

# IDENTIFYING RISKS OF FINANCING FOR AGRO PROJECTS IN ISLAMIC BANKS

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**Abstract—** Risk and uncertainty are inherent in agro projects and commodity supply chains. Given the pervasiveness of risks, farmers, agro-entrepreneurs, international agencies, and banking institutions are increasingly seeking effective and sustainable strategies and approaches to mitigate, transfer, or cope with these inherent risks. The methodology of this paper is through quantitative research based on questionnaires to identify patterns of agro-entrepreneurs in facing various types of risks. The general finding of this paper shows that agro-entrepreneurs faced various risks, which also shows there is a need to have proper Shariah-compliant financing for their agro projects through Islamic banking institutions.

**Index Terms—** Risks; agro projects; agriculture financing; Islamic banks.

## I. INTRODUCTION

There are several risks that businessmen had to go through in daily business work inclusive for agro-entrepreneur. Agro-projects (agriculture-based projects) are no exception, whereby most of these risks had negative effects towards every entrepreneur's agro project. It is a very risky business due to uncontrollable elements within it with unexpected returns, which may cause problems and loss [1]. Most entrepreneurs may find it hard to encounter these risks, but as time passes by, they will get familiar and know common risks that they may encounter.

In addition, the loss caused from the risks may halt the progress of agro-projects and also may involve monetary funds to accommodate it. There are several banking institutions in Malaysia that offered financial supports to agro-entrepreneurs [2]. Thus, agro-entrepreneurs who finance their projects through banks need to use some part of the funds to cover the loss, but may have to deal with shortage of funds for other uses, causing the financing schemes failed to fulfill the entrepreneurs' needs as initially planned.

Therefore, this article aims to identify risks associated with agro-projects among agro-entrepreneurs. After conducting analysis, the researcher will attempt to suggest and determine the best financing mechanism to help and support entrepreneurs and also will form new and profitable financing methods as a guidance and reference for Muslim entrepreneurs and Islamic banking institutions in getting and providing funds for any initiatives related to agribusiness that complied with Shariah law.

## II. LITERATURE REVIEW

Islam and entrepreneurship are closely connected with each other. In fact, there are several valid dalils from the Holy Quran and Hadith which mention about business and its benefits [3]. Nevertheless, it is also recommended for any Muslim entrepreneurs to use only Islamic financing instruments which are Shariah-compliant to go along with their businesses including agro projects. One of the roles of Islamic financing in agriculture is to prevent the involvement of haram elements while funding agriculture-based projects [4].

In Malaysia, there are few Islamic banks or Islamic windows of conventional banks that offer Islamic financing facilities for agro entrepreneurs in agriculture. These banks are Agro Bank (previously known as Bank Pertanian Malaysia Berhad), Bank Kerjasama Rakyat Berhad Malaysia Berhad (commonly known as Bank Rakyat) and Maybank Islamic Berhad [5].

Lack of financing is one of the main reasons why agriculture industry cannot be developed further in Malaysia and elsewhere. Furthermore, both Islamic and conventional banking system are not intensively provide funding to agriculture or due to several factors, including risk of agriculture, incompatible sources of financing, lack of banking experts and people marginalizing the agriculture sector [6]. Until now, Agro Bank is the only bank that able to provide funding and financing facilities to Agro entrepreneurs intensively, although the bank should introduce more comprehensive Islamic banking products with different Shari'ah concepts [7].

Meanwhile, in Islam, humans had been commanded by Allah to work on Earth (i.e.: land), including agriculture and food production, which are promised to be the most halal income for mankind. The teachings and guidance mentioned in al-Quran and as-Sunnah were perfectly written to aid humans with rules of resources and product allocation, which is why person who involved in and seek halal livelihoods is honored in Islam [8][9]. Allah mentioned that the natural resources is always infinite, not as claimed by Western markets or scholars, unless humans departed from the teachings and guidance which had been foretold by Islam. Unfortunately, Muslims nowadays are being too dependent to products and services offered by Western countries and even being governed by their rules and regulations. It is urged that Muslim should prevail and secure their food in order to secure their countries, and also cooperate together to develop their own agriculture and food resources [10].

Risk could be estimated through objective or subjective procedures, which differs with uncertainty. Risk also could be divided into two types – business risk and financial risk. The main concern here is that farmers (or agro-entrepreneurs) may have insufficient data to estimate the risks. At least there are five strategies to reduce risks – diversification of production and marketing plans, formal insurance and the maintenance of liquid insurance reserves, cooperative marketing of farm products, future and cash forward contracts, and outside equity financing [11].

Agriculture is a very risky economic activity. There are some elements in agriculture that is not controllable which causes unexpected economic returns to farm households. Farmers of developing countries had limited access to several local risk management instruments and financing facilities by local banks, forcing them to use inefficient traditional methods

[12]. Local small farmers who lived in rural or remote areas lack access to reliable and affordable agricultural financing due to low education levels, subsistence farming dominance and inability to access the financing instruments factors [13]. Agriculture sector in Africa failed miserably with the poor farmers unable to improve their lifestyle through the sector, but the factors of the failure are caused by collapsed agricultural development banks, corruption, inadequate infrastructure, and poor soils and seeds for farming [14].

In addition, there are higher risks in agricultural investments due to various factors, although it is rare because the risks involve weather and natural disaster effects towards agro productions. Recent and advanced farming technology was able to minimize the effects. Although there are few banks offered Islamic financing facility, but due to importance of agriculture towards Malaysian economy, these banks are willing to provide financial support towards agro entrepreneurs, which is good opportunity to expand the agro business [15]. This statement was also supported in an article which examines the concept of agribusiness in Islam and financing facilities for agriculture by Islamic banks [16].

In a study to analyze al-Muzara'ah contract and its possible application in Islamic banks, it is mentioned that there is an equal opportunity and possibility for Islamic banks in Malaysia to initiate the contract for helping agro entrepreneurs [17]. In 2011, another study had been conducted to analyze various contracts of cultivation from the perspective of Islamic Commercial Law. There are plenty of opportunities available for Muslim in Malaysia in order to embark in agro projects based on Shari'ah compliant Islamic financing [18].

There were 24 articles related to Islamic agribusiness and agribusiness financing had been published from 2003 to 2013, in which Malaysian and Pakistan had the most contributors. Still, there is a need to have more studies related to Shari'ah-compliant financing in Islamic institutions, which is based on Fiqh Muamalat contracts [19][20].

### III. RESEARCH METHODOLOGY

The research methodology used for this research is quantitative method, through the use of questionnaires. Questionnaires are used since the information gathered from respondents is the most accurate manner. The questionnaires had been targeted towards 100 Muslim farmers (read: agro-entrepreneurs) of Sungai Besar (Selangor), Teluk Intan (Perak) and Sungai Sumun (Perak), Malaysia.

Each respondent is required to answer all 27 close-ended questions in the form around 10 to 20 minutes. After performing a thorough survey, data gathered from respondents' answers are analyzed through the use of SPSS software (Version 20) statistically.

This study will analyze the frequency of each variable in the survey questions, since each respondent has their own evaluation on the issue, which is useful in this analysis.

Results of the analysis will determine the level of assessment of each respondent on various aspects of this study. The reliability of scale in this study was tested using the Cronbach alpha to ensure the coefficient alpha is higher than 0.7. On the other hand, standard deviation shows how much variation or dispersion from the average exists. A high standard deviation indicates that the data points are spread out over a large range of values [21]. Table I shows the Cronbach alpha and standard deviation for all scale from all questions of Part B of the questionnaire; this confirms the internal consistency of

the instrument and to measure the confidence level of the data collected.

TABLE I  
RELIABILITY TEST OF QUESTIONNAIRES

No	Item	Standard Deviation
Cronbach Alpha=0.732		
Question 8	Risk threats concern	1.110
Question 9	Decision to continue project upon risks	1.017
Question 10	Solution of encountering risks	1.045
Question 11	Hot weather and climate changes risk	1.346
Question 12	Monsoon flood risk	1.423
Question 13	Unexpected natural disaster risk	1.328
Question 14	Production expectations	1.168
Question 15	Market price changes risk	1.180
Question 16	Government and institution changes risk	1.459
Question 17	Requirement of latest technology	1.572
Question 18	Personal problems influence	1.362
Question 19	Funds requirement	1.408
Question 20	Diseases exposure	1.579
Question 21	Pests exposure	1.407
Question 22	Clarification of minimizing risks	1.057
Question 23	Common understanding of muamalat contracts	1.250
Question 24	Shariah compliant financing	1.683
Question 25	Realization of reward from Allah	0.605
Question 26	Islamic financing preference	0.968
Question 27	Importance of Shariah financing	1.023

### IV. USING THE TEMPLATE

#### A. The Distribution of Agro-Entrepreneurs in Local Agricultural Activities

The data of this research had been gathered from male and female respondents. The main agricultural activities involved in this study are "banana" (cash crop banana production), "paddy" (both paddy plantation and rice production), "rubber" (rubber tree plantation and rubber production), "palm oil" (palm oil plantation and palm oil production), "fishery", "livestock" and "others". "Others" are mostly activities involving fruit tree plantation and fruit production, such as pineapples and rambutans.

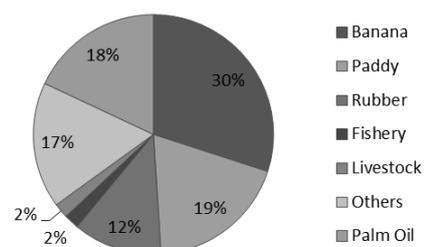


Fig. 1 Distribution of Main Agricultural Activities

From the survey, the data are analyzed and the analysis is shown in Fig. 1. The numbers in brackets are number of frequency distribution of agro-entrepreneurs involving in

main agricultural activities. Fig. 1 reveals that majority of respondents involved in banana activities (30 respondents or 30%), while the least number of respondents involved in fishery and livestock activities (2 respondents each or 2% each). It is also noted that while performing survey, the researcher was informed that some respondents which involved in palm oil activity were previously involved in rubber activity. The reason of this conversion is that rubber prices had been reduced drastically in 1990s, forcing some of rubber plantation switched to more profitable palm oil plantation instead [22].

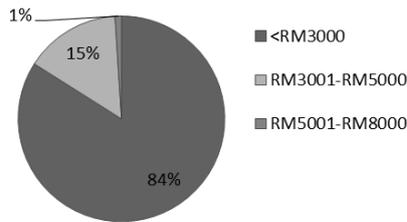


Fig. 2 Distribution of Agro-entrepreneurs' Income

Second analysis is translated into Fig. 2. The numbers in brackets are number of frequency distribution of agro-entrepreneurs based on their salary or income per month. Figure 2 shows that majority of respondents involved had salary lower than RM3000 (84 respondents or 84%), followed by respondents with salary ranged between RM3001 to RM5000 (1 respondents or 15%) and 1 respondent with salary around RM5001 to RM8000 (1%), who was known to involve in fishery activity. It is highly recommended to the majority to finance their agro-projects through Islamic financing products and/or services.

#### B. The Involvement of Risks in Agro Projects

Risks had been identified in this paper includes production risk ("production"), technological risk ("technological"), price or market changes ("market price"), animal or plant diseases risk ("diseases"), pests attack risks ("pests or wild animals attack"), financial and credit risk ("financial"), and changes of government and institutional policy risk ("government"), weather or climate change risk ("weather"), natural disaster risk ("natural disaster") and personal risk ("personal") in this study.

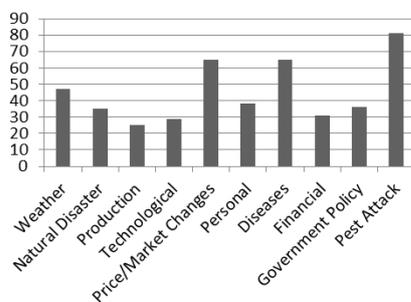


Fig. 3 Distribution of Agro-entrepreneurs' Risk Involvement

Fig.3 shows the list of all risks mentioned previously with number of respondents that involved or at least had experience encountering those risks. Please note that each respondent faced multiple risks in their agro projects. It is revealed that majority of respondents commonly

encountered risks related to pests or wild animals attack (81 respondents), proves that most agro-entrepreneurs require funds to buy pesticides (for plantations) or better security (for animals). Production risks (25 respondents) are the least common risk encountered by agro-entrepreneurs, since so far most agro-projects could produce well.

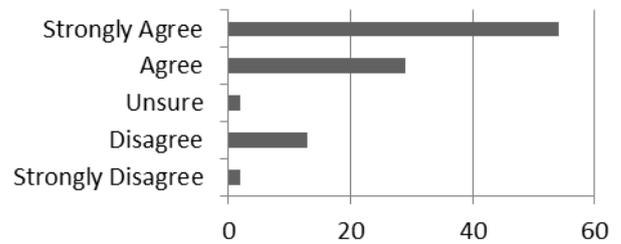


Fig. 4 Risks' Threats Concern

Fig. 4 is based on one of the questions using Likert scale in the questionnaire, which shows the analysis of response from respondents regarding to the statement "Aforementioned risks had threatened my agro projects". This figure had positive response greater than negative responses, in which majority of respondents (54 respondents) strongly agreed with the statement because they are fully aware that the aforementioned risks had possible threats on their agro projects. There are only two respondents unsure and strongly disagree with the statement.

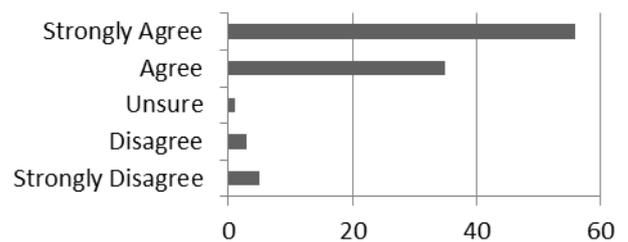


Fig. 5 Decision to Precede Agro Projects upon Risks

Fig. 5 shown is based on the analysis of response from respondents regarding to the statement "I will continue my agro project even though I had to encounter with the aforementioned risks" in the questionnaire. Sharing similar pattern with previous figure (positive responses higher than negative responses), majority of respondents strongly agreed with the statement (56 respondents), followed by 35 respondents agreed with the statement. There are only one respondent who are unsure if she should continue her project or not upon occurring risks. These responses show that most agro-entrepreneurs are willing to precede their agro projects regardless of any risks they need to go through. According to some of those respondents, some of the reasons are:

- 1) Their agro projects are main source of daily income.
- 2) They want to reserve the land (and possibly agro projects) which was inherited from their ancestors (or at least their parents) for future generations.
- 3) High market demand of agricultural products.

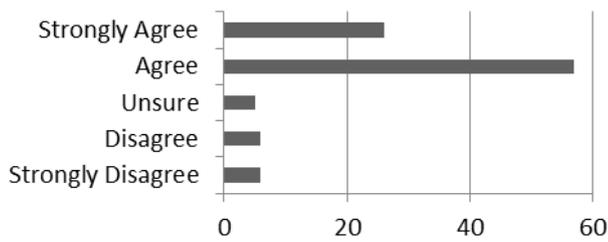


Fig. 6 Solutions on Encountering Risks

Another question using Likert scale from the questionnaire was about getting response from respondents regarding to the statement "I will find solutions to encounter the aforementioned risks". The analysis had been transformed into Fig. 6. It shows a pattern of high number of respondents agreed with the statement (57 respondents), followed by 26 respondents strongly agreed with the same statement. Only a few number of respondents disagreed (6 respondents), 6 respondents strongly disagreed and unsure (5 respondents) with the statement. This analysis shows that the agro-entrepreneurs would find solutions or ways to encounter the risks if in case the risks occur again, however, only half

#### V. CONCLUSION

It can be concluded that there are several risks which have been encountered by agro-entrepreneurs in agriculture projects and require them to finance their projects using Shariah-compliant financing and banking products. From this article, it shows that majority of respondents are willing to continue their agro projects even though they had to encounter various risks, and had some knowledge or experience about the advantage and disadvantages of those risks. In addition, local Islamic banking institutions should take these risks into consideration in providing monetary funds to the agro-entrepreneurs in order to ensure the funds could accommodate the loss from effect of those risks and support agro projects.

#### ACKNOWLEDGMENT

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of them are seriously finding the true solution of encountering risks.

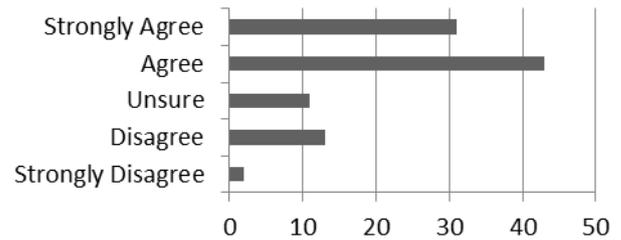


Fig. 7 Clarification of minimizing risks

There is another question using Likert scale from the questionnaire. The statement was "There are clear methods to minimize all of my agro project risks.". It is revealed 43 respondents agreed with the statement. There are 31 respondents strongly agreed, 13 respondents disagreed; 11 respondents are unsure and 2 respondents strongly disagreed with the same statement. This analysis shows that majority of respondents know several methods to minimize at least the effect of risks towards their agro projects.

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