

Knowledge transfer programme under 11th Malaysia Plan: MARDI's success story

(Pemindahan pengetahuan teknologi di bawah Rancangan Malaysia Ke-11: Kisah kejayaan MARDI)

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Abstract

Food processing is among the leading industries run by micro and small entrepreneurs in Malaysia, with over 95% of the industry constituted by micro, small and medium enterprises (SMEs). One of the Malaysian government agencies involved in the Eleventh Malaysia Plan (11th MP) is MARDI, which targets 250 new entrepreneurs through a development programme that offers advisory and guidance services to entrepreneurs. A study on this programme's success was undertaken with 196 entrepreneurs who participated in MARDI Entrepreneur Development Programme. Most of the entrepreneurs sought advice (35.1%), attended courses (22.6%) and applied for a grant through MARDI (20.2%). Further technical advice sought by the entrepreneurs is on packaging and labelling (43%), product quality and enhancement (42%) and food processing technology (35%). Among the entrepreneurs' aims is to increase their profit substantially, especially through the attained technical advisory. MARDI also contributes 31.7% on average towards the success of entrepreneurship. Therefore, MARDI Entrepreneur Development Programme has successfully fulfilled its role in transferring knowledge to entrepreneurs to increase their income.

Introduction

In 2019, SME's contribution to Malaysia's Gross Domestic Product (GDP) was 38.9%, with a value of RM552.3 billion (Department of Statistics Malaysia 2019). The Malaysian Agricultural Research and Development Institute (MARDI) is one of the public research organisations involved in developing entrepreneurs in Malaysia. MARDI Entrepreneur Development Programme is currently led by the Technology Transfer and Entrepreneur Development Centre, which offers advisory and guidance services to all registered and non-registered entrepreneurs with MARDI. MARDI offers one-off advice,

mentoring, technical assistance and MARDI Agropreneurs through the Ministry of Agriculture and Food Industry (MAFI) Agropreneurs programme. Apart from that, MARDI also provides facilities such as incubators, testbeds and model farms for entrepreneurs' usage.

Under the 11th Malaysia Plan (11th MP) 2016 – 2020, MARDI received an allocation of RM15 million to assist entrepreneurs in various development aspects such as mentoring service, field training, apprenticeship and even factory layout. This allocation is to help entrepreneurs in terms of knowledge development, product enhancement and

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factory improvement to enhance product quality and increase production. MARDI's performance in transferring technology to entrepreneurs is exceptionally high in traditional cakes (Nik Rahimah 2017), bakeries (Nik Rahimah 2017) and conventional foods (Rasmuna 2017). The Agropreneur Programme under MARDI has also been described as successful in transferring knowledge between entrepreneurs (Mohd Zafrie 2018). A study on how MARDI impacted the advancement of entrepreneurs was conducted in 2019 to explore the effects of MARDI's efforts and increase the income and quality of entrepreneurial businesses. The study's objectives are to examine the impacts or benefits received by entrepreneurs that affect their performance.

Methodology

An empirical assessment was used to meet the objectives of the study. Secondary and primary data were collected and analysed using quantitative and qualitative analysis methods. Secondary data and information related to the participants of MARDI Entrepreneur Development Programme under the 11th Malaysia Plan were obtained concerning those who sought advice, assistance and all services offered by MARDI Guidance Entrepreneur Programme, MARDI Agropreneur and others. Primary data were collected after identifying the participants and entrepreneurial areas under MARDI Entrepreneur Development Programme. This study used stratified sampling to obtain secondary information according to a particular zone in Malaysia. Surveys were conducted on all programme participants, comprising entrepreneurs, using a structured questionnaire that consists of seven sections, as follows:

- Part A = Entrepreneur background
- Part B = MARDI Entrepreneur Programme
- Part C = Impact of MARDI Entrepreneur Development Programme
- Part D = Impact of technology assistance

- Part E = MARDI Entrepreneur Development Programme Advisor
- Part F = Advisory service of agencies other than MARDI
- Part G = Problems and suggestions related to the enterprise

Descriptive statistical methods were performed for analysis purpose, focusing on the use of frequency and percentage. This analysis was to obtain the frequency of entrepreneurs' answer choices in describing MARDI Entrepreneur Development Programme's capabilities. This information was then scheduled and graphed to provide a more comprehensive picture (Zikmund et al. 2009).

Findings and discussion

The majority of the respondents were male (53%). About 41% of the respondents were 31 – 40 years old, followed by those in the 20 – 30 and 41 – 50 years age ranges, with 23% each. In terms of education, 35% of the respondents graduated from university, 31% attended secondary school and 29% had a diploma.

Most of the respondents (71%) operated their business at the enterprise level, followed by those operating as a company or Sdn. Bhd. (23%), while 6% were unregistered. The majority of the entrepreneurs (74.7%) had less than 10 years of experience. Most respondents started cooperating with MARDI during the 11th MP (67.5%), followed by 26.2% during the 10th MP. Very few entrepreneurs started collaborating with MARDI during the 5th MP (*Table 1*).

Among the services regularly seek by the entrepreneur are advice (35.1%), attending courses held by MARDI (22.6%), applying for grants through MARDI (20.2%), seeking processing technology (10.8%) and using the testbed facilities (9.1%) (*Figure 1*).

A further type of technical advice and services that are obtained from MARDI is

Table 1. Demography profile

Item	n	%
Sex		
Male	103	53%
Female	93	47%
Age*		
20 – 30 years	42	23%
31 – 40 years	74	41%
41 – 50 years	41	23%
51 – 60 years	20	11%
> = 61 years	5	3%
Education level		
Primary school	4	2%
Secondary school	61	31%
Diploma/STPM/Cert.	57	29%
Degree and above	68	35%
Others	6	3%
Business status		
Enterprise	139	71%
Sdn. Bhd.	45	23%
Unregister	12	6%
Experience*		
<10 years	142	74.7%
10 – 20 years	39	20.5%
20 – 30 years	8	4.2%
30 – 40 years	1	0.5%
The year started cooperative with MARDI*		
5 th MP (1986 – 1990)	2	1.0%
8 th MP (2001 – 2005)	1	0.5%
9 th MP (2006 – 2010)	9	4.7%
10 th MP (2011 – 2015)	50	26.2%
11 th MP (2016 – 2020)	129	67.5%

*Sum of the respondent didn't accumulate to 196 as the respondent didn't answer the questions.

in packaging and labelling (43%), product quality and enhancement (42%) and food processing technology (35%) (Figure 2).

The Entrepreneur Development Programme by MARDI had a significant impact, especially in helping the entrepreneurs to increase their profits. The results show a significant increase in income among micro-entrepreneurs based on a comparison of the sales between when they started collaborating with MARDI and

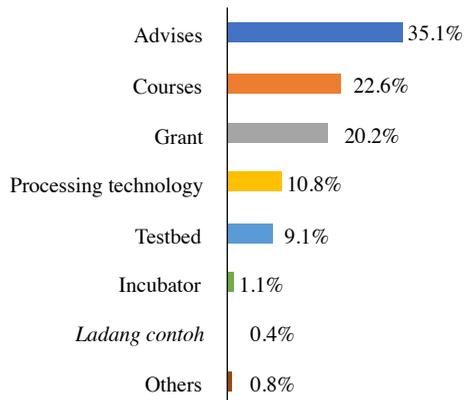


Figure 1. Types of services obtained from MARDI

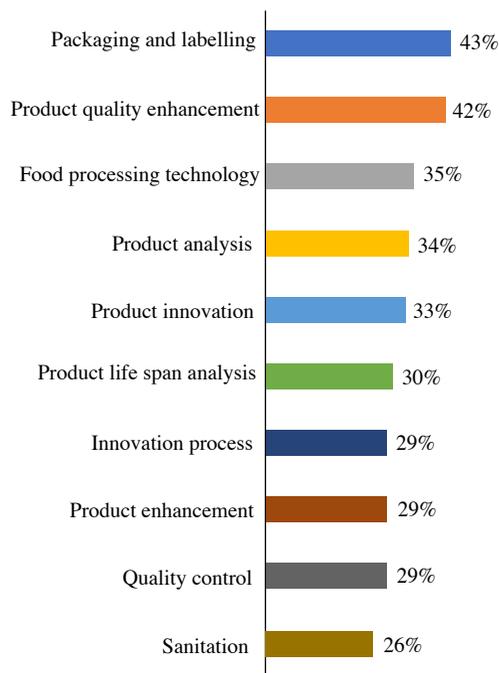


Figure 2. Top 10 technical advises and extended services obtained from MARDI

the current sales level. Some enterprises managed to increase their income high enough to reach the next category (small category), but others remained within the same category. However, the enterprises within the small category experienced reductions in sales, albeit insignificant, and none of them experienced losses (Table 2).

Figure 3 shows the breakdown of the number of entrepreneurs by business size

Table 2. Pair T-test on current sale and previous sale after starting with MARDI

Paired Samples Testa								
Current sale – previous sale	Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Micro	185032.36	496758.82	39150.07	107714.80	262349.91	4.726	160	.000
Small	-227506.40	5092693.49	900269.52	-2063618.21	1608605.39	-.253	31	.802

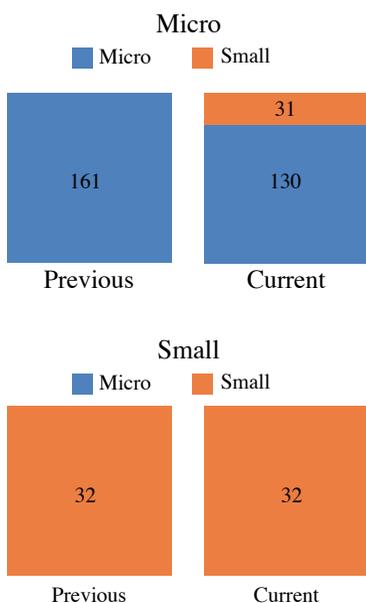


Figure 3. Changes in entrepreneurship size (micro and small) during with MARDI (num. of the entrepreneur)

(micro and small). For micro enterprises (those with total annual sales below RM300,000), out of 161 entrepreneurs who approached MARDI at the early stage of their business, 31 progressed to the small enterprise category while others remained as micro-entrepreneurs. Meanwhile, none of the small enterprises (those with total annual sales of RM300,000 – RM15,000,000) that joined MARDI at the small-size stage progressed to the medium-size category throughout the 11th MP. This finding indicates that MARDI is more relevant in helping micro-entrepreneurs as they are still new in business and need guidance to

progress further. The small-size enterprises could not elevate themselves to the medium-size category as their revenue did not reach RM15 million per year. However, MARDI continues to support them to ensure that they can make profits.

Apart from increasing entrepreneurs' incomes, MARDI also contributes to entrepreneurs' success in general. Various factors contribute to the success of an enterprise, including the availability of advisory services and guidance from relevant parties in developing their business. In this study, entrepreneurs' views were asked based on four categories of potential contributors, namely the entrepreneurs themselves, MARDI, government agencies besides MARDI and the private sector. The entrepreneurs thought that MARDI had contributed about 31.7% to their companies' overall growth (Figure 4). In monetary terms, this percentage is equivalent to RM41.6 million of the total revenue of RM131.1 million (Table 3). Even though this success does not represent the entrepreneurs' actual success that resulted from their collaboration with MARDI, it highlights the contribution made by MARDI through its assistance and support to entrepreneurs.

Recommendation and conclusion

The developments under MARDI Entrepreneur Development Programme, such as MARDI Guidance Entrepreneur, MARDI Agropreneur and service assistance (test-beds and incubators), has helped MARDI entrepreneurs to increase

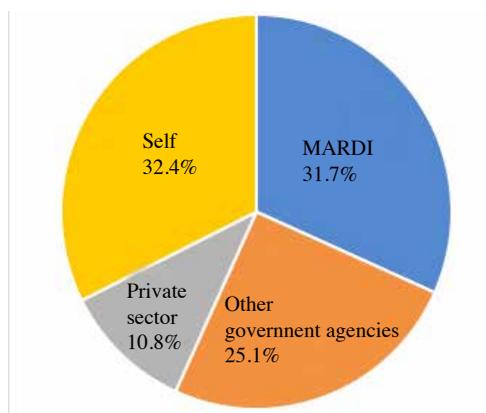


Figure 4. Breakdown of contributions toward entrepreneurial enterprises

Table 3: Breakdown of contribution value based on the breakdown of contributions

Item	%	RM
MARDI	31.7%	41.6 M
Other government agencies	25.1%	32.9 M
Private sector	10.8%	14.2 M
Self	32.4%	42.5 M
Total	100.0%	131.1 M

their income. Support and assistance are provided to entrepreneurs through advisory services, workshops, courses and various other approaches to help them mainly on advisory services guidance, packaging, labelling, product quality improvement, food processing technology and product analysis. Therefore, the current services provided by MARDI to entrepreneurs should be continued. It is expected that this programme's benefits will be further expanded through direct collaborations with relevant government agencies and the private sector to formulate a comprehensive development programme encompassing

technical aspects and entrepreneurial knowledge (accounting, administration and business management).

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Abstrak

Industri pemprosesan makanan adalah salah satu industri terkemuka di Malaysia yang mana sebanyak 95% merupakan pengusaha mikro, kecil dan sederhana (PKS). MARDI juga merupakan salah satu agensi kerajaan yang terlibat dalam Rancangan Malaysia ke-11 yang menyasarkan seramai 250 usahawan baharu melalui Program Pembangunan Usahawan MARDI yang menawarkan khidmat nasihat dan bimbingan kepada usahawan. Satu kajian telah dijalankan mengenai kejayaan program ini bersama dengan 196 usahawan di bawah MARDI. Antara perkhidmatan yang diperolehi daripada MARDI adalah mendapatkan khidmat nasihat (35.1%), mengikuti kursus (22.6%) dan memohon geran melalui MARDI (20.2%). Nasihat teknikal lanjut pula banyak dirujuk untuk khidmat nasihat teknikal adalah pembungkusan dan pelabelan (43%), kualiti dan peningkatan produk (42%) dan teknologi pemprosesan makanan (35%). Melalui bantuan-bantuan ini, secara tidak langsung memberikan kesan yang signifikan dalam membantu usahawan dalam meningkatkan pendapatan mereka. MARDI juga menyumbang sehingga 31.7% (secara purata) ke arah kejayaan keusahawanan secara keseluruhan. Oleh itu, Program Pembangunan Usahawan MARDI telah berjaya mencapai tujuannya dalam memindahkan pengetahuan kepada pengusaha dalam usaha meningkatkan pendapatan mereka.