

Calculated and Uncalculated Risks of Financing for Agro Projects

Muhammad Ridhwan Ab. Aziz, and Muhammad Mohamad Yusoff

Abstract—Islamic financing in agriculture is aimed to finance agriculture-based projects and to prevent any involvement of *haram* elements by using banking and financing instruments which is *Shariah*-compliant among agro-entrepreneurs. However, there are several calculated and uncalculated risks that had to be faced by agro-entrepreneurs in their agro projects which may force them to accommodate possible loss from effect of risks using the same funding. The methodology of this paper is through quantitative research based on questionnaires to identify patterns of agro-entrepreneurs 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 banks.

Keywords—Calculated Risks, Uncalculated Risks, Agro Projects, Agro-entrepreneurs, Islamic Financing

I. INTRODUCTION

AGR0-ENTREPRENEURS, especially among Muslims, who wished to begin their agriculture-based projects – “agro projects” in short – would require some funds to purchase required materials and as their financial capital for the projects. Being a large project and receiving high demand from local citizens, this may take a lot of hard work and effort, so a good financial and entrepreneurial skill is essential for each agro-entrepreneur. If they are unable to finance their projects by themselves, they could seek financial assistance from available local banking institutions instead.

In any kinds of business, there are several risks that businessmen had to go through in daily business work. Agro-projects are no exception – most of these risks had negative effects towards every entrepreneur’s agro project, either big or small. In beginning, 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.

However, the loss caused from the risks may halt the progress of agro-projects and also may involve monetary funds to accommodate it. 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.

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Therefore, conducting through this study, the researcher would like to respond with a sense of concern towards the issue. This paper aims to identify risks associated with agro-projects among agro-entrepreneurs. After conducting analysis, the researcher will attempt to suggest and to 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, as along it is according to *Shariah* law.

II. LITERATURE REVIEW

Allah wanted humans to work on 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 [1][2]. 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 to secure our country, and also cooperate together to develop their own agriculture and food resources [3].

Risk, unlike uncertainty, could be estimated through objective or subjective procedures. 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 [4].

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 marginalize the agriculture sector [5]. Until now, Agro Bank is the only bank able to provide funding and financing facilities to Agro entrepreneurs intensively, although the bank should introduce more comprehensive Islamic banking products with different *Shariah* contract concept [6].

In Malaysia, there are few Islamic banks or Islamic windows of conventional banks do offer Islamic financing facilities for agro entrepreneurs in agriculture. These banks include Agro Bank (previously known as Bank Pertanian Malaysia Berhad), Bank Kerjasama Rakyat Berhad Malaysia Berhad (commonly known as Bank Rakyat) and Maybank Islamic Berhad [7].

To begin farming business at Bauchi, Nigeria, a large sum of funds is required to be made as a capital for the project. This would be a problem to farmers who could not prepare such huge capital requirement, unless using financial assistance from banks to accelerate the desired technology change [8]. Meanwhile, in Finland, a research was made on factors of financial risk on Finnish farms. Structural changes, higher debts and increasing energy costs cause higher financial risks, unless the farm size increase, the risks would be lower. This would mean that poor farmers with small farms would face higher financial risks compared to those who had larger farms [9].

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 [10]. 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 [11]. 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 [12].

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 were 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 [13]. This statement was also supported in an article which examines the concept of agribusiness in Islam and financing facilities for agriculture by Islamic banks [14].

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 [15]. 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 *Shariah* compliant Islamic financing [16].

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 [17]. Still, there is a need to have more studies related to *Shariah*-compliant financing in Islamic institutions, which is based on *Fiqh Muamalat* contracts [18].

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 30 Muslim farmers (read: agro-entrepreneurs) of Sungai Sumun, Perak and Sungai Besar, Selangor, 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.

TABLE I
RELIABILITY TEST OF QUESTIONNAIRES

No	Item	Standard Deviation
Cronbach Alpha=0.732		
Question 8	Risk threats concern	1.129
Question 9	Decision to continue project upon risks	0.711
Question 10	Solution of encountering risks	0.791
Question 11	Hot weather and climate changes risk	1.289
Question 12	Monsoon flood risk	1.501
Question 13	Unexpected natural disaster risk	1.264
Question 14	Production expectations	1.137
Question 15	Market price changes risk	1.217
Question 16	Government and institution changes risk	1.377
Question 17	Requirement of latest technology	1.629
Question 18	Personal problems influence	1.329
Question 19	Funds requirement	1.456
Question 20	Diseases exposure	1.213
Question 21	Pests exposure	1.117
Question 22	Clarification of minimizing risks	0.980
Question 23	Common understanding of muamalat contracts	0.913
Question 24	Shariah compliant financing	1.671
Question 25	Realization of reward from Allah	0.407
Question 26	Islamic financing preference	0.682
Question 27	Importance of Shariah financing	0.547

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 [19]. 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.

IV. DISCUSSION AND FINDINGS

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.

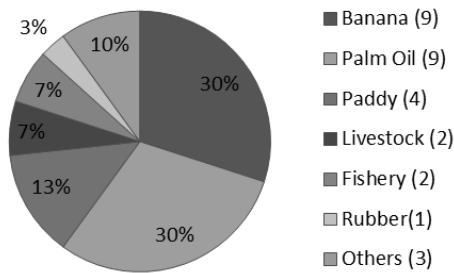


Fig. 1 Distribution of Main Agricultural Activities

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 and palm oil activities (9 respondents each or 30% each), while the least number of respondents involved in rubber activity (1 respondent or 3%). 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 [20].

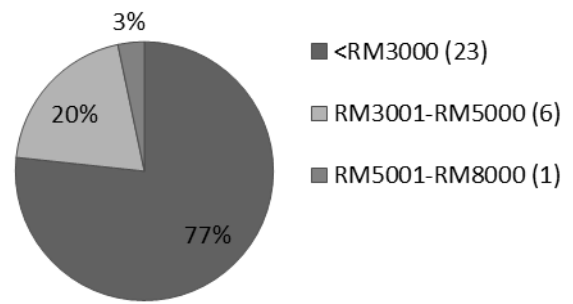


Fig. 2 Distribution of Agro-entrepreneurs' Income

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. Fig. 2 shows that majority of respondents involved had salary lower than RM3000 (23 respondents or 77%), followed by respondents with salary ranged between RM3001 to RM5000 (6 respondents or 20%) and 1 respondent with salary around RM5001 to RM8000 (3%), 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 with two types in this paper – calculated risks and uncalculated risks. Calculated risks are risks which could be predicted to happen after careful considerations of known advantages and disadvantages, 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”). Uncalculated risks, however, are unpredictable and may happen randomly at any time – including weather or climate change risk (“weather”), natural disaster risk (“natural disaster”) and personal risk (“personal”) in this study.

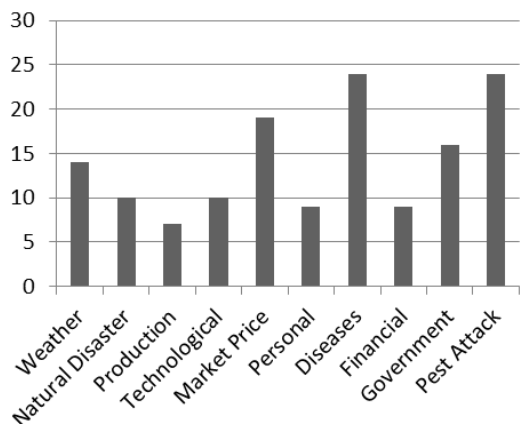


Fig. 3 Distribution of Agro-entrepreneurs' Risk Involvement

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 diseases and pests or wild animals attack (24 respondents each), proves that most agro-entrepreneurs require funds to buy fertilizers and pesticides (for plantations) or vaccines and better security (for animals). Production risks (7 respondents) are the least common risk encountered by agro-entrepreneurs, since so far most agro-projects could produce well.

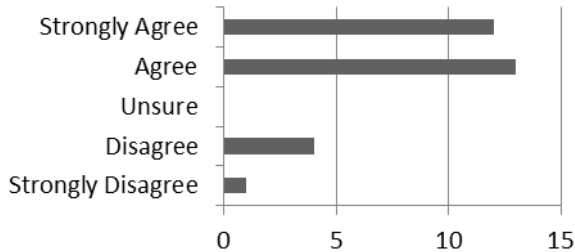


Fig. 4 Risks' Threats Concern

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". It is revealed that majority of respondents (13 respondents) agreed with the statement because they are aware that the aforementioned risks had possible threats on their projects. There are only 12 respondents are strongly agreed that those risks had threatened their agro projects and there are only one respondent strongly disagreed with the statement.

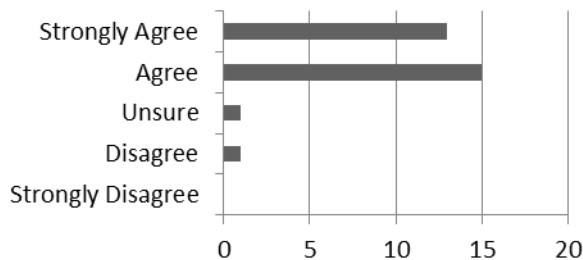


Fig. 5 Decision to Precede Agro Projects upon Risks

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. This one also had similar pattern with previous question, in which majority of respondents agreed with the statement (15 respondents), followed by 13 respondents strongly agreed with the statement. These response shows that agro-entrepreneurs' willingness to proceed 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.

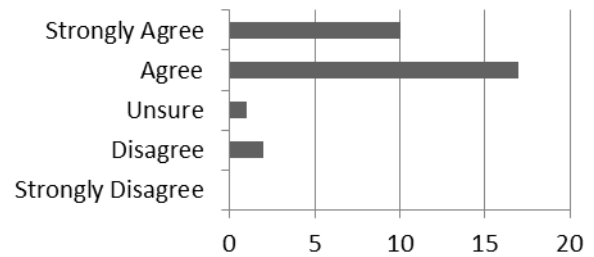


Fig. 6 Solutions on Encountering Risks

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 similar pattern of high number of respondents agreed with the statement (17 respondents), followed by 10 respondents strongly agreed with the same statement. Only a few number of respondents disagreed (2 respondents) and unsure (1 respondent) 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 some of them are seriously finding the true solution of encountering risks.

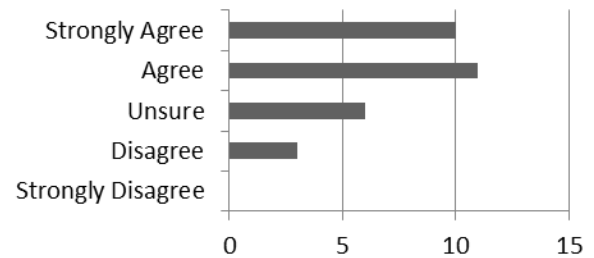


Fig. 7 Clarification of minimizing risks

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.". The result of analysis also had similar pattern as previous figures, shown in Fig. 7. It is revealed 11 respondents agreed with the statement. There are 10 respondents strongly agreed, 6 respondents are unsure and 3 respondents 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.

V.CONCLUSION

There are several identified calculated and uncalculated risks which had been encountered by agro-entrepreneurs during their daily agro-projects business and require them to finance their projects using *Shariah*-compliant financing and banking products and services. It is safe to mention 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.

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. The analysis results also will be used to propose an Islamic financing mechanism to help and support agro-entrepreneurs in their projects better in the future.

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