekinchan) officers, almost all farmers received basic subsidies for agricultural inputs (fertilizers, pesticides and seeds) and the price subsidy scheme (SSHP), which was paid through vouchers and direct bank transfers. Based on Figure 3, except in the case of seed variety, the numbers of recipients for almost all of the programs were fairly high, especially for SSHP, SBPKP and pesticide. The disbursement of all the other incentives and subsidy support was fairly balanced in terms of recipients and non-recipients.

In terms of social capital, a significant number of farmers (64.8%) did not belong to any NGOs or associations that were related to the welfare of the community at large, or the specific needs of the farmers. Feedback from FGDs also indicated that the farmers do not know the specific roles of various types of subsidies that they receive. In our field interview, respondents found it difficult to relate to various subsidy schemes except regular programs related to fertilizers (SBPKP), pesticides or improved seeds, which are easily recognized by the farmers; thus, it is doubtful that farmers know the objective of each program, especially as some subsidy programs may not be easily identified by the respondents. Thus, a significant information gap exists in farmers' awareness on the programs, which calls for a complete review on how each program is to be rebranded. In addition, the subsidy programs may prove difficult to assess in terms of their impact and effect, both in the long and short run (MARDI:Laporan Akhir Kajian Impak Dasar Bekalan Makanan/Skim Insentif Pengeluaran Padi, 2018).

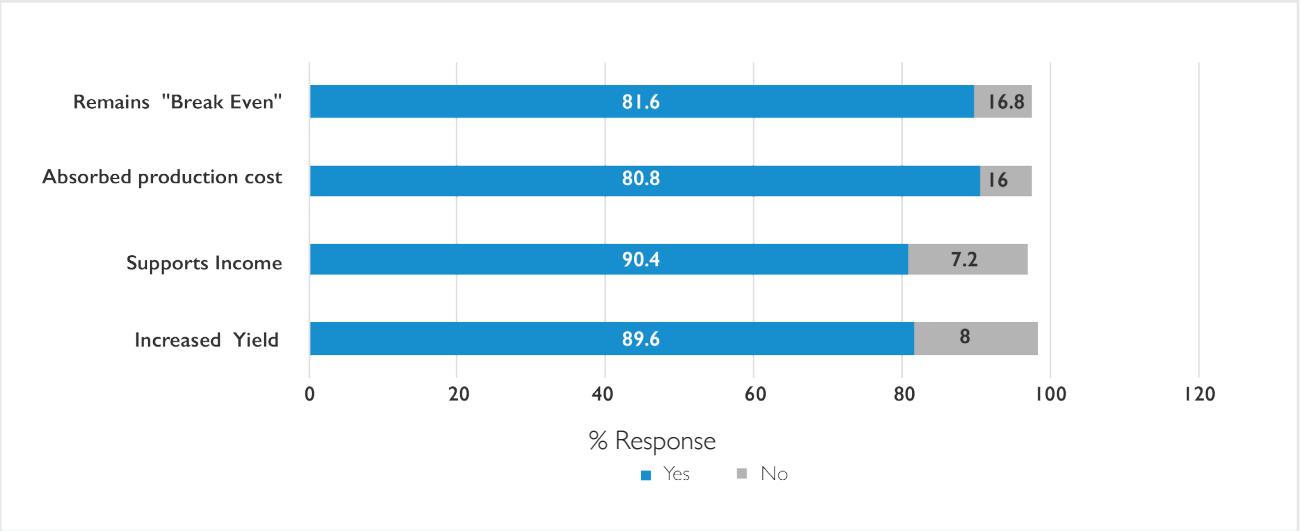
Figure 6: Types of Subsidies and Number of Recipients



Perceived impact of the subsidy scheme

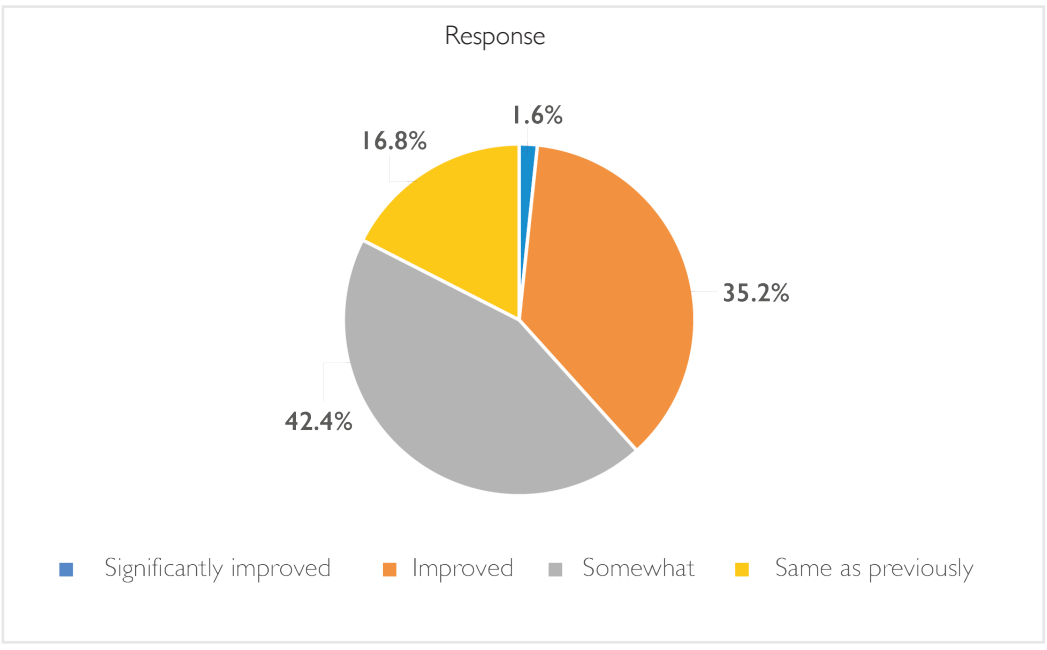
Farmers were asked about their perception of the general impact of all the types of subsidies that they have received. Based on the survey, about 82.9% of farmers agreed that the subsidy schemes have increased yield while 17.1% reported otherwise. Next, 83.5% of respondents agreed that subsidies support their income when the prices are low, while 16.5% disagreed (Figure 7). Similarly, 92.6% reported that subsidies absorb farmers' production cost, while 7.4% rejected the statement. Of 105 respondents, 91.8% admit that subsidies allow them to break-even while 8.2% said otherwise. Based on the FGDs, escalating cost and age represent the most commonly used reasons for farmers to quit farming or believe that rice farming is no longer sustainable for the future (FGD, April and July 2018).

Figure 7: The Impact of Subsidy Programs on Farmers' Livelihood



The survey asked about the farmers' general perception towards the impact of the subsidy program on farm productivity. Above 80.9% of the respondents reported that the program has improved or somewhat improved their productivity, while 1.7% believed that it has significantly improved their productivity, as opposed to 17.5% who perceived that the situation has not changed (Figure 8). While the subsidy program has decreased operational costs, there are other reasons, which are considered risk factors, that have affected farmers' yield over the years. This includes the risk associated with climate change and diseases, while cost continues to rise due to increases in the price of inputs.

Figure 8: Farmers' Perception on the Impact of Subsidies



Issues Affecting the Farmers Welfare

Discount Rate

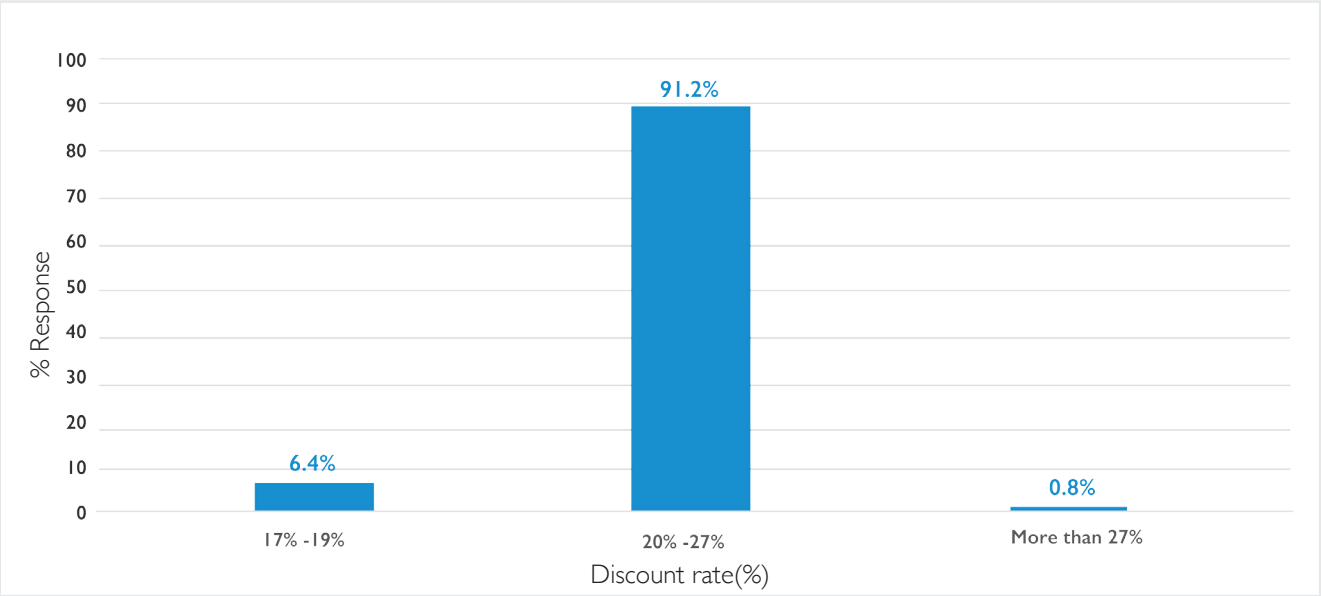
An earlier study found that the market will continue to be imperfect and inefficient as the existence of a credit-tie will defy the benefits of the competitive market from being passed on to the farmers due to excessive unjustified deduction by paddy buyers and other market malpractices carried out by the traders (Arshad, 1982). The farmers are partly to be blamed for producing poor quality paddy, which forces buyers to impose an excessively high discount rate. However, the government's ceiling price for rice coupled with market instability forces traders to maintain their squeezed profit margin (during periods of excessive supply of rice) through excessive deduction. This is exacerbated by an already inefficient grading system.

As such, the issue of discount rate is one consistently faced by the farmers and has affected them significantly. Initially, the discount rate charge was based on impure content of the rice being sold to millers and wholesalers. Farmers have the option to sell the harvest to millers as well as BERNAS. Under the existing arrangement, BERNAS is to buy all the rice sold by the farmers regardless of quality. Off-farm income has been determined by the discounted rate set by the millers/middlemen or BERNAS as the agency responsible to buy the rice which is later sold to the market.

In the FGD, farmers expressed their concerns on the arbitrary manner in which discount rates are determined; however, the question of the quality of rice remains a fundamental determinant in the rate of discount being given. Farmers' main complaint was on the arbitrary discount rate and the lack of a systematic procedure to determine the discount rate as well as the quality of paddy used to determine the discount rate. As a rule, farmers consider quality as the main criteria for the discount; in earlier years, they were fairly satisfied when LPN (Lembaga Padi Negara) charged a standard rate of 12%. Figure 9 shows that about 92% of farmers reported receiving an average discount rate of 20-27% for paddy sold to the local millers; many of them considered this rate to be unjustified and asserted that it has affect their net returns per harvest (FGD, April/May 2018; FGD, 4-5th July 2018). The main issue, however, is that the market does not have a clear mechanism to determine the exact discount rate being charged as it varies across region, farmers and millers handling and buying the end product. The irregular nature of the discount rate marks down the profit margin received by the farmers and affects their net income received.

This issue could be addressed based on two perspectives. First, there is the need to encourage farmers to maintain the best quality of the product, whereby such quality is determined by the implementation of good farm management practices as proposed by extension units in MARDI, MOA, MADA and IADA. Studies have shown that proper and systematic farm management as well as systematic rescheduling for planting and irrigation enables good yield as well as increases the quality of paddy produced (Ramli et al., 2012). Secondly, the existence of high deductibility in the rice industry reflects the problem of asymmetric information between producers and millers; thus, the design of the pricing policy needs to address the inefficiency of the market structure. The prime consideration is to assure quality rice while looking into parameters such as market information and lowering of post-harvest cost and risk (FGD, August 2018). Thus, the off-farm price for rice is still the main issue and this reflects the distorted market structure of the rice industry in Malaysia.

Figure 9: The Level of Discount Rate (Based on Moisture Content and Impurities) Received by Farmers



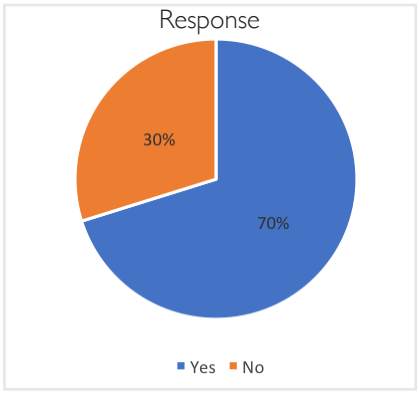
Farmers were asked about the coping mechanisms they adapt to address the issue of discount rates in the off-farm supply chain. Some reported doing nothing while others have continued to negotiate or kept pursuing buyers who could offer the best discount rate on their harvest. In brief, the post-harvest market is basically a buyer's market in the Malaysian rice industry. It would be appropriate if the discounted rates were determined based on the moisture and impurities of the harvest, as the quality of rice produced is instrumental in helping producers to get a fair discount on their product.

Use of quality agricultural inputs among Farmers

Farmers were asked to assess the quality of the subsidized inputs. Consequently, about 70% of them considered the quality to be good, as opposed to 30% who perceived the inputs as being of low quality (Figure 10). Several concerns were raised pertaining to the quality of subsidized inputs, including:

- the quality of subsided fertilizers did not suit the type of soil at the farm;
- subsidized pesticides created a secondary problem such as new diseases; and
- in general, the quality of subsidized inputs are inferior to the quality of inputs available in the open market.

Figure 10: Farmers' Assessment of Quality of Subsidized Agricultural Inputs



The farmers were equally concerned about the timing of delivery for all subsidy programs. While farmers generally support the continuation of the subsidy program, several structural changes were proposed from their perspective, as follows:

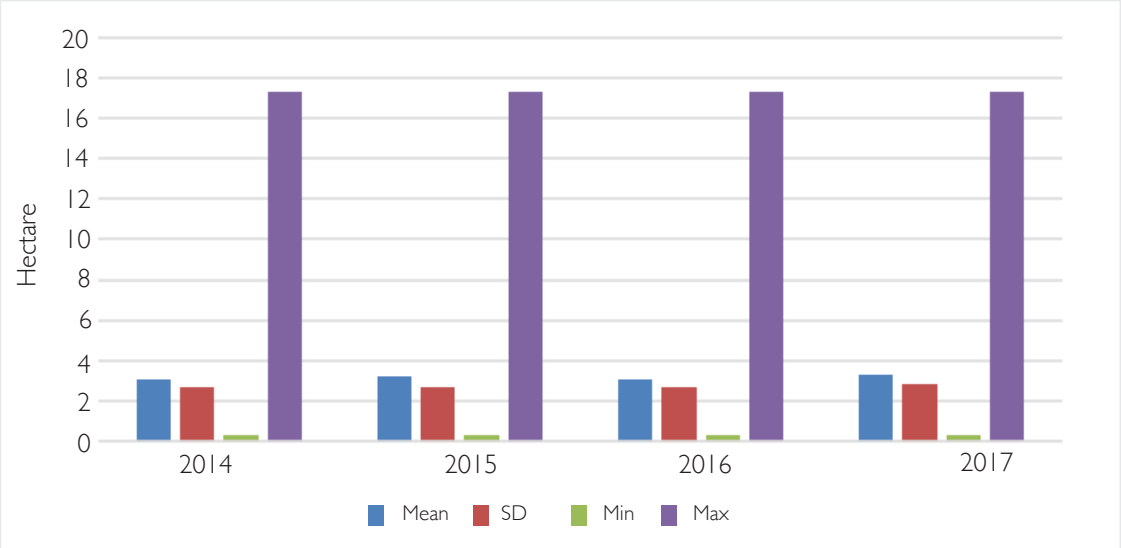
1. There is a need to continuously reevaluate and match the types of subsidized agrichemical inputs to the type of soil used for rice cultivation based on location. In this regard, farmers requested for stronger R&D investment to enable pairings of subsidized inputs based on soil type that would lead to higher yield.
2. The delivery of subsidized agrochemical inputs must be timely to match the planting cycle and the schedule adopted by farmers, and
3. Farmers expressed a strong need for variety in seeds/sprouts and irrigation, which reflects a growing demand for better types of subsidies that could increase productivity and farm yield.

The Impact of Subsidy on Yield, Income[7] and Cost

Yield and cost structure

Based on the survey, from 2014 to 2017, the average farm size was 3.29 – 3.14 hectares with variations between 2.70 and 2.87 hectares (Figure 11). This is in line with the baseline surveys conducted by Amin (1989), Ali (2017) and Ramli et al. (2013). Based on this comparison, the mean acreage has not increased significantly as smaller farms struggle to achieve higher productivity, lower cost and economies of scale. Similarly, average minimum and maximum differences in acreage differs by 17 hectares, which indicates a huge difference in farm size between smaller and larger farms in the two areas under study.

Figure 11: Mean and SD in Farm Size (Hectare) (2014-2017)



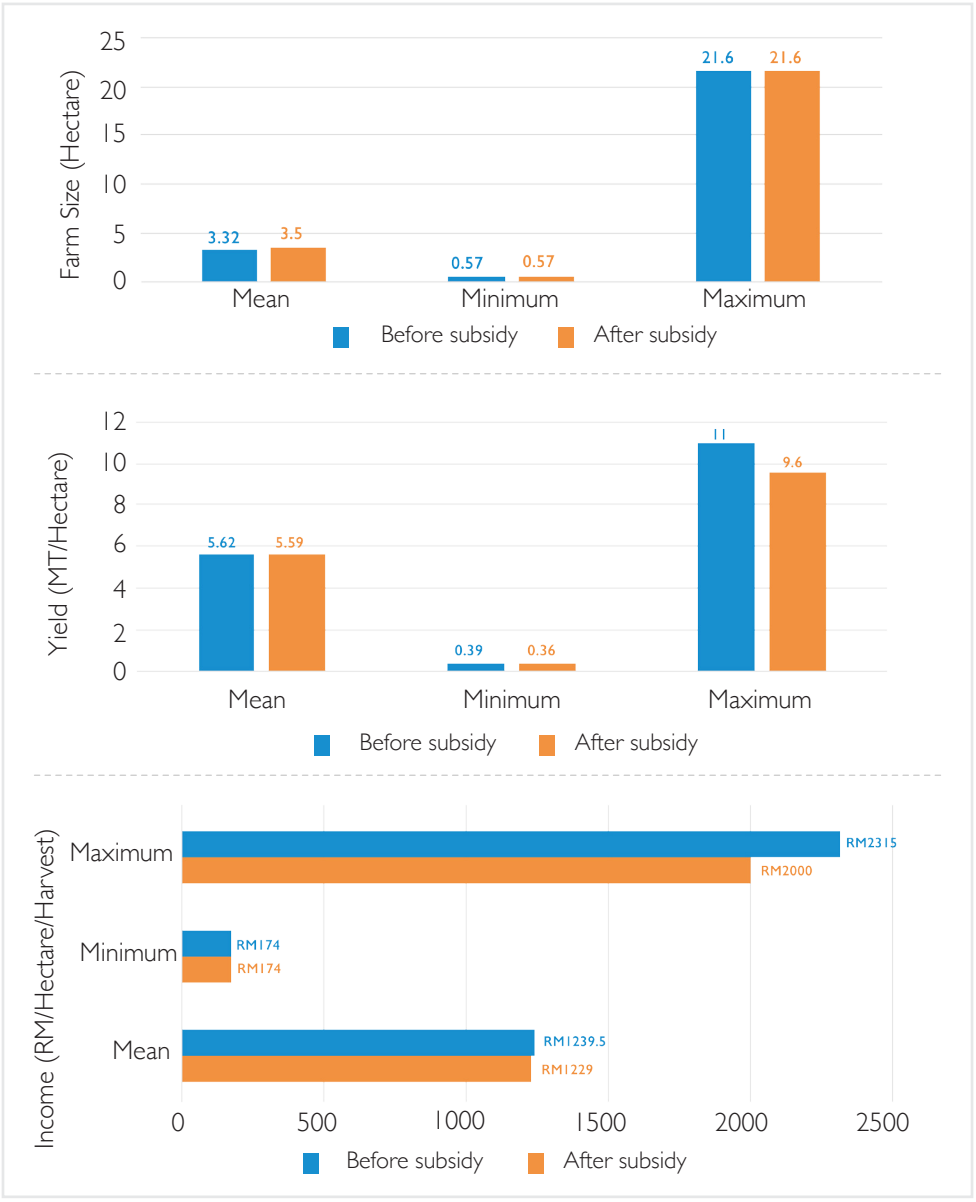
[7] *Income is calculated based on net income of per hectare/harvesting season. The face-face-interview insist on the rough estimate of net income received during the previous/last harvesting season. This is to minimize the non-response bias for question related to income received by each respondent. The data were collected based on previous planting season without any reference to main or off-season production. Selected indicators such as yield, price, income, cost and productivity is normalized based on per hectare basis.*

Effect of price support on short-term yield

Since 1980, the government has been conducting readjustment of price support (SSHP) on the income transferred to the farmers; the amount of cash transferred has been adjusted four times over the last four decades. The objective of this policy is to support income in the situation where production and yield are significantly affected due to drought and general decline of commodity prices. In 2016, the government raised the producers' price support scheme for the producers (SSHP) from the existing RM248.10/MT to RM300/MT.

Figure 12 contains the short-term response in terms of increase in acreage by 5.4% while the income declined by 2.23% at the back of falling productivity of 0.53%. This may be due to the deteriorating quality of the land from intensive use of fertilizers, pesticides and other chemical-based input and geo-physical factors that affect the land productivity. Thus, productivity gain is still instrumental in supporting farmers' income while land size is the limiting factor among small farms.

Figure 12: Farm Size, Income and Yield Before and After SSHP Adjustment for the Respondents (Whole Sample)



Interestingly, about 90.4% of respondents did not record any increase in land under cultivation while 7.2% experienced increase in land acreage and 2.4% had reduced acreage. Based on such figures, producer price support did not result in any short- to medium-term changes in productivity and income. This can be due to the limited land available and the small size of farms, which led to higher production cost among the farmers in the two regions. About 80% of farmers who could increase land acreage have an average land size of 5 hectares, which indicates that acreage response to price incentive is fairly high among those who farm in the larger land areas. However, yield variation per hectare shows that, in response to the price support adjustment, 19% of respondents recorded a decline in productivity, 72% recorded constant productivity, and 19% recorded an increase in productivity. In terms of income, 20.3% of respondents reported a decline in income, 63.4% reported no change in income and 26.4% reported an increase in income. Based on Figure 12, a significant number of farmers reported no changes in acreage, income, or productivity.

As such, price support adjustment may not have any significant short- and medium-term impact on the welfare of farmers, as it may only have ended up covering the operating cost of the rice production. Previous studies have indicated that Malaysia does not have any competitive advantage in rice production due to small farm sizes, which generally leads to higher cost of production (Ali, 2017; Siwar, 2016; Jafari, 2017)

Subsidy, Income and Cost Structure

Cost Structure

The cost of production constitutes the economic factors affecting farmers' revenue. The survey data constitute two primary components for major inputs, which are subsidized agrochemical inputs as well as additional inputs paid by farmers out of their own budget. This includes the following items:

1. Agriculture input (fertilizers, pesticides, seeds or sprouts, and others)

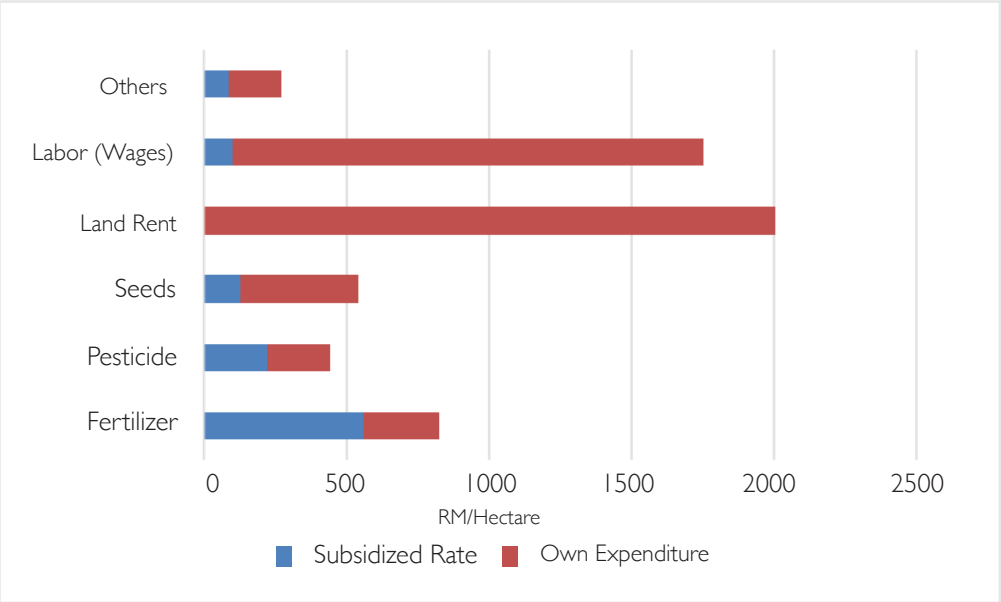
2. Labor cost and machine rental cost (from preparing the land to the harvesting process)

3. Agricultural land cost (land rental cost)

The study considers the out-of-pocket expenditure (own expenditure) that farmers spend on additional inputs (fertilizers, pesticides and seeds/sprouts) to complement existing subsidized inputs received. Additional inputs from the open market are necessary due to the insufficient amount and low quality of subsidized inputs (FGD, April and July 2018).

Based on the expenditure of agriculture inputs, the major component in terms of the share of farmers' own expenditure is the purchase of seeds. The cost share of agrochemical (fertilizers, pesticides) and seeds make up 20% of farmers' total private expenses for inputs while expenditure for wages and rent represents about 80%. Interestingly, farmers cost share for variety seeds is much higher when compared to fertilizers and pesticides; this may be reflective of their coping strategies to increase yield (Figure 13). The escalating cost in basic inputs such as fertilizers, pesticides and seeds is also due to the country's total dependence on foreign markets for all the inputs. The overregulation of the industry has stifled the quest for innovation especially in the input markets, and existing strategies ignore the need to lower the cost of production by building domestic capacity of the inputs needed for rice production (FGD, 10th October 2018). In addition, the plummeting value of the ringgit in the last five years has contributed towards higher import bills for agricultural inputs.

Figure 13: Value of Subsidy and Private Expenditure for Primary Inputs



Income and Cost Based on Regions

Based on the regional comparison, however, MADA recorded a 4.85% increase in yield per hectare after the increase in SSHP as compared to a decline of 18.5% in IADABLS (Sekinchan) (Figures 14 and 15). Nevertheless, average yield for IADABL (Sekinchan) is relatively higher. These differences can also be explained by technological differences between the two regions, as evidenced by the differing technological index for the two areas (Sirin, 2017).

Figure 14: Farm Size , Income and Yield Before and After SSHP Adjustment for IADABLS (Sekinchan)

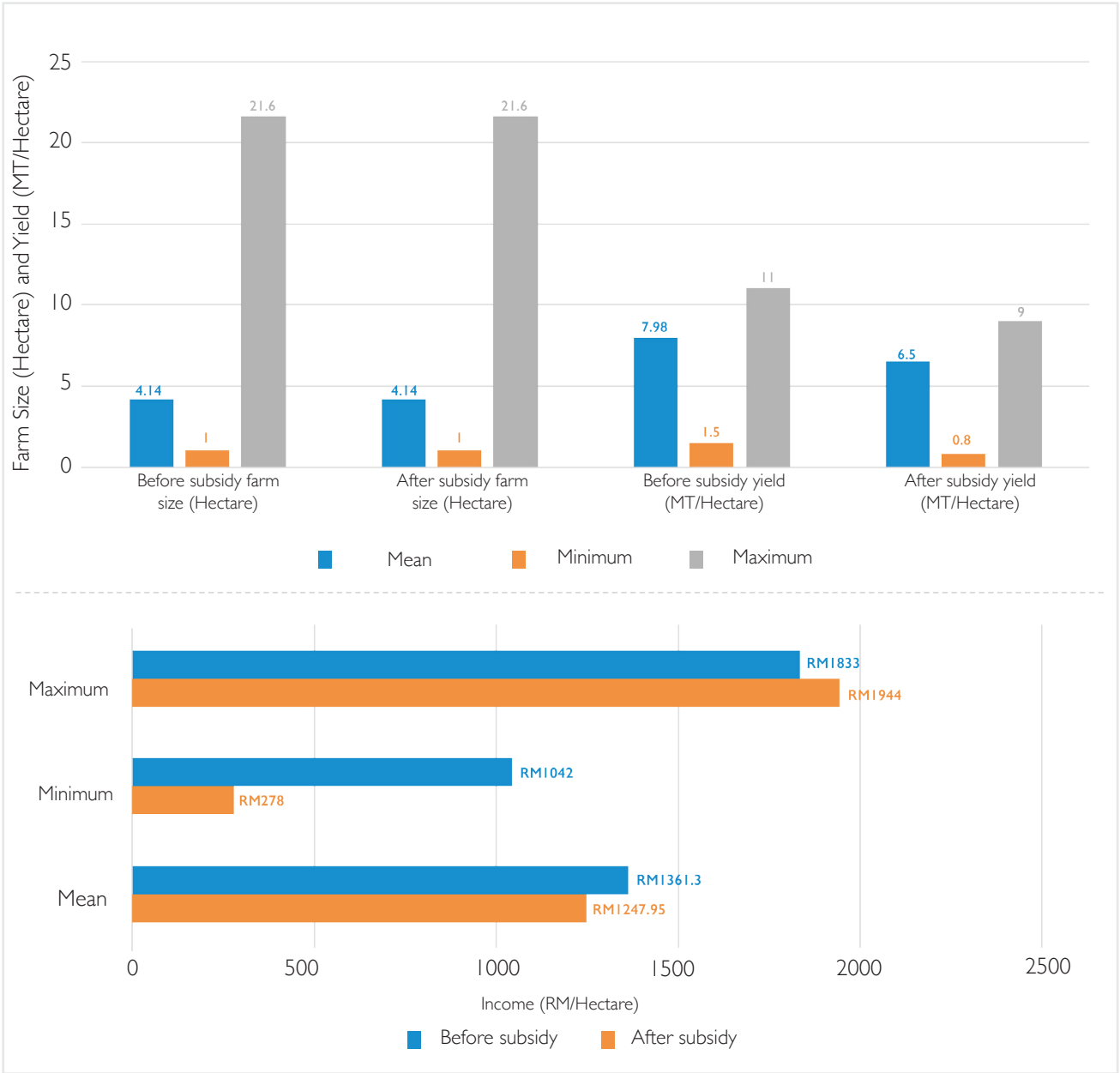
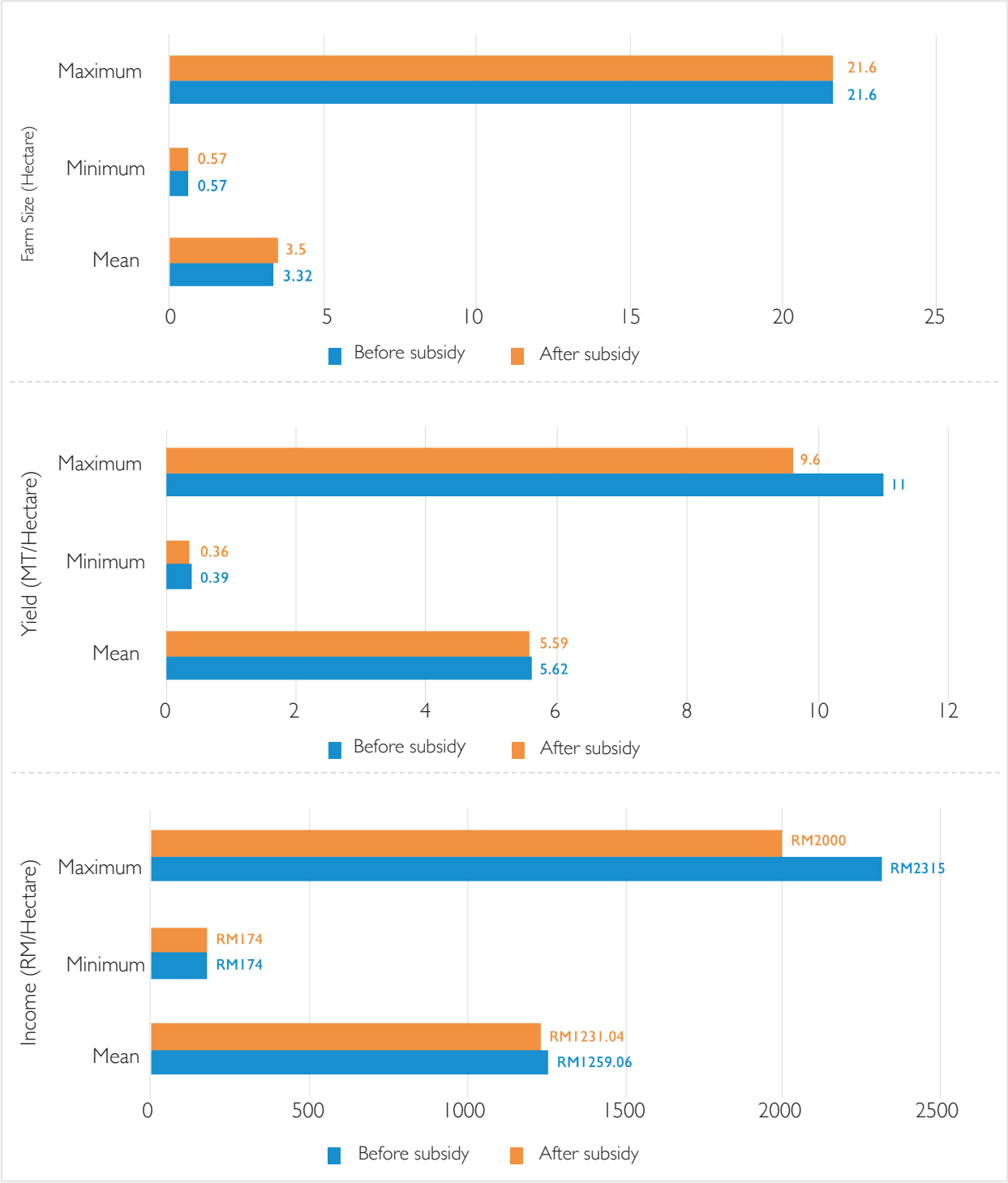
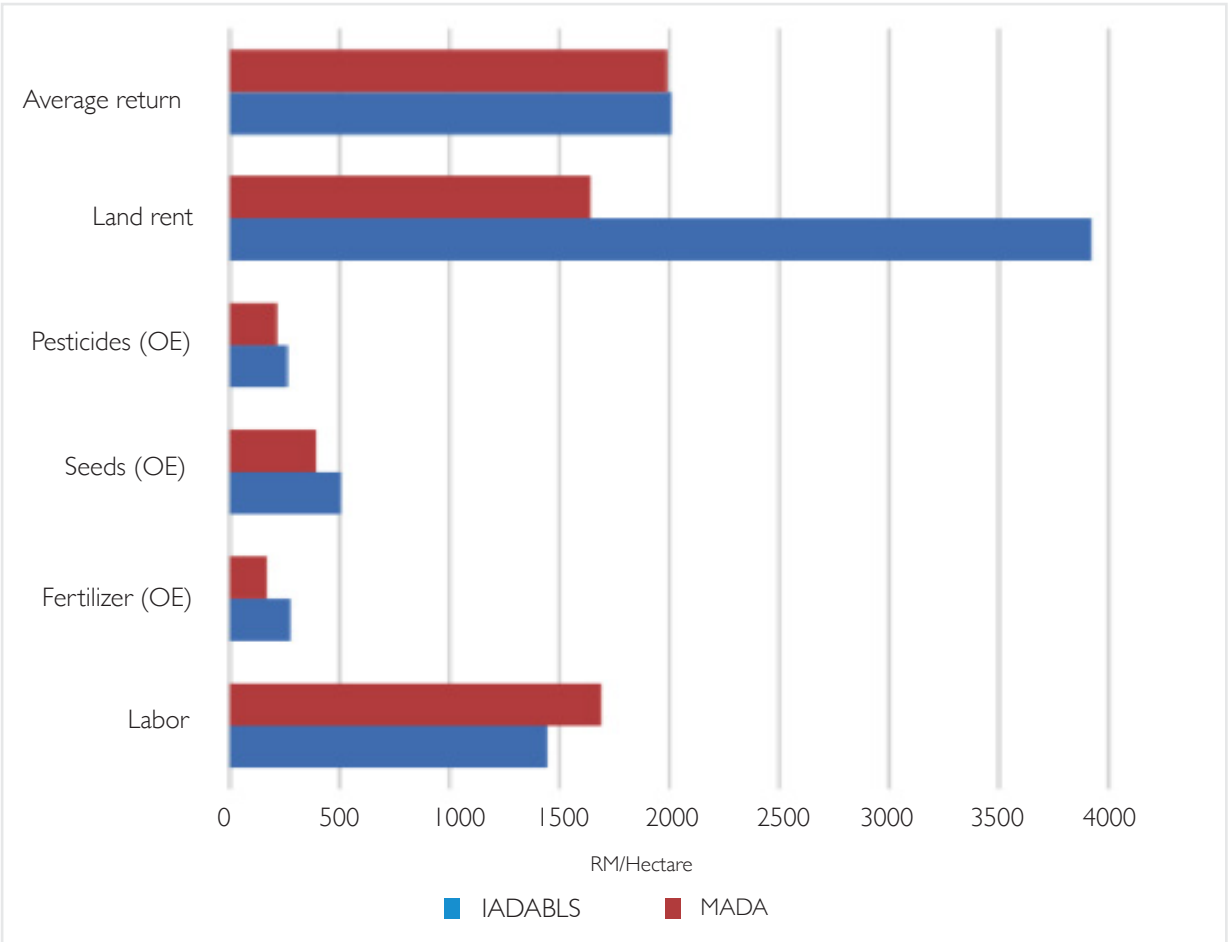


Figure 15: Farm Size, Income and Yield Before and After SSHP Adjustment for MADA



The comparison made in Figures 14 and 15 may be biased, as the number of respondents between the two regions are not equal. To overcome this bias, a comparison was also made using the same sample size with similar farm characteristics between the two regions under study. In other words, the comparison was made based on homogenous characteristics of farms within the two regions. Based on the equal sample size, Figure 16 indicates that average input cost for IADABLS (Sekinchan) is much higher as compared to that of the MADA region. It was observed that labor is relatively more expensive in MADA while land rent is higher in IADABLS (Sekinchan), and the returns between the two regions differ within a narrow range. In addition, the variation (standard deviation) in expenditure for all types of inputs as well as net income is much lower in MADA as compared to IADABLS (Sekinchan). Average net income in the last 4 years differed significantly between the two regions, with mean income of RM2,010.19 per hectare for IADABLS (Sekinchan) as opposed to RM1,989. 21 per hectare in MADA. The variation in income, as indicated by the standard deviation between the two regions, indicates a significant volatility of income with IADABLS (Sekinchan) having a standard deviation of RM1,430.28 per hectare as compared to RM1,040.37 per hectare in MADA.

Figure 16: Cost of Own Expenditure (OE) and Average Net Income for IADABLS (Sekinchan) and MADA Based on Equal Sample Size



The impact of SSHP adjustment based on 2017 Budget in the two regions, with equal sample sizes having similar characteristics Figure 17 and 18 shows the impact in terms of farm size. Despite the provision of subsidies, farm size remained the same, but the yield declined by 18.5% per hectare and the income declined by 8.33% per hectare for IADABLS (Sekinchan). In MADA, despite an increase in farm size and yield per hectare, the income declined by 2.23% per hectare. The reason behind declining income may be the relatively higher cost of farming in smaller farms because about 40% of both samples have the farm size of 1 hectare. This indicates that the impact of the subsidy program will be bound by the farm size as well as region, which calls for a more targeted or localized approach in designing subsidy programs.

Figure 17: Before and After SSHP Adjustment for IADABLS (Sekinchan) Based on Equal Sample Size

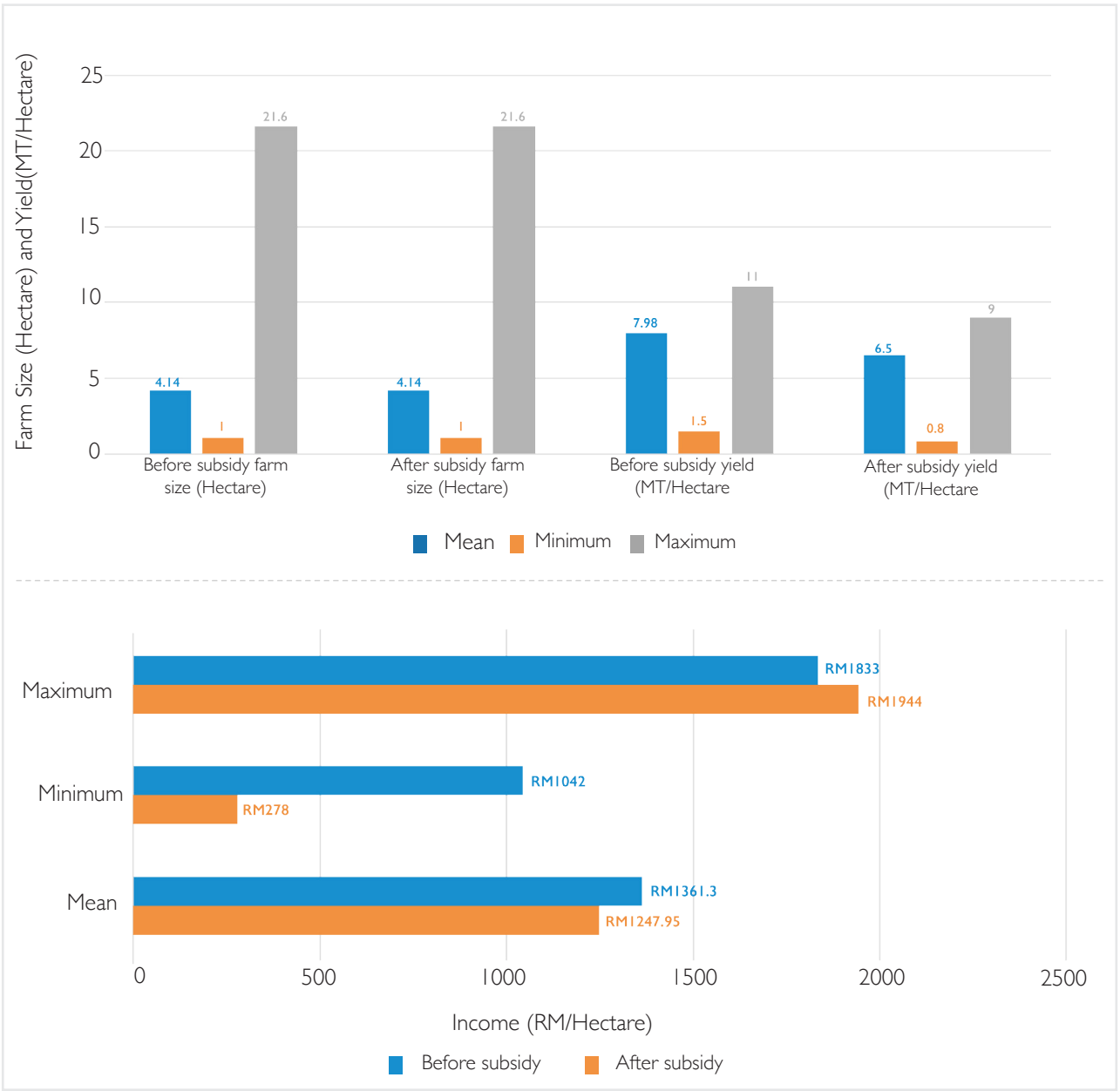
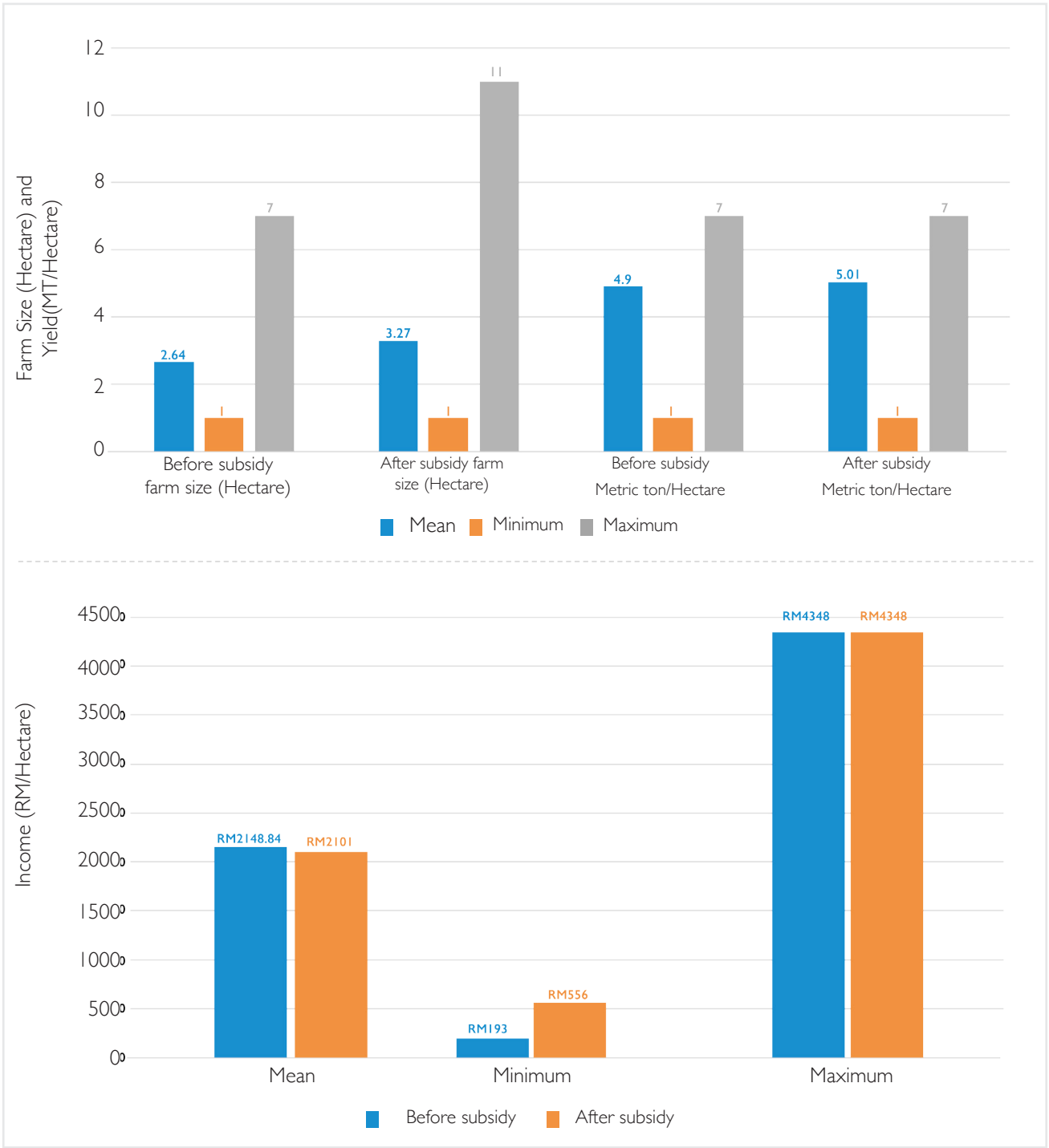


Figure 18: Before and After SSHP Adjustment for MADA Based on Equal Sample Size



The prime issue in Malaysia's paddy sector is a failure to address stagnant productivity and escalating cost, which are factors that contribute to farmers' welfare. The inverse correlation between productivity and escalating cost has depressed farmers' income and consequently, the rice farmer has become one of the most vulnerable groups of B40.

It is quite a paradox that while the government has spent a substantial amount of public expenditure on farming subsidies, it is also government intervention in the input and output market—through government-appointed middle men—that has distorted both markets. Thus, such control over the market has created a structurally weak input and output market that continues to distort the local rice industry and stifles the national effort to achieve self-sufficiency and food security in Malaysia (FGD, 10th October, 2018).

A study by Davidson (2018) discussed the structural weakness of the industry with a strong presence of the ruling party-linked company that contributed to almost a total collapse of the industry. The data collected in this study confirms Davidson's argument that yield in the last four years has been stagnant while acreage remains consistent due to increasing urbanization as well as escalating cost of land rent and other related inputs. Despite significant public investment, domestic production remains low. Davidson (2018) explains this paradox by stating that the "production spurt that these projects hope to deliver, however, would acutely threaten the interests of BERNAS, which makes most of its money from the domestic selling of imported rice. If local production is increased, it would stand to reason that the need for foreign rice would lessen, in turn squeezing BERNAS' profit margins."

The stagnant yield on the back of heavy public investment contributes towards higher cost of production. Consequently, the rice industry will remain uncompetitive and underdeveloped. The issue of the off-farm marketing chain portrays another dimension in the industry which has been controlled by the dominant industry players who not only control the market but also the regulating arms of the industry.

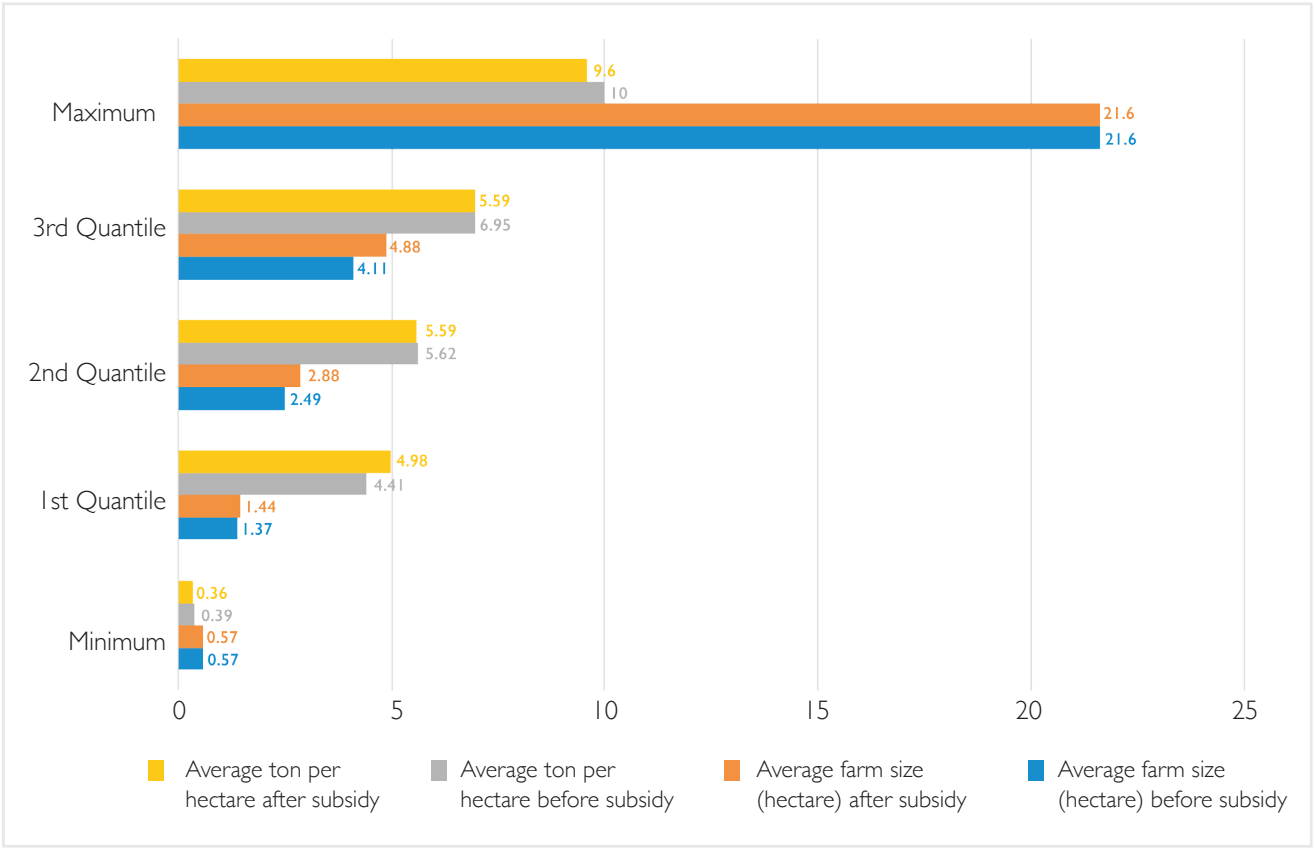
Yield, Income and Farm Size Based on Quantile

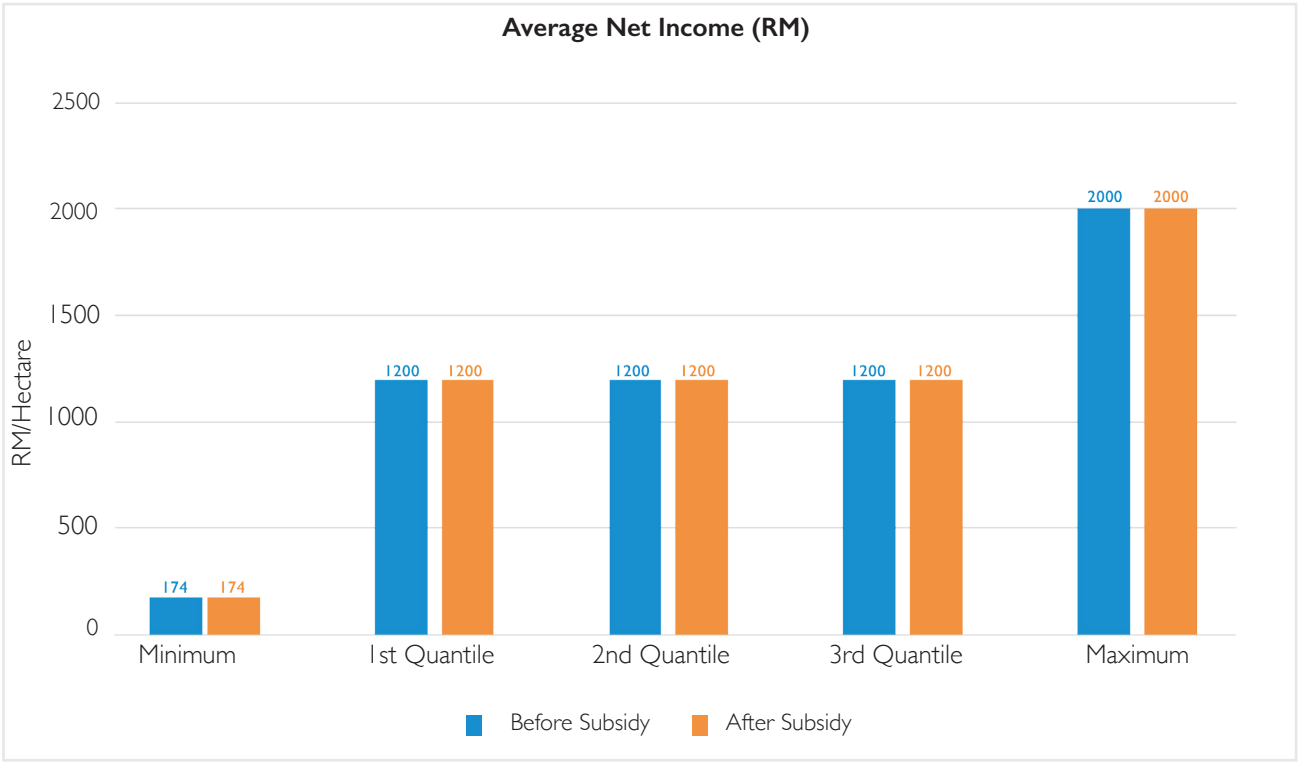
Several studies have proposed subsidy reforms to focus on smaller farms, and specific designs of subsidies have been recommended for farmers with limited resources (Wiggins and Brooks, 2010). The cost structure based on farm size indicate the lack of economies of scale, which opens the possibility of introducing a "starter pack" subsidy option, i.e. subsidizing critical low acreage of 0.2 hectares, as adopted under smart subsidy programs in other countries (Ibid 45-51).

Based on this recommendation, this study assesses the characteristics and the cost structure of the smallest rice farms that may face credit constraints. Small farms face income volatility due to higher costs and lack of economy of scale. In this regard, future subsidies will need to target smaller farms and realignment of subsidy in line with land consolidation will focus on farmers having land below 1 hectare. Such consolidation will be part of an attempt to achieve economies of scale and target specific regions (non-granary). Such a move will not result in national loss as non-granary regions only represent a minority production area of the industry (FGD, 8th August 2018).

Figure 19 indicates that the 3rd quantile responded to SSHP 2016 incentives by increasing the average farm size by 18.7% while all the other parameters remain unchanged. As such, the impact of price support schemes varies across groups, income level, as well as the level of assets owned by the farmers.

Figure 19: Farm Size, Productivity and Net Income Based on Quantile (Before and After SSHP Adjustment in 2017 Budget)





Based on farm size quantile, the income for the 1st quantile is RM1,200 and RM2,722 for the 3rd quantile based on the average between the 2014 and 2017 production years (Figure 20). The gap in average net income can be explained by productivity per hectare between quantiles. Based on farm size, the 3rd quantile recorded an average of 4 hectares as compared to 1.29 hectares for the 1st quantile for the 4 years, but productivity differs by almost 47% between the two groups. Despite a larger average farm size, productivity per hectare for the 3rd quantile remains flat and this may have affected the average income for the last 4 years. This could be an indication that rice production is a sunset industry which has experienced stagnant growth and has to be highly subsidized due to the food security issue and self-sufficiency needs of the country (FGD, 8th August 2018). For the 3rd quantile, the minimum change in land size and productivity per hectare in the last 4 years has contributed to a relatively flat average income (Figure 20). The fixed land size and static productivity also explain the differences in Gini coefficient across the time period (Figure 21).

Figure 20: Net Income per Hectare (2014-2017)

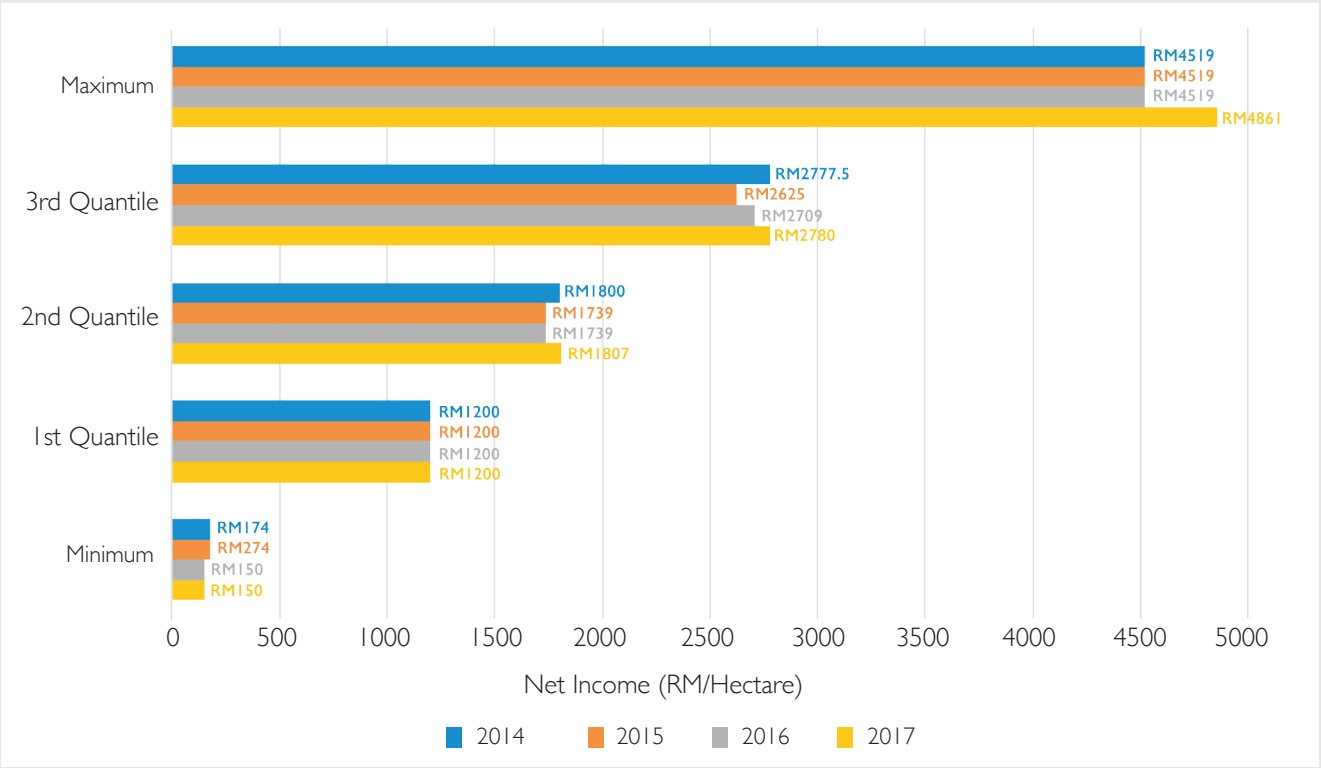
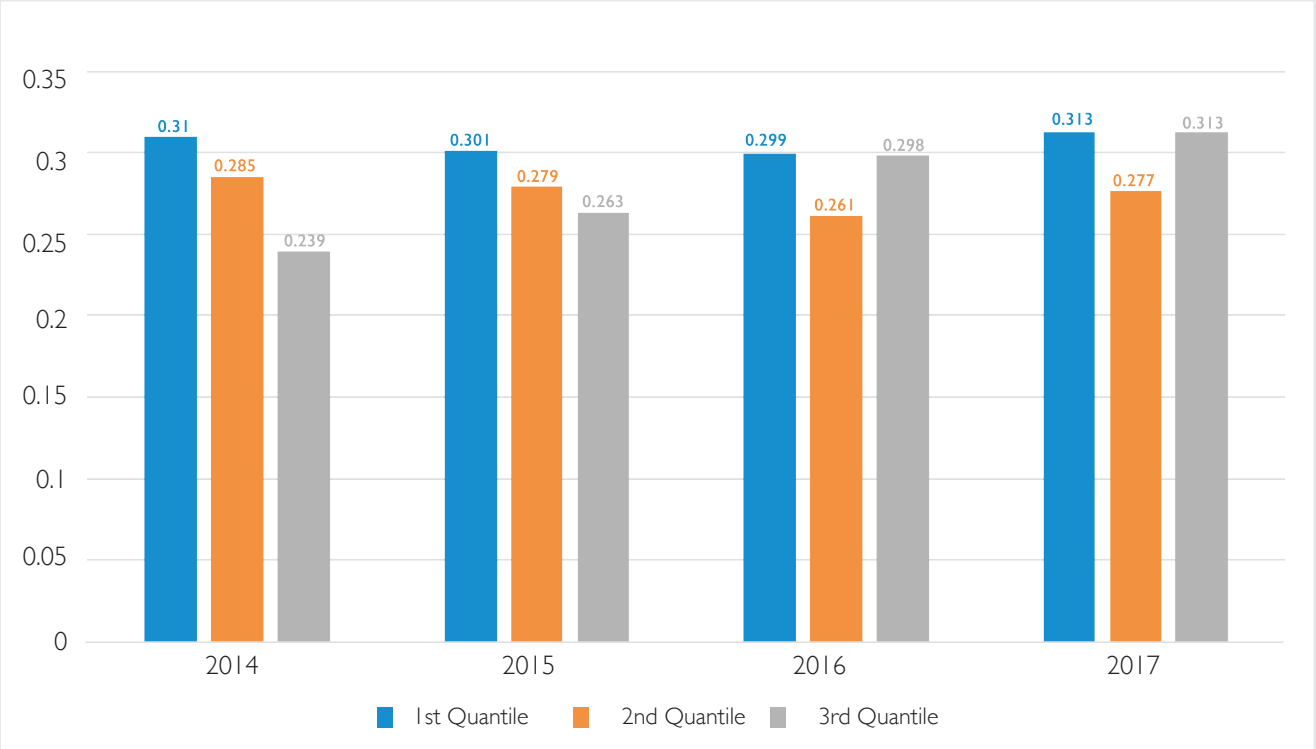


Figure 21: Gini Coefficient and Net Income (2014-2017)



The value of subsidized inputs for fertilizers and pesticides tends to be higher for the 3rd quantile. The allocation of input subsidies tend to benefit the 3rd quantile as opposed to the 1st quantile (Figures 22 and 23). This also supports other studies which found that the wealthier farmers tend to benefit more in an absolute amount from subsidy programs run by the government (Osorio et al., 2011, Hazel et al., 2010). Since labor cost for the 1st quantile represents only 46% of total labor cost of the 3rd quantile, this may also indicate that small farmers employ family labor as opposed to hired labor in their farms and this may constitute one of the important characteristics of farmers with limited resources. This may result in high labor intensity per farm and can only be sustained when there is higher productivity gain among the small farms (Ninan,1984). Given such a close relationship between labor and productivity, adoption of mechanization practices among small farmers may call for smaller scale machines that complement the role of family labor in enhancing farms' productivity (FGD, October 10th, 2018). The higher cost of land rental and the wages for labor among bigger farms may contribute towards lower earnings, which is significant as about 33.6% of the total respondents rent land from landowners while 21.2% partially own and rent the farm land. Higher labor expenditure may also indicate low mechanization levels in farms.

Figure 22: Value of Subsidy Based on Quantile

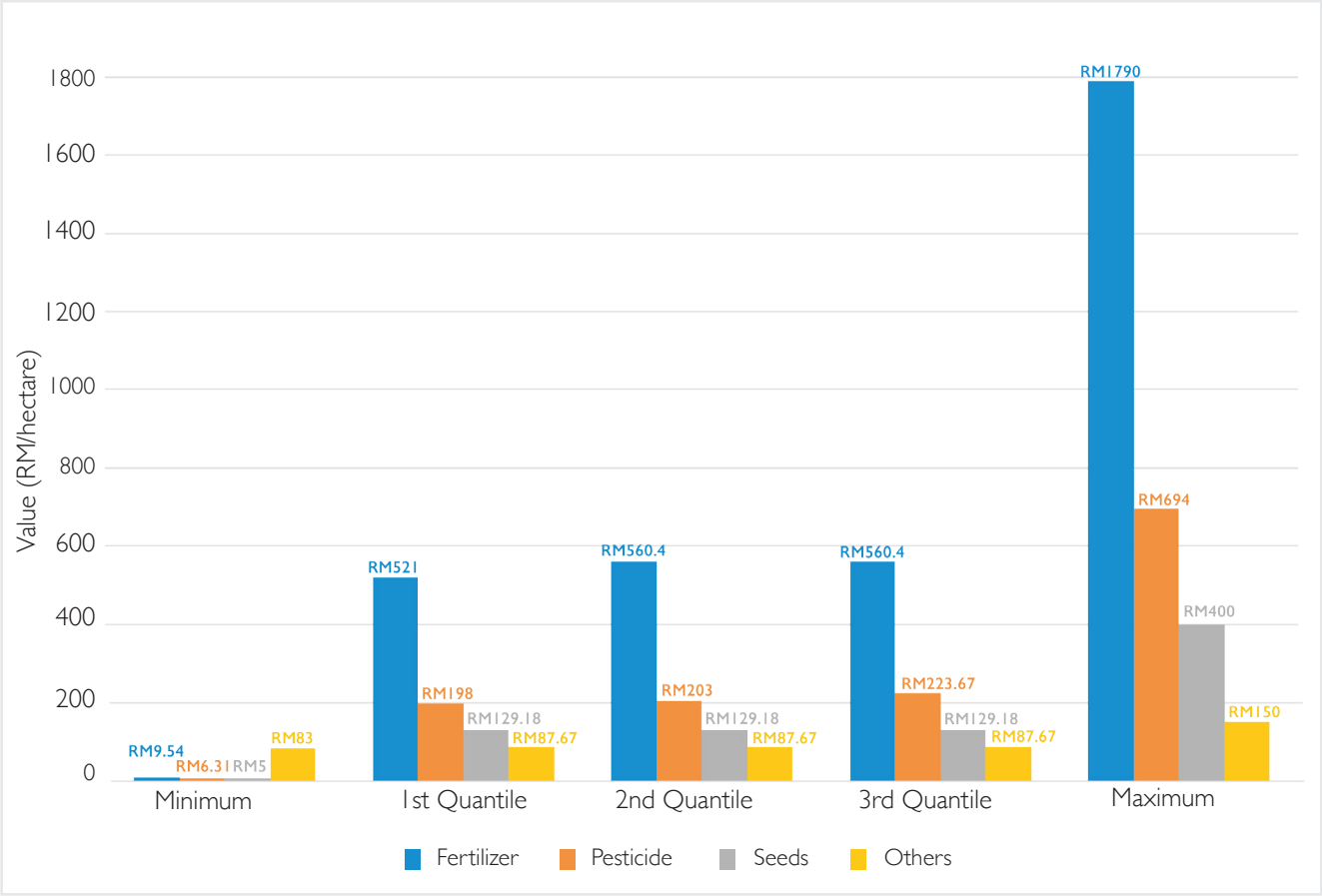
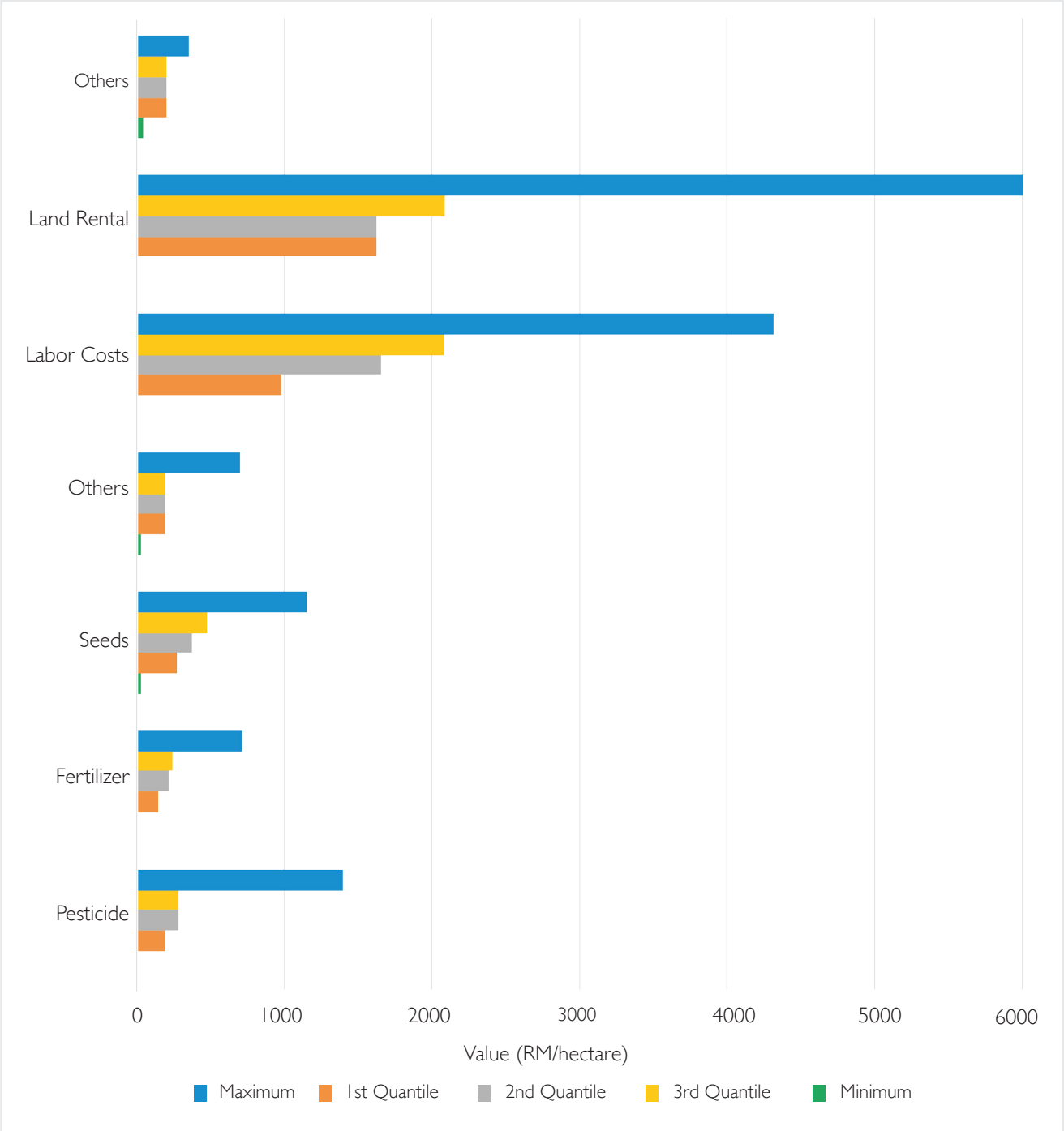


Figure 23: Cost / Own Expenditure Based on Quantile



Production Model: The Strategic Role of Variety Seeds

A simple production model was run to evaluate the relationship between income, productivity and impact of farmers' own expenditure on basic agrochemical inputs such as fertilizers, pesticides and variety seeds. The model determines the multiple impacts of basic inputs on farmers' incomes and the level of statistical significance highlights the specific roles of primary inputs and the productivity of each farm.

Table 2 explains the significant effect of variety seeds and farm productivity on farmers' income. Clearly, the price of variety seeds affects returns more significantly than do pesticides and fertilizers. As different types of inputs have different impacts on income, there is a need to be more selective about the type of inputs subsidized (Osorioet al., 2011). Thus, subsidized items should be prioritized in the government's effort to rationalize the rice subsidy program in order to stabilize the income among farmers. In this regard, continuous use of chemical-based fertilizers and pesticides may not affect net income received by the farmers. Continuous increase in the amount of fertilizer results in degradation in the quality of soil in most farms (FGD, 10th October 2018). In contrast, supporting and subsidizing better-quality seeds may increase farmers' net income. In that case, future subsidies should be shifted towards better variety seeds and away from chemical-based inputs such as pesticides and fertilizers, as neither of these two inputs can be regarded as quality inputs. Such an option may create a more flexible platform for subsidy reforms as better quality seeds and varieties could be more resistant to diseases and droughts, which are emerging challenges in Malaysia's rice production (FGD, 8th August 2018).

Table 2: Impact of Expenditure on Inputs (RM/Hectare), Productivity (MT/hectare) and Income (RM/Hectare)

Variables	Coefficient	T-value	Significant
Constant	**2178.5**	**5.78**	**0.00**
Productivity (MT/hectare)	**0.16**	**1.74**	**0.08***
Own Expenditure for seed (RM/hectare)	**-0.20**	**-2.16**	**0.03****
Own Expenditure for Fertilizer (RM/hectare)	**-0.07**	**-0.72**	**0.47**
Own Expenditure for Pesticide (RM/hectare)	**-0.03**	**-0.29**	**0.76**

**Significant at 10% and ** Significant at 5%*

The Impact of Subsidy on Behavior and Perception

Studies by Aziz et al. (2015), Jamaludin et al. (2010), explain the role of financial innovation and technology adoption while Johari et al. (2016) examine the role of education, farm size and income in the adoption of better yield seeds used by the rice farmers. Ng et al. (2016) investigates the role of innovation and R&D in creating the cluster-based innovate nuclei of the rice industry. Based on the study, among IADABLS (Sekinchan) farmers, the emergence of innovative and R&D-based agricultural input is also supported by a commercially-oriented eco-system that enables farmers to share information and be on the learning curve of new technology and products. In this regard, institutional dynamic and localized learning—which includes informal learning that could affect social cohesiveness, trust and connectedness—are particularly important in improving productivity among rice farmers.

In a separate study by Lattimore (2006), New Zealand farmers embraced a more market-oriented approach, rapidly expanding output based on accelerating productivity trends and associated higher income. A separate study by Harun et al. (2015) found that the adoption of best breed technology led to better disease control despite higher operating costs. Nevertheless, the adoption of high breed technology among farmers is influenced by socio-economic status, especially in terms of education attained by the farmers. The same study also argued that the influence of technology on farm yield was not significant, which may be due to the relatively low number of farmers who adopt technology.

A similar study by MARDI (Sirin, 2017) indicates that technology adoption among Malaysian rice farmers is rather low (0.52) when compared to countries such as Vietnam (0.56). On average, the adoption of production technology in Malaysia stood at the moderate score of 0.52 while the technological gap between the granary areas also differed significantly. Comparison across the granary areas and the non-granary areas found a significant difference in technology index. Across the main granary areas, IADABLS scored an index of 0.54 while Lembaga Kemajuan Pertanian Kemubu (KADA) and MADA scored 0.49 and 0.50, respectively, as opposed to 0.53 for the non-granary areas. Nevertheless, almost 65% of the rice farmers fall within the fair/medium level on the technology adoption index; by way of comparison, almost 60% of Vietnamese farmers are categorized within the high/advanced level on the technology index. Similarly, the same study also highlights that a huge technological gap exists between the farmers who adopt high-level technology and those with low technological application.

Various studies have proposed that the sustainability of the rice industry will depend heavily on technology, farm management as well as adoption of innovative practices such as high yielding seeds and better farming methods (Siwar, 2014). In terms of high-yield seeds, farmers plan to use higher quantities of fertilizer (as well as organic soil or topsoil) as compared to the improved paddy variety seeds. The same trend was observed in the samples across the IADABLS (Sekinchan) and MADA regions.

Subsidy and Innovative Behavior among Farmers

In general, farmers continue to depend on chemical-based inputs, which may have serious implications on cost, yield and environmental quality of the farmland. Farmers are more inclined to believe that they need more fertilizers, as shown by their perception on how innovation practices affect their choices of inputs for future farming needs. Thus, reforms pertaining to fertilizer subsidies could be packaged with complementary efforts in terms of soil fertility management practices, private input market development, investments in rural roads or R&D expenditure. Figures 24, 25 and 26 indicate farmers' willingness to use improved variety seeds for the whole sample as well as the sub-sample for MADA and IADABL (Sekinchan). Nevertheless, there is a clear willingness to invest in good quality inputs despite the continuous need to spend more on fertilizers than on other inputs.

Figure 24: Plan to Use Improved Inputs for Higher Productivity (Whole Sample)

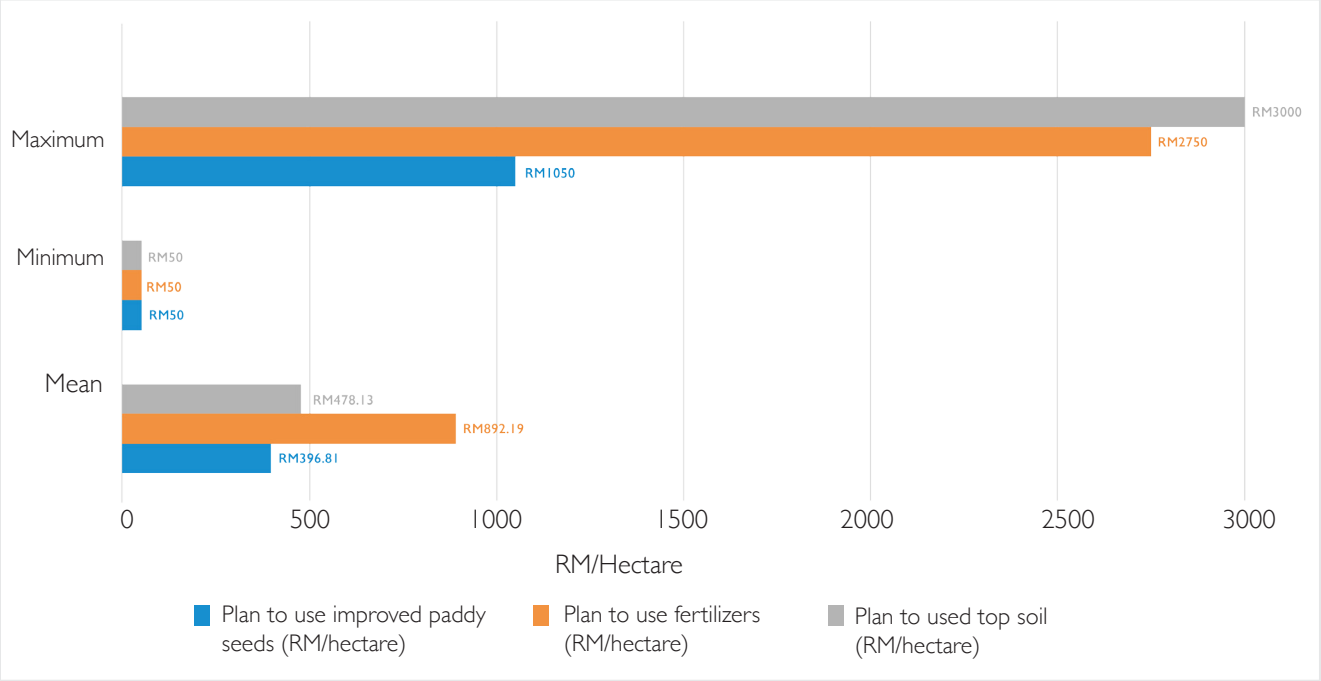


Figure 25: Plan to Use Improved Inputs for Higher Productivity for IADABLS (Sekinchan) (RM/hectare)

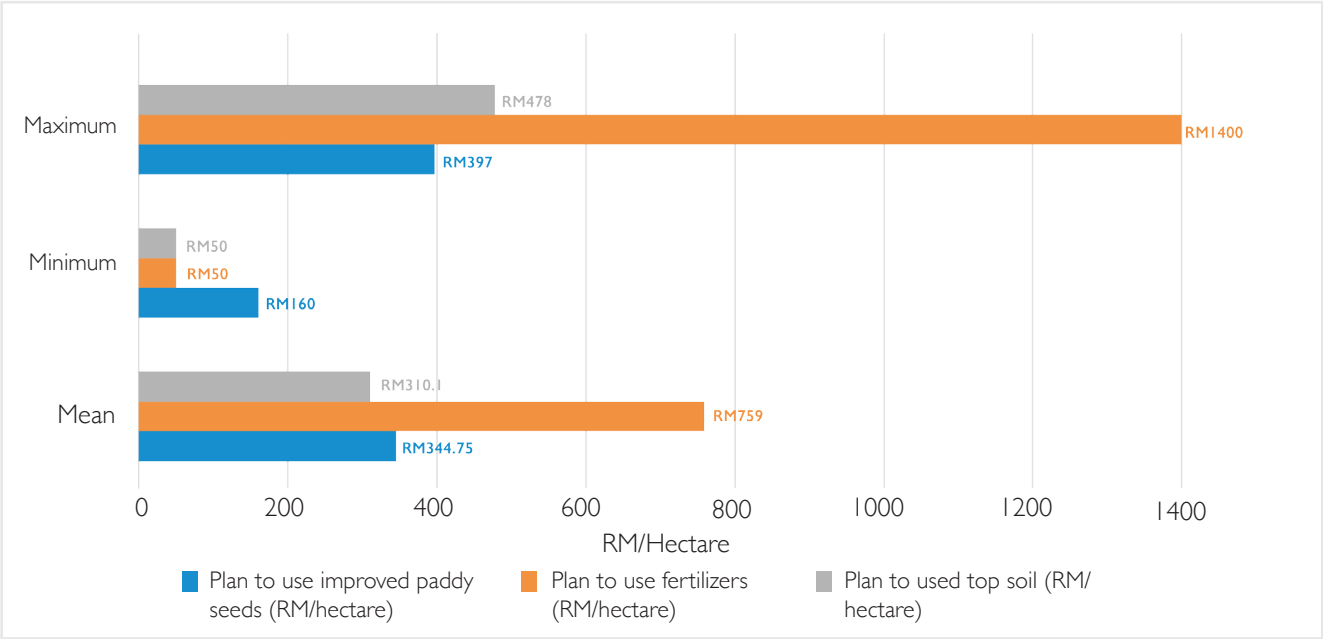
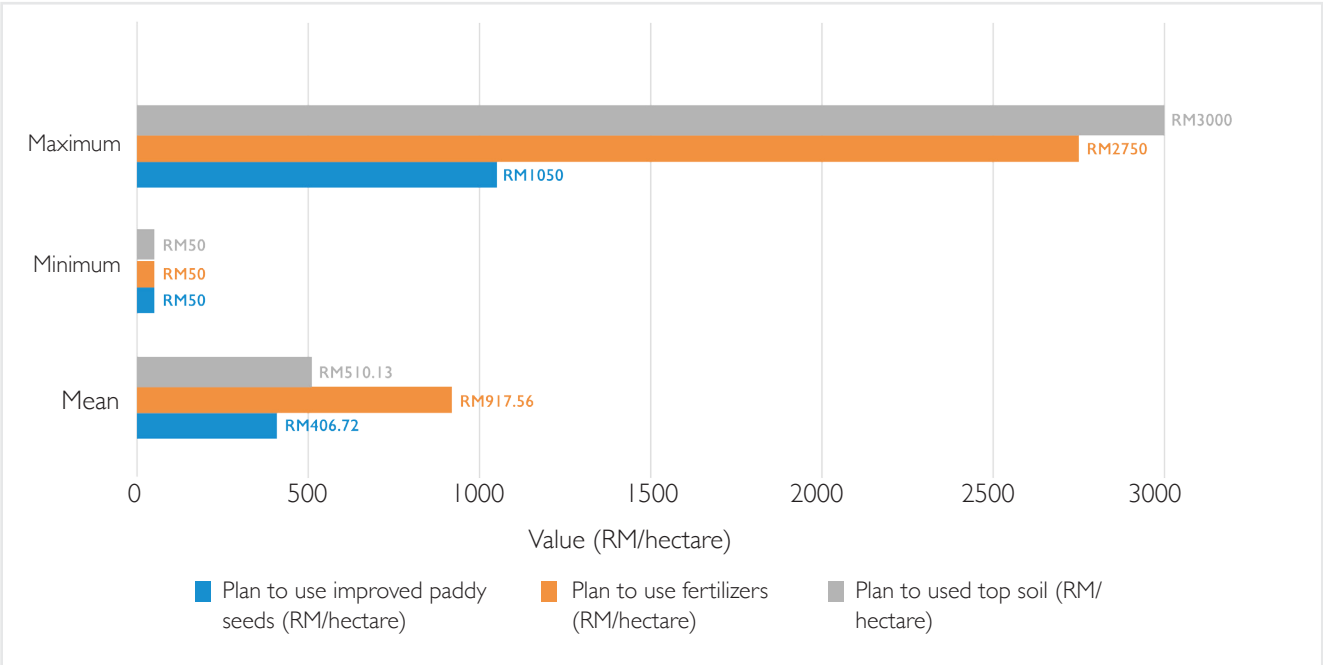


Figure 26: Plan to Use Improved Inputs for Higher Productivity (MADA) (RM/hectare)



Farmers' Behavior Towards Organic Farming

Studies by Kuminoff and Wossnik (2010) and Isik (2004) discuss factors that influence farmers' attitude towards organic farming, such as cost, information, technology and uncertainty. Diversification towards organic farming could assure the farmers' price premium and sustain the environmental sustainability of agricultural activities (FGD, 8th August 2018). A significant 50% of farmers used organic inputs (seeds, fertilizers, sprouts) as opposed to 49% who did not use organic inputs. Farmers who used organic inputs endorsed various reasons for doing so, which include environmental concerns, influence from other farmers, higher yield, and higher disease resistance. In contrast, farmers who did not use organic input explained their rejection with various factors, including cost, lack of subsidy, and uncertainty about the risk associated with organic inputs. Based on the positive response for utilization of organic inputs, the farmers may be given training and complete information in using MYGAP by adopting environment-friendly methods and reducing agrochemicals, which could enhance food safety at the least possible cost level (FGD, 8th August 2018).

An empirical estimate by Jafari et al. (2017) indicates that any reduction in agrochemical subsidies, which should be off-set by organic and more environmentally-friendly inputs, would contribute to a change in national welfare from about RM165.5 to RM255.8 million in addition to long-term environmental and health benefits associated with organic or chemical-free farming (Jafari et al. 2017).

Perception and Attitude Towards Rice Farming

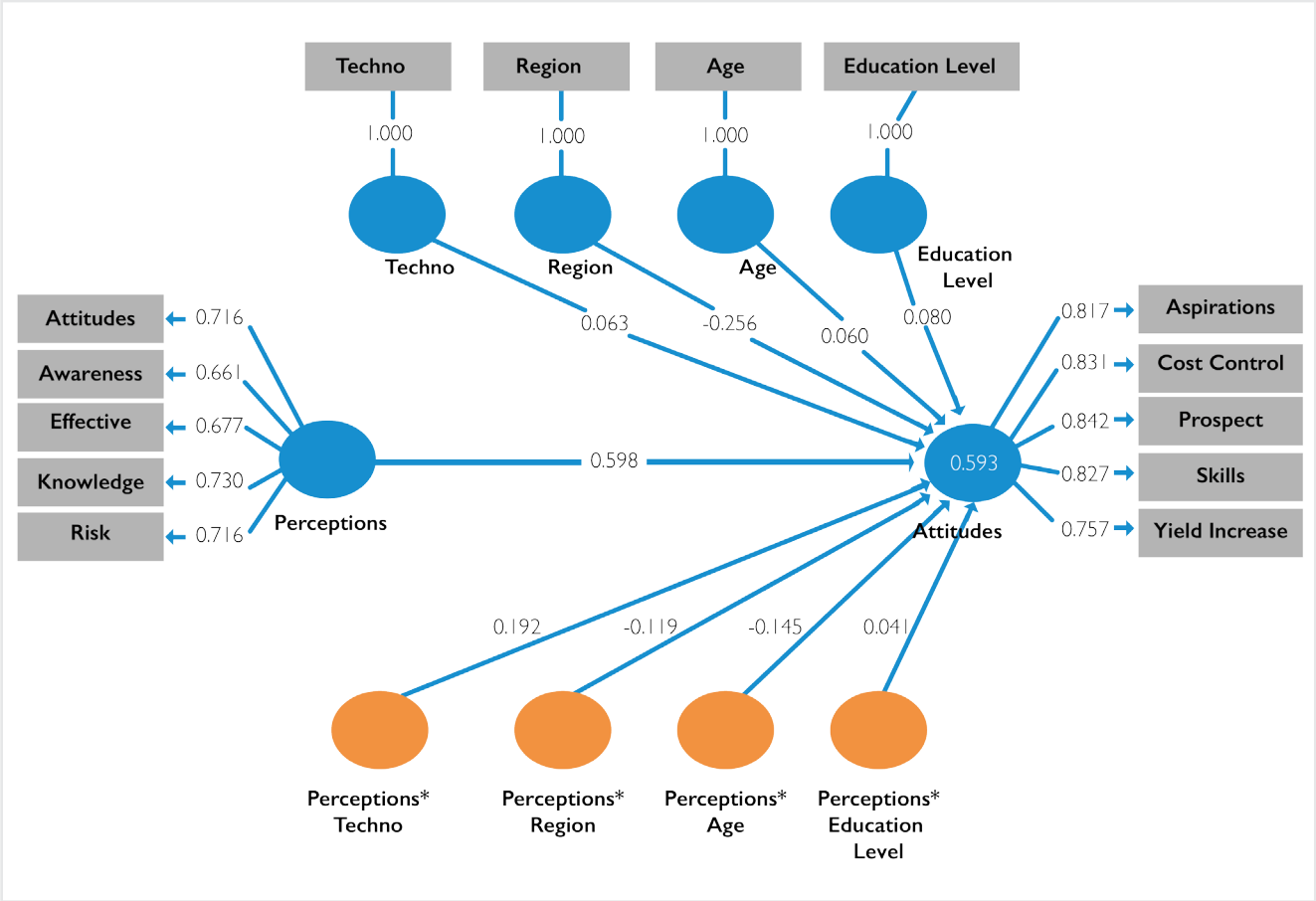
A Partial Least square (PLS) model was used to test the impact of farmers' perceptions on their attitudes towards farming activities. Due to a limited sample (n = 125) that was skewed towards one region, PLS was adopted instead of other behavioral modeling techniques.

An empirical investigation was conducted on farmers' perceptions and attitudes towards subsidy programs. For this study, perceptions are treated as behavioral attributes reflected by factors such as awareness, effectiveness of the program, understanding of extension programs, level of knowledge, risk perception, sufficiency, and success of the government programs. In contrast, attitudes are measured based on aspirations, ability to use market information to buy inputs, control over cost, skills, prospects, and impact of yield on returns.

The model was constructed to consider age, regions, adoption of technology and education as mediating factors in assessing the influence of perception on the attitude of the farmers. Based on the PLS model (Figure 27), technology serves as a significant mediating factor in the relationship between perception and attitude, while factors such as age, region, and education do not significantly affect the relationship between perceptions and attitudes. As such, technological adoption contributes towards productivity gains as well as monetary returns among famers and profitability (Md Nordin et al., 2014; Nur Badriyah Kamarul Zamana et al., 2015; Ng et al., 2017).

A study by Ng et al. (2017) indicates that the broader clustering approach focuses on geographical proximity and the role of institutions, as well as how social capital features within the location and existing institutional setting. The development of social capital within a cluster needs to take place in its institutional context, and those development policies must address the 'soft' elements of the cluster development in fostering cooperative relationships and 'social contracts' among the cluster actors. Farmers in Sekinchan clearly demonstrate that innovation activity in the rice cluster is characterized as supplier-dominated, which means that innovation is mainly non-technical and occurs through the assistance of suppliers.

Figure 27: Impact of Perceptions on Attitudes through Education Level, Age, Region and Technology Adoption



In brief, farmers' perceptions on the delivery of subsidized inputs (individual and to all farmers), the role of extension services, knowledge about the use of inputs and risk management have strongly affected their perception of subsidy programs. Alternatively, farmers' attitudes are strongly reflected in several constructs such as farm management skills, their aspiration to turn farming into a business, better yield, better prospects and cost control to increase farm yield. Interestingly, farmers' attitudes towards the market to buy their inputs is insignificant, which can affect their welfare[8] The weak integration of farmers into the market makes all productivity gains obsolete at the farm level. In other words, the inability of farmers to use the existing market structure to solicit inputs has made them vulnerable to market discrimination. Thus, market discrimination and overconcentration of millers, wholesalers and suppliers may impede farmers' need to access the market to remain competitive and efficient (FGD, 10th October 2018).

[8] The final model does not include the attribute on using market to buy inputs as the loading, for this is low (below 0.4) and the final iteration of the model has dropped this attribute.

Welfare and Subsidy Nexus

Subsidies are used by developed and developing countries for different reasons. For developed countries like Japan, even though agricultural production is not cost-effective and they can easily import required products at a cheaper rate, domestic production is important for food security in the long run. In developing countries like India, subsidies are needed for creating and sustaining livelihoods, ensuring the food security of farmers and public, maintaining price control and stabilization, introducing and popularizing new technologies, and sustaining efficient water use. Moreover, subsidies and farm machinery increase farm production, productivity, livelihoods, price stabilization, and introduction and use of new technology. But after some purpose is served, the reduction, withdrawal, or alteration of subsidies remains a challenge. It is difficult to design targeted interventions that identify the best and most effective way to provide the correct subsidies to the right users.

Over the past several decades, in spite of government efforts to achieve a high degree of rice self-sufficiency, rice production could only satisfy 65% and 70% of domestic consumption each year (Ali, 2017). The policy goal to attain rice self-sufficiency has failed, hence simulative policy measures have not achieved the desired goals (Mustapha, 1981; Dano and Samonte, 2005; Authukorala and Wai-Heng, 2009; Tey, 2010; Vengedasalam, et al. 2011; Arshad, et al. 2011; Siwar et al., 2014). Notwithstanding the government's failed efforts, if the country desires to achieve rice self-sufficiency, it would come at high financial and societal costs (Arshad et al., 2011). The interventionist instruments have also been debated in terms of long-term sustainability, which has resulted in a significant budgetary burden to the government, misallocation of resources, and increasing demands for market liberalization. With domestic rice consumption continuing to grow, rice remains significantly important for the entire Malaysian population.

The main idea of the agricultural subsidy is to encourage farmers to use inputs which help in raising productivity, reducing cost, minimizing environmental impact and improving market directions. Apart from this, to maintain and develop parity of agriculture with other sectors, subsidies are justified. Therefore, there is no general rule of thumb that subsidies are to be given or not given, come what may. Sometimes, the political system justifies subsidies to capture the majority vote. Although, under the WTO, efforts were made to phase out subsidies in most countries, only the shape of subsidies was changed. Theoretically, most agricultural subsidies imply reduced costs of inputs for the farmers, which indicates reduced costs of production and increased input use, which in turn is expected to result in increased production. Practically, however, the outcome depends on several factors. For example, targeting can be one of those factors. In many cases, subsidized inputs (fertilizers and seeds) end up in the hands of unproductive farmers, those without required resources e.g. land and labor, or productive but resource-rich farmers. This results in the crowding out of some commercial input demand, which is a sort of displacement with a negative impact. Similarly, other factors that may also influence the effects of subsidies include, among others, weather; type and quality of the subsidized inputs which have implications on productivity (yields); and effectiveness of implementation or distribution of the subsidized inputs. Thus, the socio-economic, political structures and ecosystems of the subsidy program play a key role in the effectiveness of the program.

Subsidies can provide an incentive to adopt new technologies that require expensive or non-traditional inputs. In countries with high incidence of poverty, subsidies can also reduce the unit cost of production and allow producers to market products at affordable prices for low-income consumers. In the long run, however, provision of subsidies creates vested interests that constrain the withdrawal of subsidies when they no longer result in productivity or equity. Heavy subsidies may also provide incentives for market intervention by politically-influential producers to tilt the market in their favor. Well-managed subsidies in the agricultural sector would definitely have positive impacts on farmers' productivity and profit. But if not well-managed, subsidies can be detrimental, as observed in some developing countries' economies where corruption is high. It will result in high cost, low profit and low efficiency in the production.

Improving the Design and Structure Through Better Implementation

As natural resources are limited and increasingly hard to come by, it is important for producers to focus on 'doing more with less.' What we need, now more than ever, are producers who invest in efficiency, innovation and sustainability. Unfortunately, an increasing number of producers defend subsidies and seek to maintain or even increase them. Subsidies tend to reduce incentives for producers to boost efficiency and shift their focus from production to farming subsidies. As a result, many end up doing less with more.

To change this situation, governments need to first consider the long-term implications of agricultural subsidies. Malaysia would continue struggling to provide basic services such as clean air and water, education, public services, infrastructure and healthcare for an ageing population. Within the context of these competing needs, we need to ensure that agricultural subsidies increase productivity, efficiency and global competitiveness. Otherwise, it will be increasingly difficult to justify supporting one segment of the population when so many other priorities remain unfunded.

Subsidy Reforms

Malaysia's economic progress requires a recalibration of how we approach today's challenges. Agricultural subsidies can be a blunt instrument that impedes progress and slows economic growth if they're wielded without precision or a specific cut-off date. There is a need to achieve the simultaneous objectives of protecting our resources and achieving the nation's drive for food security. This balance can be achieved by reconsidering the role of subsidies and how they are implemented.

The following section discusses the experiences of other countries that have adopted extensive subsidy reforms in the agriculture sector, resulting in transformed and sustainable sectors in the global agriculture industry. The experiences of New Zealand, Bangladesh and Thailand in reforming their agricultural and rice sectors have often been used as a point of reference among developing countries. Among these examples, the New Zealand agriculture sector may differ in term of land size, structure of ownership and regulation; however, the reforms provide best practices and a reference for benchmarking. This is particularly pertinent when the issue is about subsidies that reduce a country's competitiveness in the global world market. While direct comparison may not be possible, there are substantial lessons to be learned from successful reforms of the agriculture sector.

New Zealand Subsidy Reforms; Lessons to be Learned

In 2006, New Zealand announced a drastic measure on the withdrawal of subsidy from its agricultural sectors despite the fact that New Zealand farmers were operating in an environment where they were closer to the world market prices and costs than they had been for many decades. Studies by Gould (1982), Lattimore (1987), Sandry and Reynolds (1990), Rayner et al. (1991), Evans et al. (1996), Silverstone et al. (1996), Johnson and Forbes (2000), Morrison et al. (2000), Dalziel and Lattimore (2004), Meat and Wool NZ (2005), Vitalis (2005), address the success stories on how New Zealand's withdrawal of farm subsidies transformed the country's ability to compete in the global agricultural products market during the post-subsidy era.

Post-subsidy reforms have resulted in New Zealand's current incredible performance; it is estimated that the rate of total factor productivity (TFP) growth more than doubled, from 0.7% over the high subsidy period (1972-84) to 1.9% thereafter. Real farm incomes have now recovered and, in some cases, are significantly higher than they were during the period of high subsidies. What is being proposed is the creation of a free market environment which is important to farm efficiency, but this may be difficult to quantify. Due to the removal of subsidies, farmers' incomes increased while more than half of the labor force was made up of working owners. TFP was at 1.5% under the subsidy regime, and withdrawing subsidies led to 2.5% per annum increase in TFP. At that rate of productivity increase, it takes only one generation of farmers to increase income as compared to two generations under the subsidy regime.

The reforms resulted in a 25% drop in farmers' income due to debt servicing costs and the removal of fertilizer subsidies. The withdrawal of output subsidies led to declining prices among agricultural products such as meat and wool for dairy farming. Farm families opted to cut cost through loan restructuring while off-farm employment sustained the family income. Interestingly, while withdrawal of the fertilizer subsidy led to a drop in use of fertilizer, there was no significant drop in productivity. This is much influenced by the high phosphate content in the type of soil used for farming.

In line with creating long-term impact, New Zealand has strengthened its agricultural sector; agricultural share increased to 7.6% in 2002 as compared to the declining 5.7% in the first year of subsidy reform. The increase in share is at the back of an increase in value-added within the farms and does not include supporting industries for agriculture. There was a continuous consolidation of farms and strong diversification among crops. In addition, farms continued to rely less on labor as aggressive mechanization was pursued within the agriculture sectors and productivity increased by around 85%.

With this background, the government was able to structure a set of reforms that often provided prospective benefits to the farmers in the form of lower costs as they withdrew farm revenue subsidies. Institutionally, the farmers' association played a key role in strongly supporting the reforms and they continue to undertake reforms in support of the political commitments made by the government.

Lesson for Malaysia: Subsidy Reforms Beyond Political Commitments

While it may be true that subsidy reforms differ in terms of institutional and market structure, the policy on agriculture subsidy in New Zealand has also been traditionally based on strong political lobby groups among farmers. As argued by Lattimore (2006), private sectors are also part of the reform and stabilizing the macroeconomic environment is prerequisite for a successful reform process. New Zealand's experience in restructuring agricultural subsidies should provide a general framework on how such programs could affect farmers' welfare. While there is a strong indication of farmers' dependency on subsidies (inputs and price support), there is also evidence that the subsidies are ineffective in tackling emerging issues in rice production.

Other studies have suggested practical options, including redesigning the fertilizer subsidy through loans and grants as in Gambia and Bangladesh, where investment in technology and transfer of knowledge were conditional to subsidy reforms undertaken by the country in the 1980s. The unique agriculture subsidy practices in Bangladesh are micro-credit and Agriculture Input Assistance Card (smart card) for farmers. Small farms and women have access to micro-credit, whereas medium farms have access to institutional sources of credit. Many NGOs provide agriculture micro-credit to small farms, but a government-owned bank named Krishi Bank is the major source of agricultural credit. In Bangladesh, 120 local regional

NGOs and 613 microfinance institutions, including BRAC and Grameen Bank, are providing micro-credit to small farms (Bayes and Patwary, 2012; IFDA, 2018).

Similarly, Thailand has many agricultural input subsidies and credit subsidies to help farmers increase paddy productivity. However, the crop insurance in Thailand is a unique case. The crop insurance program, introduced in 1978, initially covered all kinds of natural risks for cotton. In 2007, the crop insurance program started to cover paddy production in the north-eastern region of Thailand because it is a drought-prone area. The insurance program was introduced by a state-owned bank called Agriculture and Agricultural Cooperatives (BAAC). Farmers who take loans from the BAAC bank for paddy cultivation received crop insurance for rice. In 2014, the crop insurance program for paddy was expanded to 17 provinces in Thailand (Hongo, 2015; Win, 2016). Moreover, according to Jeerachaipaisarn (2012), a micro-insurance scheme for rice was introduced in 2011 which covered six natural disasters, such as bush fire, flood, frost, drought, hail and windstorm.

The successful reforms have highlighted the following factors that contributed to success: (a) a market-driven credit program, (ii) technology transfer, (iii) a strong monitoring and evaluation system, (iv) allowance for the sharing of information among stakeholders and adjustment of programs, and (v) multi-stakeholders' role (government agencies, private sectors, NGOs, community and farmers) in providing inputs and monitoring the improved program (Osorio et al., 2011).

Policy Recommendation

Malaysia's subsidy policy among rice producers is an instrument that needs to be reviewed. The amount spent has increased significantly, and yet the desired impact, in terms of poverty issues among rice farmers and the movement towards self-sufficiency, has not been achieved. Given emerging issues in the rice sector, this study recommends a policy framework for subsidy reforms and realignment.

In regard to income redistribution, the current system also has severe drawbacks. First, farmers with the highest yield, and hence those who are most competitive in the market, receive the highest payments. Accordingly, farmers with less fertile land receive lower payments, and thus their farms face marginalization and abandonment, which could have a detrimental and irreversible impact on agricultural production. Secondly, since payments are based on area, the largest farms receive the largest total payments. Consequently, the current subsidy design may imply reverse redistribution, i.e. redistribution from the poor to the rich. There is an indication that subsidies have benefited rich farmers while smaller and marginalized farmers struggle with small farm sizes and increasing costs of production. There is also the potential of higher cost as inputs such as fertilizers and pesticides continue to be subsidized and used excessively on farmland, inevitably leading to long-term land degradation as well as environmental and health concerns.

Based on FGDs, the continuous and excessive use of inputs is deliberate because farmers struggle to keep up with yield while new problems, such as disease and weather uncertainty, emerge as factors that influenced the yearly output. This behavior can only be changed with better awareness and sensitivity among farmers. While input subsidies may not bear the private cost borne by farmers, there exists a significant social cost through government expenditure and a higher opportunity cost in terms of government resource allocation through public expenditure spending.

The reality, however, may be more complex. On one hand, more direct payments to marginal regions and poorer farmers will affect investment and may not be conducive to economies of scale; on the other hand, the current subsidy system is hurting small farms and poor farmers through reverse distribution, which is harmful to social cohesion and environmental protection. Therefore, there needs to be a tradeoff between efficiency and equity. To address this complexity and trade-off, the role of input and output markets has to be improved. The introduction of social protection programs which deal with income loss and climate change may enable the restructuring of the subsidy program. Introducing social insurance schemes which engage the private market to protect the livelihood of small farmers can lead to the implementation of a more "supportive or conditional" type of subsidy program. Subsequently, production risk can be shared with a well-informed market and social protection should be the basis of promoting efficiency and equity within the industry.

General Frameworks for Redesigning Agricultural Subsidies for Rice Production

Difficulties in assessing the precise effects of subsidies arise from the multiple objectives of the subsidy programs. It appears that the rice subsidy program may have been introduced to meet several objectives, but the same policy may remain unchanged even after some of the initial objectives have been met. For Malaysia, subsidy policies require corresponding adjustments when high cost and economies of the scale pose as structural barriers to higher productivity. In addition, a program that features open-ended subsidy favors larger producers, making it a poor instrument for tackling poverty. Therefore, effectiveness may also be constrained by design features. Table 3 shows the general framework on how the effectiveness of subsidy programs depend on design and implications of different aims for the subsidy program.

Table 3: General Frameworks for Redesigning Agricultural Subsidy for Rice

Aims	Implications for Subsidy	Exit Strategy	Alternatives and Complements
1. Increase productivity	Target the farmers who make the most use of inputs, perhaps those considered more competent, or those with better land and water.	Only when a particular level of production has been reached, but could be unending. Must be based on economies of scale	Improve marketing investment in public goods for agricultural development, especially roads, irrigation and drainage, research and extension.
2. Learning new technology	General subsidy or target the non-users and subsidize small amounts of fertilizer: benefits should be visible on half hectare plots	Use until farmers reap benefits from fertilizer: could be as little as one or two seasons.	Grant: distribution of trial packs of seeds and fertilizers, sufficient for below 1 hectare.
3. Conservation and improvement	General subsidy	May be unending if fertilizers are necessary to maintain soil quality which causes degradation.	Soil erosion control through physical works and vegetation management. Crop management practices to improve the structure of topsoil, retain and recycle nutrients.
4.Compensate for high transport costs	General subsidy, but may vary according to remoteness and load.	When transport costs have dropped sufficiently.	Invest in roads, ports, storage. Encourage competition in transport, end cartels.
5. Market too thin to achieve scale economies	General subsidy, since all farmers suffer from market failure.	To build economies of scale in transport and overcome information failures. As volume traded rise and logistical costs fall, the subsidy can be progressively withdrawn while price support remains constant.	Foster institutional innovations for careful monitoring by government to time reduction and eventual withdrawal of subsidy. May require additional public investments in roads, ports, storage.

6. Compensation for farmers too poor to afford inputs	Targeted subsidy for poor farmers or farmers with limited resources.	Use until poverty levels among farmers are reduced.	Stimulate financial intermediaries, including micro-finance and micro-insurance to allow the poor to get inputs on credit. Continue poverty reduction measures, including social protection micro/social insurance.
7. Social equity	Targeted subsidy for those who need help, by social groups, areas/regions or based on farm diversification activities.	Exit when disadvantaged groups attain a threshold income level.	Poverty reduction programs: • Social protection/social insurance and safety nets for disadvantaged, including Conditional Cash Transfer and Employment programs • Off-farm income • Crops diversification program or multifunctional agricultural practices.

Policy Recommendation (Macro Perspectives)

Subsidy reforms entail price liberalization or controlled prices of the subsidized goods and services, often during macroeconomic adjustment. The economic goals are to correct fiscal imbalances and improve allocative efficiency. Since the removal of subsidies may have adverse consequences on the poor, these effects must be analyzed and, to a feasible extent, mitigated or offset. In this context, the principal—and interrelated—issue is the speed of the price-subsidy reforms.

There is a trade-off between rapidly cutting budget-financed subsidies and avoiding an adverse impact on the poor. A one-time adjustment of prices to eliminate subsidies can yield immediate budget savings and quickly correct distortions in the resource allocations. However, it can also result in a sudden and significant drop in standards of living, especially for low-income households. The need to compensate households implies that fiscal savings from price-subsidy reforms are usually less than the amount spent on generalized subsidies before the reforms. Privatization of the input markets and other services for rice production is recommended, but such options must be complemented with a strong regulatory framework to ensure a level playing field among all industry players. The regulatory framework must continue to build integrative linkages for the farmers, compensating for their inability to gain access to the input and product markets in terms of fair price.

Gradual reforms are not without drawbacks. Aside from the fact that it takes longer to reap budgetary and economic gains, the progress under gradual reforms may falter or even be reversed. Such a failure can be avoided by publicly adopting a detailed timetable of needed measures and the options for protecting real income among poor households. Based on this perspective, the general framework stated above must include specific macro perspectives as well as the need to strengthen the social protection instruments for marginalized farmers.

Availability of Social Protection Instruments and Administrative Capacity

Compensating the poor for the elimination of subsidies requires not only resources, but also a system to deliver compensation to those who need it. Price subsidy reforms can be rapid when countries already have social protection instruments that can be adapted to the needs of the poor to accomplish the reforms. If new social safety net instruments need to be established, the administrative capacity to design and implement adequate and well-targeted social protection will affect the speed of reforms. Availability of information on the socio-economic and demographic characteristics of the poor will likewise influence the speed of reforms.

Willingness of Governments to Act on a Technically-sound Reform Package

Political considerations have an impact on whether reforms are implemented in a timely manner. In part, this is determined by the popularity of the government and the level of organization of the middle class. Even under favorable conditions, governments may opt for a slower pace of reforms in order to assess and react to unintended consequences, including adverse political repercussions, and adjust the timing and speed of the reforms accordingly. As noted above, however, this runs the risk of reform reversal. In this regard, several suggestions provided by MARDI (2018) are in line with this study:

1. **Improving the distribution, logistics and disbursement of the incentives**

   During the FGDs, farmers voiced their concerns on the tardiness and quality of subsidized inputs. Thus, a better distributive mechanism of subsidized inputs, prior to planting seasons, would be based on a schedule drawn by the authorities and agreed upon by the farmers. Issues related to low quality of subsidized inputs and the government-appointed and politically-linked company should be addressed with market-based intervention measures.

2. **Result- or performance-based incentives and subsidy packages**

   While the study by MARDI (2018) prioritizes retaining the role of fertilizers, pesticides and organic fertilizers, this study advocates for the utilization of variety seeds in improving productivity. The persistent use of fertilizers to enhance yield should be tempered with the need to move towards organic farming to gain better premium and improve the environmental quality of agricultural sectors. However, shifts towards the multi-functionality of the rice sector must be complemented by strong support for public investment in infrastructure that is expected to boost farm productivity. By extension, innovative financing mechanisms through matching grant strategies to enable small farmers to own machines may speed up the building of capital. Such a move will loosen the control of service providers over strategic services and allow farmers to work on land without depending entirely on paid labor.

3. **Strengthening subsidy support-based yield and productivity**

   A production-based support program, as opposed to income support, will augur well with the World Trade Organization framework as productivity-based support tends to be more sustainable in the long-term. An aggressive approach to technology or knowledge transfer will be initiated through the premier project that contributes towards productivity, and better yield must be extended to non-granary areas. The technology package may also include extension services, improvement in physical and marketing infrastructure, small and on-site technology suitable for the typographic landscape of farms and skill-based knowledge transfer program among the farmers and front line offers. These would be low to moderate cost programs that are expected to generate long and sustainable impact among the farmers and in the industry.

Assess Gains from Price-subsidy Reforms

The prime issue in Malaysia's rice sector has been the failure to address stagnant productivity and escalating cost, which are factors that contribute to farmers' welfare. The inverse correlation between productivity and escalating cost has depressed the farmers' income and the rice farmers have become one of the most vulnerable group of B40. It is a paradox that the government has spent substantial amounts of public expenditure on subsidizing farmers while the government intervention in the input and output markets—through government-appointed middle men—has distorted both markets. Such market control has created structurally weak input and output markets that distort the local rice industry, and stifle the effort to achieve self-sufficiency and food security in Malaysia.

Impact of Subsidy Reform: Monitoring and Evaluation Mechanism

There must be continuous monitoring of social outcomes during the implementation of subsidy reforms. In many countries, weak governance and administrative capacity hamper the targeting and delivery of benefits. Weak governance can divert or waste the resources allocated for price subsidies. Weak administrative capacity reflects the lack of cost-effective mechanisms to channel income transfers or targeted price subsidies to the designated population groups, and can be rooted in such factors as insufficient information on the poor and lack of equipment. Even where administrative capacity exists, targeting and delivery can be difficult. Determining eligibility on the basis of income may lead to missing targeted benefits if the administrative capacity is weak.

Studies indicate that subsidies have an impact over the short- to medium-term, promoting input use, raising output and thus reducing poverty (Kari et al., 2017; Löfgren and El-Said, 2001). As such, there is a need to reduce the cost of programs by using alternative instruments in order to be more effective. It is possible that the cost could be higher, given that the pursuit of other activities—for example, the areas of health and education—has been compromised. This study indicates that subsidy programs may no longer have any long-term effect and thus the reforms may require complementary investments through high-yielding varieties and irrigation, which may be more effective than the continuous provisions of fertilizers and agrichemical needs to farmers.

Targeting and rationing may be part of an attempt to focus the subsidy program on achieving the intended goals, and these steps may be accompanied by increasing cost of administration and monitoring. Despite these challenges, targeting and rationing may be designed based on farm size, location, productivity, application of specific techniques or conditionality on the quality of rice. This is particularly important in ensuring that all cost reduction measures will benefit small farmers as they dominate in terms of the number of farms in the study area.

Conclusion

The structure of Malaysia's rice industry and the government's regulatory strategies on the industry represent a relationship that has had a significant impact on the development of the rice sector. Government intervention policies have deep-rooted origins in the political structure that has developed since the country's independence. Notwithstanding the government's efforts, if the country attempts to achieve rice self-sufficiency, it would come at high financial and societal costs. In relation to cost, the yield has been stagnant due to smaller land sizes and deteriorating quality of land due to over-farming.

There is strong justification for the government to rationalize subsidy for rice production in order to be more sustainable in the long-term. There may be difficulties in achieving various conflicting objectives in the rice industry, given the current structure of the subsidy program. The off-farm market structure, which includes the marketing channel and discount rate received by the farmers, may continue to stifle productivity gain within the rice production sector. Relaxing the regulations, however, may benefit consumers but prove detrimental to farmers. In fact, any form of subsidy or price support policies may have distorted effects on market efficiency and competitiveness. Price support must be focused on compensation strategies for poor households, as well as include greater targeting for income transfer to eliminate leakages and market distortion effects. Political support is critical to the success of reform. Malaysia must not wait for an impending crisis; we must be bold enough to undertake constructive reforms as the current structure may not be financially sustainable.

In brief, Malaysia's rice farmers receive almost all of the farms inputs that they need through the subsidy package. Excessive handouts and failure to monitor, assess and evaluate the effectiveness of the subsidy package may result in abuse and misuse of public funds. The current government that won a landslide victory in May 2018 should unbuckle the ineffective strategies and realign policies to achieve the self-sustainable needs and domestic food requirements as listed under the NAP 2010-2020. Reforms must also include the dynamic role of markets while supporting strategies through technology and innovation, better targeting of subsidy programs, monitoring and evaluation of subsidy programs as well as governance, which will affect the welfare of the farmers, millers, traders as well as consumers. However, such reforms must be simultaneously addressed with several other sectoral reforms as a holistic and strategic overview of the reform process is required. In that regard, examples of successful reforms in other countries emphasize the need for a systematic policy framework to deal with new issues that will inevitably arise from reforms. In addition, a subsidy review may provide a platform to promote reforms with strong emphasis on the long-term impact of addressing socio-economic disparity and food security in Malaysia. The supporting role of the private sector is crucial in carrying out the reforms. In conclusion, this study aims to provide some baseline information that can be part of framework for subsidy reform process in the rice production sector in Malaysia.

Bibliography

Alam, Md Mahmudul, Chamhuri Siwar, Basri Talib, Mazlin Mokhtar, and Mohd Ekhwan Toriman. "Climate change adaptation policy in Malaysia: Issues for agricultural sector." African Journal of Agricultural Research 7, no. 9 (2012): 1368-1373.

Ali, Roslina Binti. "Economic and Policy Evaluations and Impacts of the National Rice Development Policy Strategies in Malaysia: Self-Sufficiency, International Trade, and Food Security." (2017).

Amin Mahir Abdullah, Fatimah Mohamed Arshad dan Alias Radam. "Kajian Impak Skim Subsidi Baja Padi Kerajaan Persekutuan (SSBPKP) dan Skim Subsidi Harga Padi (SSHP)." Institut Kajian Dasar Pertanian dan Makanan. Universiti Putra Malaysia. (2009).

Amin, Mohd. Annuar bin Hj. Md. "Subsidi dan Kesannya ke atas Petani Padi." Jurnal Ekonomi Malaysia , 19, (1989): 17-30

Arshad, Fatimah Mohamed, Emmy Farha Alias, Kusairi Mohd Noh, and Muhammad Tasrif. "Food security: Self-sufficiency of rice in Malaysia." International Journal of Management Studies 18, no. 2 (2011): 83-100.

Arshad, Fatimah Mohammad. "An evaluation of the Malaysian padi and rice market structure, conduct and performance." Pertanika 5 (1982): 164.

Athukorala, Prema-Chandra, and Wai-Heng Loke. "Agricultural Incentives in Malaysia: Trends, Patterns and Policy Implications." Malaysian Journal of Economic Studies46, no. 2 (2009).

Aziz, Nurul Aien Binti Abd, Noreen Noor Binti Abd Aziz, Yon Bahiah Wan Aris, and Nurul Ashykin Binti Abd Aziz. "Factors influencing the paddy farmers' intention to participate in agriculture Takaful." Procedia Economics and Finance 31 (2015): 237-242.

Bayes, Abdul, and Fazlul Karim Patwary. "An empirical analysis of the impact of agricultural credit from Banks and Micro Finance Institutions (MFIs) in GDP growth: Bangladesh Perspective." Bangladesh Bank (2012).

Dalziel, Paul, and Ralph G. Lattimore. The New Zealand macroeconomy: Striving for sustainable growth with equity. Oxford University Press, USA, 2004.

Daño, Elenita C., and Erna D. Samonte. "Public sector intervention in the rice industry in Malaysia." State intervention in the rice sector in selected countries: Implications for the Philippines (2005): 187-216.

Davidson, Jamie S. "Stagnating yields, unyielding profits: The political economy of Malaysia's rice sector." Journal of Southeast Asian Studies 49, no. 1 (2018): 105-128.

Evans, Lewis, Arthur Grimes, Bryce Wilkinson, and David Teece. "Economic reform in New Zealand 1984-95: The pursuit of efficiency." Journal of Economic Literature 34, no. 4 (1996): 1856-1902.

Fatah, Fazleen Abdul. "Competitiveness and Efficiency of Rice Production in Malaysia." PhD diss., Georg-August-Universität Göttingen, 2017.

Gould, John Dennis. The Rake's Progress?: The New Zealand Economy Since 1945. Auckland: Hodder and Stoughton, 1982.

Harun, Rosnani, Syahrin Suhaimee, Mohd Zaffrie Mohd Amin, and Nurul Huda Sulaiman. "Benchmarking and prospecting of technological practices in rice production." Economics and Technology Management Review no.10 (2015): 77-88.

Hazel, Peter, Coulin Poulton, Steve Wiggins and Andrew Dorward, "The Future of Small Farms: Trajectories and Policy Priorities," World Development no. 10 (2010) :1349–1361

Hongo, Takashi. "Climate Insurance for Crops: Case Study of Weather Index Insurance for Agriculture in Thailand." (2016).

IFDA. "Smallholder Agricultural Competitiveness Project (SACP): Bangladesh." Final project design reports No: 4735-BD. International Fund for Agricultural Development (IFDA). (2018).

Isik, Murat. "Incentives for technology adoption under environmental policy uncertainty: implications for green payment programs." Environmental and resource economics 27, no. 3 (2004): 247-263.

Jafari, Yaghoob, Jamal Othman, and Arnim Kuhn. "Market and welfare impacts of agri-environmental policy options in the Malaysian rice sector." Malaysian Journal of Economic Studies 54, no. 2 (2017): 179-201.

Jamaludin, Nor Lelawati, Amer, Afizan, and Hasan, Helmy Fadlisham Bin Abu. "A study on Factors Affecting Rice Production in Malaysia," iCast Conference, UiTM Shah Alam, (2010).

Jeerachaipaisarn, T. "Recent developments of crop insurance in Thailand." (2012).

Johnson, R. W. M., and R. N. Forbes. "Recent productivity trends in New Zealand primary sectors." MAF Technical Paper2000/20 (2000).

Mohd Atif Johari, Mohd Atif, Fadzilah Majid Cooke and Novel Lyndon . " Faktor-faktor Sosial Yang mempengaruhi Productiviti Penannam Padi. Kjain di Kampung Peladang, Mukim Kayang, Perlis." Journal of Social Sciences, no. 1(2016) 1:20

Kamarul, Nur Badriyah Zamana, Alia, Jamal, and Othman, Zakirah. "Perbandingan Sosioekonomi Penerima Inovasi Sistem Intensifikasi Padi dan Projek Estet Padi." Jurnal Teknologi, 15(3), (2015): 163-170.

Kari, Fatimah Binti, Muhammad Mehedi Masud, and Md Khaled Saifullah. "Subsidy Rationalisation for General Purpose Flour: Market and Economics Implications." The Journal of Asian Finance, Economics and Business 4, no. 2 (2017): 25-36.

Khazanah Research Institute. "Monograph of Paddy Smallholders in Bario," (2018).

Kuminoff, Nicolai V., and Ada Wossink. "Why isn't more US farmland organic?." Journal of Agricultural Economics 61, no. 2 (2010): 240-258.

Kwieciński, Andrzej, and Bossard, Florence. "VietNam: Estimates of Support to Agriculture." Organisation for Economic Co-operation and Development. (2017).

Lattimore, Ralph. "Farm Subsidy reform dividends." In North American Agrifood Market Integration Consortium Meetings, vol. 31. 2006.

Lofgren, Hans & El-Said, Moataz, 2001. "Food subsidies in Egypt: reform options, distribution and welfare," Food Policy, no. 26 (2001): 65-83.

Malaysia. "10th Malaysia Plan: 2010-2015." (2010).

MARDI. Laporan Akhir. Kajian Impak Dasar Jaminan Bekalan Makanan/Skim Insentif Pengeluaran Padi, Pusat Penyeldikan Ekonomidan Saisn Sosial, Institut Penyeldikan dan Kemanjuan Pertanian Malaysia. 2018.

Michaely, Michael, Armeane M. Choksi, and Demetris Papageorgiou, eds. Liberalizing foreign trade. Basil Blackwell, 1991.

Ministry of Finance. "Bangladesh Economic Review 2017." Ministry of Finance, Dhaka, Bangladesh. (2017)

Mustapha, Zulkifly. "Agricultural Subsidies and Modernization of Smallholder Agriculture: Impact and Implications on Padi Farming in Peninsular Malaysia." Akademika 19, no. 1 (1981).

Najim, M. M. M., T. S. Lee, M. A. Haque, and M. Esham. "Sustainability of rice production: a Malaysian perspective." Journal of Agricultural Sciences 3, no. 1 (2007).

Nee, Au Yong Hui. "Supply Chain Model for Rice in Malaysia–Basics and Challenges." In ECER Regional Conference. 2008.

Ng, Boon-Kwee, Amirah Shazana Magli, Chan-Yuan Wong, and Chandran VGR. "Localised learning in the Malaysian rice cluster: proximity, social capital and institutional dynamics." International Development Planning Review 39, no. 2 (2017): 163-185.

Ninan, K. N. "Labour Use in Agriculture: Case Studies of Tapioca and Paddy." Economic and Political Weekly (1984): A199-A204.

Nordin, Shahrina, Shuhaida Mohd Noor, and Mohd Shamburi bin Md Saad. "Innovation Diffusion of New Technologies in the Malaysian paddy fertilizer industry." Procedia-Social and Behavioral Sciences 109 (2014): 768-778.

NST, 28th June 2018.

Osorio, Camilo Gomez, Dwi Endah Abriningrum, Enrique Blanco Armas, and Muhammad Firdaus. Who is benefiting from fertilizer subsidies in Indonesia? The World Bank, 2011.

Pakiam, Geoffrey. "Rising Politicians, Persistent Dilemmas: How Will Malaysia's Agricultural Policies Evolve under Pakatan Harapan?". ISEAS Perspective 52/2018, (2018).

Parvin, Jhinuk. "Agricultural input assistance card: direct input subsidy disbursement." Unnayan Onneshan: The Innovators, Centre for Research and Action for Development (2011): 1-9.

Paul, Catherine J. Morrison, Warren E. Johnston, and Gerald AG Frengley. "Efficiency in New Zealand sheep and beef farming: the impacts of regulatory reform." Review of Economics and Statistics 82, no. 2 (2000): 325-337.

Rahman, M. T. "Role of agriculture in Bangladesh economy: uncovering the problems and challenges." International Journal of Business and Management Invention 6, no. 7 (2017): 36-46.

Ramli, Nurul Nadia, Mad Nasir Shamsudin, Zainalabidin Mohamed, and Alias Radam. "The impact of fertilizer subsidy on Malaysia paddy/rice industry using a system dynamics approach." International Journal of Social Science and Humanity 2, no. 3 (2012): 213.

Rodrigo, Chatura, and Lakmal Abeysekera. "Why the fertilizer subsidy should be removed: key factors that actually derive the fertilizer demand in paddy sector of Sri Lanka." Sri Lanka J Econ Res 3 (2015): 71-98.

Sandrey, Ron, and Russell Reynolds. Farming without subsidies: New Zealand's recent experience. Ministry of Agriculture and Fisheries, 1990.

Silverstone, Brian, Alan Bollard, and Ralph G. Lattimore. A study of economic reform: The case of New Zealand. Vol. 236. North-Holland, 1996.

Sirin, Tapsir Bin. 'Senario Ekonomi Pengeluaran Padi di Malaysia.' Persidangan Padi Kebangsaan Dorsett Grand, Subang, Selangor, 2017.

Siwar, Chamhuri, Nor Diana Mohd Idris, Muhammad Yasar, and Golam Morshed. "Issues and challenges facing rice production and food security in the granary areas in the East Coast Economic Region (ECER), Malaysia." Research Journal of Applied Sciences, Engineering and Technology 7, no. 4 (2014): 711-722.

Suasih, Ni Nyoman Reni, I. Yasa, and Nyoman Mahaendra. "Indonesian eat rice, but why farmers are poor?." Scientific Papers: Management, Economic Engineering in Agriculture & Rural Development 17, no. 3 (2017).

Solaymani, Saeed, Fatimah Kari, and Roza Hazly Zakaria. "Evaluating the Role of Subsidy Reform in Addressing Poverty Levels in Malaysia: A CGE Poverty Framework." The Journal of Development Studies 50, no.4 (2014).

Tey, Y. S. "Malaysia's strategic food security approach." International Food Research Journal 17, no. 3 (2010): 501-507.

Thang, Tran Cong, and Thi Bao. "Rice policy review in Vietnam." FFTC agricultural policy database (2015).

The Edge. August 11th, 2018.

The Edge. June 11th, 2018.

The Edge. June 12th, 2018.

Yong, H. "Supply Chain Model for Rice in Malaysia," Paper Presented at ECER Regional Conference, 2008. – BASICS AND CHALLENGES

USDA. Foreign Agricultural Services. 2017.

Vengedasalam, Deviga, Michael Harris, and Gordon MacAulay. "Malaysian rice trade and government interventions." Paper presented at 55th Annual Conference of the Australian Agricultural and Resource Economics Society. Melbourne, Australia. 2011.

Vitalis, Vangelis. "The New Zealand Experience." Subsidy Reform and Sustainable Development: Economic, Environmental and Social Aspects (2005).

Wiggins, Steve, and Jonathan Brooks. "The use of input subsidies in developing countries." In Global Forum on Agriculture, pp. 29-30. 2010.

Win, Hnin Ei. Crop Insurance in Thailand. FFTC agricultural policy database. 2016.

Wong, Larry CY, Suraya A. Emrus, Bashirah Md Bashir, and John YS Tey. "Malaysian padi and rice industry: Applications of supply chain management approach." In Proceedings of the National Rice Conference Theme: Strengthening Food Security Through Sustainable Rice Production, June, pp. 28-30. 2010.

WTO. Trade Policy Review. World Trade Organization (WTO), 2014.

Notes

Notes

IDEAS

INSTITUTE FOR DEMOCRACY AND ECONOMIC AFFAIRS

IDEAS is inspired by the vision of Tunku Abdul Rahman Putra al-Haj, the first Prime Minister of Malaysia. As a cross-partisan think tank, we work across the political spectrum to improve the level of understanding and acceptance of public policies based on the principles of rule of law, limited government, free markets and free individuals. On 2 September 2016, IDEAS was ranked as the 17th think tank to watch globally in a survey of more than 6,800 think tanks in 143 countries by the University of Pennsylvania's 2015 Global Go To Think Tank Index Report.

Please support us by making a donation. You can make a contribution by cheque payable to "IDEAS Policy Research Berhad" or by transfer to our account CIMB 8008852042. We can only survive with your support.

IDEAS Policy Research Berhad
The Lower Penthouse
Wisma Hang Sam, 1, Jalan Hang Lekir 50000 Kuala Lumpur

www.ideas.org.my
Reg №: 1219187-V

ISBN 978-967-16674-0-8

9 789671 667408

Selection of IDEAS' Publications (2017 - 2018)

Policy Ideas

Policy Paper No.57: E-hailing regulations: striking the right balance by Laurence Todd, Adli Amirullah and Chiang Hui Xing (November 2018)

Policy Paper No.56: Economic Benefits of ASEAN Single Aviation Market by Adli Amirullah (November 2018)

Policy Paper No.55: Powering the future: Malaysia's energy policy challenges by Renato Lima de Oliveira (November 2018)

Policy Paper No.54: Countering Illicit Trade: Lessons from Abroad by Ali Salman, Adli Amirullah, Amelia Lim (October 2018)

Policy Paper No.53: Impacts of Investment from China in Malaysia on the Local Economy by Laurence Todd, Meghan Slattery (October 2018)

Policy Paper No.52: Strengthening the ASEAN Single Aviation Market: Implementing the AEC Blueprint 2025 for Air Transport by Dr Jae Woon Lee (September 2018)

Policy Paper No.51 : Affordable Housing and Cyclical Fluctuations: The Malaysian Property Market by Carmelo Ferlito (July 2018)

Policy Paper No.50 : Create or Nurture? Lessons from Cyberjaya: Malaysia's Promised Silicon Valley by Ali Salman (July 2018)

Policy Paper No. 49: Intellectual Property Rights in ASEAN: Developments and Challenges by Marolita Setiati Anwar, and Adi Darmawan (July 2018)

Policy Paper No. 48: Payment Card Reform Framework (PCRF): A Policy Evaluation Study by Dr. Teo Wing Leong (May 2018)

Policy Paper No. 47: Anti-profiteering Regulations: Effects on Consumer Prices & Business Margins by Hafiz Shams (December 2017)

Policy Paper No. 46: Water Provision in Malaysia Privatise or nationalise? by Wan Saiful Wan Jan (November 2017)

Policy Paper No. 45: Government-Linked Companies: Impacts on the Malaysian Economy by Jayant Menon (December 2017)

Policy Paper No. 44: Illicit Trade in Malaysia: Causes & Consequences by Adli Amirullah, Amirah Fazira and Ali Salman (October 2017)

Policy Paper No. 43: Reining in the IGP's Power: Decentralisation as an option by Nicholas Ideas (September 2017)

Policy Ideas No. 42 : Will Our Public Universities Have Financial Autonomy? By Wan Saiful Wan Jan (May 2017)

Policy Ideas No. 41: History and Epistemology of Universities by Munif Zarirruddin Fikri Nordin (May 2017)

Policy Ideas No. 40 : The History of University Autonomy in Malaysiam by Dr. Chang-Da Wan (May 2017)

Policy Ideas are IDEAS' regular publications that introduce and propose ideas for policy reforms based on analysis of existing policies or best practices.

IDEAS
INSTITUTE FOR DEMOCRACY AND ECONOMIC AFFAIRS

Institute for Democracy and Economic Affairs (IDEAS)
The Lower Penthouse. Wisma Hang Sam, 1, Jalan Hang Lekir 50000 Kuala Lumpur

Website: ideas.org.my Tel: +603 2070 8881 / 8882 Fax: +603 2070 8883