ANALYSIS OF THE IMPLEMENTATION OF SHARIA INSURANCE FOR THE AGRICULTURE SECTOR

Nurhuda Abdullah[1] and Ries Wulandari[2]

nurhudaAbdullah30@gmail.com[1] , rieswulandari@tazkia.ac.id[2]

Abstract

The allocation of financing for agricultural sector in Islamic Banking Institution is low compared to the other sector. The risk of high uncertainty, which includes the level of damage to farms and the level of crop failure, becomes the financing risk consideration for the banking. Rice farm insurance can be an alternative to mitigate this risk so the a Islamic the banking will have a partner to share the risk. The insurance practice for agricultural sector has been initiated by the Ministry of Agriculture, but there are still some limitation due to the insurance inclusion and sharia compliance issues. This research provides a proposal of the implementation of shariah agricultural insurance with Analytical Network Methodology (ANP). The objectives of this study are 1) analyzing the benefit, opportunity, cost, and risk of the implementation of Islamic agricultural insurance and 2) find the most important aspect due to the shariah agricultural insurance implementation. The research finds that the most important aspect is opportunity. This insurance will give opportunity to the farmer by providing protection for the crop from the risk of harvest failure with shariah compliance and using shariah banking. The shariah scheme will help the government increasing the insurance inclusion. This scheme will benefit the farmer due to the increasing of crop insurance awareness. The requirement of this implementation comes from the cost aspect, namely legal aspect and the risk will rise from the moral hazard as fraud claim. The results of this study indicate that the implementation of shariah insurance for the agricultural sector has opportunities and benefits, but there are still some notes to be addressed.

Keywords : Shariah insurance, financing risk, agricultural sector, ANP

Introduction

Indonesia is a country with abundant natural resources, including food crops. The statistical data shows that the production of harvested area and productivity of rice continues to increase between 2017-2018 as Table 1 below. This shows that most of the Indonesian population contributes to meeting their needs in the agricultural sector (BPS, 2019).

Table 1. Statistical Data on Production of Harvested Area and Productivity of Rice and Secondary Crops In Indonesia as Food Crops and Feedstuffs between 2017-2018

No	Commodity	2017	2018	Growth (%)
1	**Rice (total)**			
	Production (000 Ton)	81,149	83,037	2.33
	Productivity(Ku/Ha)	51.65	51.92	0.52
2	**Lowland Rice**			
	Production (000 Ton)	77,366	78,819	1.88
	Productivity(Ku/Ha)	53.15	53.54	0.73
3	**Field Rice**			
	Production (000 Ton)	3,783	4,179	10.47
	Productivity(Ku/Ha)	32.72	32.81	0.28
4	**Corn**			
	Production (000 Ton)	28,924	30,056	3.91
	Productivity(Ku/Ha)	52.27	52.41	0.27
5	**Soya bean**			
	Production (000 Ton)	539	983	82.39
	Productivity(Ku/Ha)	15.14	14.44	-4.62

Source : Statistics Agency of the Republic of Indonesia (BPS, 2019)

Indonesia also known as agricultural country for many years due to the main sector becomes the leading contributors to the Gross Domestic Product. Unfortunately its role decreases compared to the growth in non-agriculture which is relatively faster. Agriculture becomes the leading sectors which contribute a three highest percentages (Table 2.)

Table 2. Distribution of GDP (2010 Version) at Current Market Prices (Percentage)

GDP Sectors	2018	2019
A. Agriculture, Forestry and Fishing	12.81	12.72
B. Mining and Quarrying	8.08	7.26
C. Manufacturing	19.86	19.70

Source : BPS (2020) The leading sectors which contribute a three highest percentages

From Table 2 above, it shows that the contribution of the agricultural sector in 2019 was 12.72%, experiencing a decrease compared to the previous year in 2018 of 12.81%. The

Statistics Agency said that there was a phenomenon of decline due to the dry season, the data above shows that the structure of the agricultural sector was 13.72 % or the second highest after the industrial sector at 19.70 % in 2019 .

However, the agricultural sector still faces several problems, including a lack of capital for farmers and agricultural business actors. Banking, theoretically, has a great potential as a support of agricultural financing as financial intermediary institution. Unfortunately the support is still limited. The banking sector is less interested in financing the agricultural sector which is considered high risk, both because of natural disturbances such as floods, drought, pests, plant diseases, as well as price fluctuations (Pradivta, 2016).

Indonesia already practiced dual banking system; both conventional and Islamic banking. Rather than as complementary banking, Islamic banking should contribute more to the equity of the society and become substitute especially for Muslim. Islamic banking, born with conducting sharia principle based on Islamic law, ideally offering more opportunities helping the needy and equity. The empirical finding by Sugema, *et al* (2010) showed that both profit loss sharing (PLS) and interest base system are efficient, under production certainty and competitive market. However, under an uncertain situation due to a productivity shock, it is proven that only the PLS is efficient since it fairly distributes the risk at individual level amongst lender and borrower.

Despite this empirical finding that Islamic banking is efficient and fairly distributed the risk, the data showed the support for the agriculture sector, the risky sector, is still limited. The allocation of financing in the agricultural sector is still very low (Table 3.).

Table 3. Islamic Bank Financing Based on Economic Sector (%)

Sector	2018	2019
A. Agriculture, Forestry and Fishing *	12.81	12.72
B. Mining and Quarrying	8.08	7.26
C. Manufacturing	19.86	19.70
D. Electricity and Gas	1.19	1.17
E. Water supply, Sewerage, Waste Management and Remediation Activities	0.07	0.07
F. Construction	10.53	10.75
G. Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	13.02	13.01
H. Transportation and Storage	5.38	5.57
I. Accommodation and Food Service Activities	2.78	2.78
J. Information and Communication	4.15	4.24
K. Financial and Insurance Activities	4.15	4.24

L. Real Estate Activities	2.74	2.77
M,N. Business Activities	1.80	1.92
O. Public Administration and Defense; Compulsory Social Security	3.65	3.62
P. Education	3.25	3.30
Q. Human Health and Social Work Activities	1.07	1.10
R,S,T,U. Other Services Activities	1.81	1.95

Source: Statistics Agency of the Republic of Indonesia

Ashari and Saptana (2005) showed that islamic financing is quite prospective to strengthen capital in the agricultural sector. To support its implementation in the agricultural sector, it is necessary to support policy makers and intensive socialization regarding the principles of Islamic financing.

The limited contribution of financing from Islamic bank to the agricultural sector also found by Wulandari and Mughit (2016) due to some factors namely exchange rate and policy rate conducted by central bank. These factors contributes significantly in the short run. The regulator should relax the policy to increase the financing to agriculture sector.

Again the risk of high uncertainty, which includes the level of damage to farms and the level of crop failure, allows farmers to switch to other commodities that have high economic value but with lower risks. If this has continued, the stability of national food security will be compromised, especially in terms of production and the availability and affordability of food for the entire population Indonesia (Zachariah, 2017).

Junaed (2016) wrote in order to the implementation of agricultural insurance to have good prospects, it is proposed that (1) increasing the allocation of funds for implementing agricultural insurance in the APBN a step by step, (2) compiling technical rules which include compulsory agricultural insurance membership, (3) encouraging related parties in accordance with their role to commit to developing agricultural insurance , (4) assigning BUM N insurance as a provider and distributor of agricultural insurance and play a role as a reinsurance agency, (5) examining the integration between agricultural insurance programs and agricultural sector services received by farmers (subsidized fertilizers, subsidized seeds, and social assistance).

Rice farming insurance can be an interesting relationship in relation to global climate change. Insurance does not only cover protection against price fluctuations, but specifically includes risk sharing due to drought, floods and attacks by plant pests and other external factors, such as landslides, earthquakes, and other political problems. Sumaryanto and Nurmanaf (2007)

stated that the development of agricultural insurance in rice farming in Indonesia, requires strong and consistent commitment, policies, programs and political support.

The political support was showed by the existence of the Law on the Protection and Empowerment of Farmers, which is explained through a regulation of the Minister of Agriculture relating to agricultural insurance facilities. What writer concerns with, is the content in applying these regulations. This must be supported and operationalized in two aspects of content, both conventional and sharia aspects. By this support the shariah agriculture insurance idea will be implemented.

No wonder, this consequence that the regulator should provide guarantees in terms of legal determination, including shariah insurance. The government always tries to ensure that sharia law and state law never coming into conflict. As for the case with the law regarding Islamic insurance. As Allah SWT has said in surah (QS 42:13).

"He has instructed you (Muhammad) about religion, (such as) what He had passed on to Noah, and what We had testified to Abraham, Moses and Isa, namely: 'Establish religion and do not be divided about it".

It is very hard for polytheists, (to follow) the religion that you call them to him. Allah draws to that religion, the person He wills, and guides His (religion-), those who return (Ministry of Religion, 2019) .

The insurance practice for agricultural sector has been initiated by the Ministry of Agriculture due to the fact that rice farm insurance can be an alternative to mitigate this risk. Due to the need of Islamic banking, shariah agricultural insurance together with Islamic banking in risk mitigation.

This research provide proposal the implementation of shariah agricultural insurance. As new proposal for public service, there could be advantages and disadvantages. Therefore, this study discusses benefts, opportunity, cost, and risk of implementation of of shariah agricultural insurance in Indonesia using the method of Analytic Network Process (ANP). From the background of the research, there are some issues to be discussed in this research, including are to what extent does beneft, opportunity, cost, and risk respond to the issuance of shariah agricultural insurance if implemented in Indonesia?; from the four aspects, which aspect would become the priority?

The remainder of this paper is organized as follows. Section 2 proposes Literature Review, Section 3 propose analysis of benefts, opportunities, costs, and risks (BOCR) as research

methodology Section 4 presents analysis, and Section 5 provides conclusion and recommendation for future research.

Methods

Sources and Methods of Data Collection

This research employs primary data. Primary data was obtained from filling up questionnaires by six experts consist of academician, regulators and practitioners. The regulator is the party authorized to regulate agricultural insurance-related regulations. Practitioners are people who have strategic positions in institutions related to agricultural insurance. Academics or experts in agricultural insurance. From the results of the interviews, the authors obtained data about the factors that infuence the implementation of agriculture shariah insurance in Indonesia.

General Description of the Method of Analytic Network Process (ANP)

This method was first developed by Thomas L Satty which is the development of methods *Analytic Hierrrchy Process* (AHP). According to Saaty and Vargas (2006), ANP is the general theory of relative measurement, which is used to lower the priority of the composite ratio-scale measurement. It then reflects the individual relief of the influence of the elements interacting in regard to the criteria of control. ANP is a new approach in the decision-making process without making assumptions. Meanwhile, ANP has a relationship that is interrelated with each other which is commonly called the ANP network (Figure 1).
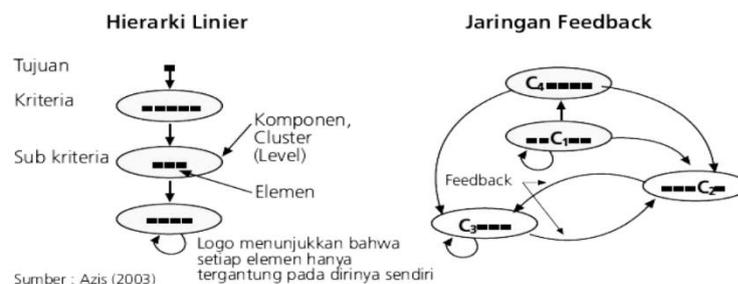

Figure 1. ANP network

Analysis of *Benefit, Opportunity, Cost,* and *Risk* (BOCR)

BOCR network connection between *benefits*, *opportunity*, *cost* and *risk* are influenced by common factors. Analysis of *Benefit*, *Opportunity*, *Cost*, *Risk* (BOCR) is an analysis of prioritization based on the results of calculating the desired criteria as *benefits* and undesirable criteria as *costs*. In addition, there are criteria based on events in the future, which may occur

as a positive thing (*opportunity*) and things that could result in a negative *risk* (*risk*). (Satty & Vargas, 2006; Satty & Vargas, 2006)

The network structure of *Benefit* , *Opportunity* , *Cost* , and *Risk* (BOCR) can also be divided into two *clusters* , namely the positive and negative effects of the problems under study. For more details, it can be seen as follows (Figure 2)
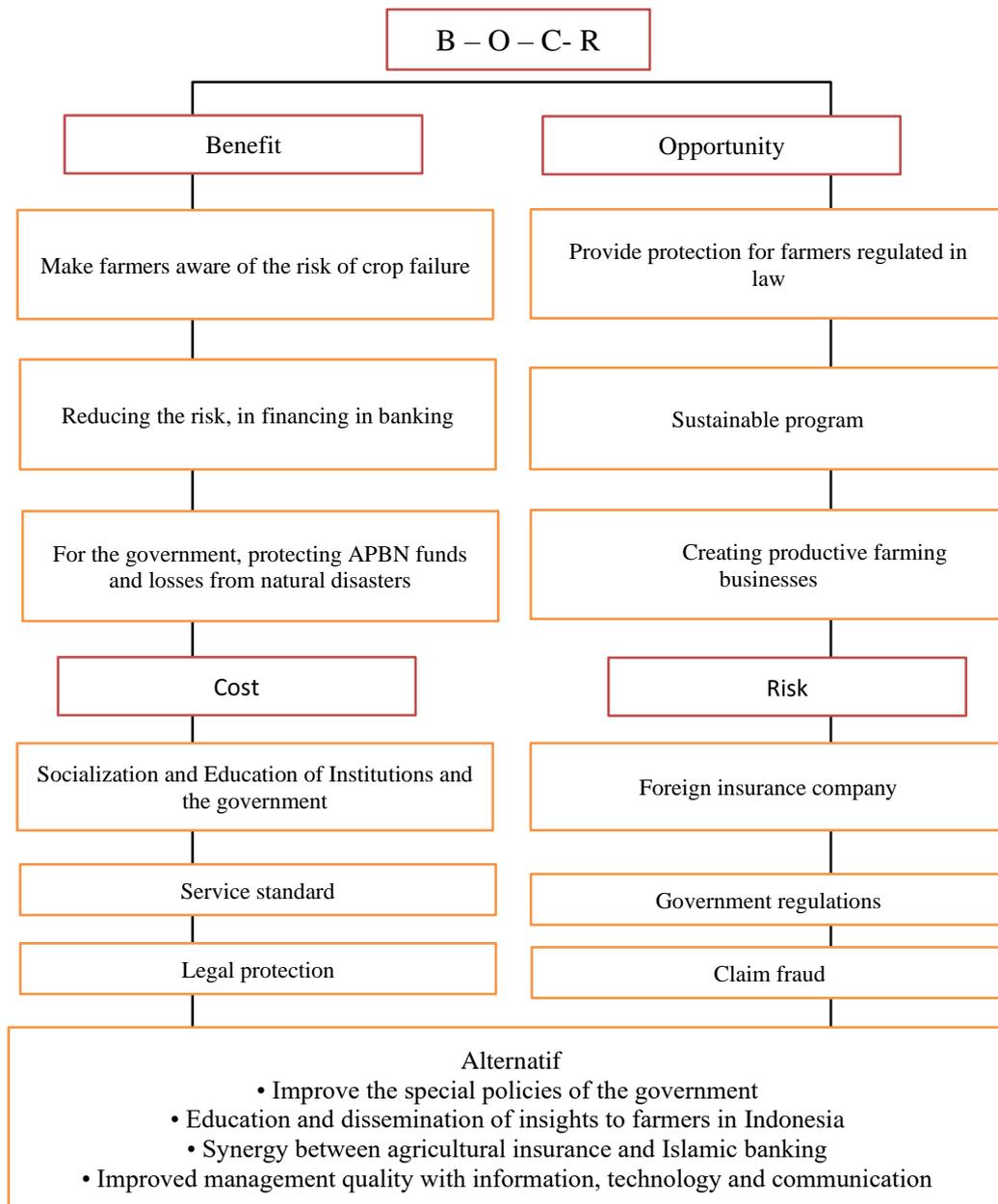

Figure 2. Decomposing BOCR : Implementation of Agriculture Shariah Insurance

Benefit , all things that can provide benefits or advantages for farmers with agricultural insurance in increasing agricultural financing

Opportunity , all things that can give rise to benefits or advantages for farmers and sharia banks in the future as a result of the existence of agricultural insurance in increasing agricultural financing or reducing the risk of financing.

Cost , all things that can result in burdens for farmers or losses for banks with agricultural insurance

Risk , all things that can cause a burden or loss for farmers or insurance institutions in the future as a result of agricultural insurance.

Result And Discussion

Based on the above decomposition, the ANP network based on this framework can be seen the figure below
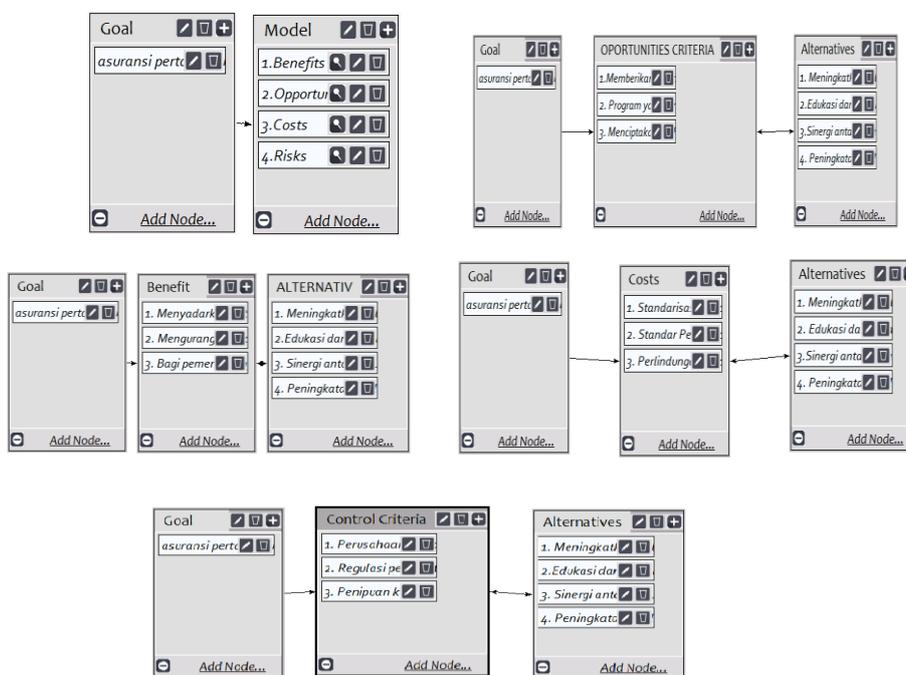
Figure 3. ANP Network BOCR

Synthesis and results of BOCR

A decision has several correct possibilities and the one that must be considered in ANP is the possibility that it can be called by a profit or benefit, while the opposite possibility is the cost, then the uncertain possibility is called an opportunity, and the possibility that will be taken from a decision is called with a risk or risk (Satty & Vargas, 2006), then to analyze it requires several respondents.

The author will present the results of the Geometric Mean, to explain the results of the respondents' tendency to, benefits, opportunities, costs and risks of implementing agricultural insurance in reducing risk in Islamic banking. The level of the respondent's agreement (rater agreement) is indicated by the value of Kendalls coefficient of concordance (W) with the provisions (W; 0 <W <1) W = 1 indicates perfect conformity, meaning that the closer to number 1, the respondent's agreement is getting the same. The following is a description of the results of data processing based on the views of the five respondents.

Result of Rater Agreement

Result of Rater Agreement BOCR MODEL

Based on the results of BOCR data processing, the respondents' model has a high agreement to approach the number of perfection, namely the number 1, (W = 0.65). The results of the rater agreement show that the respondents' agreement in the BOCR MODEL cluster is quite high.
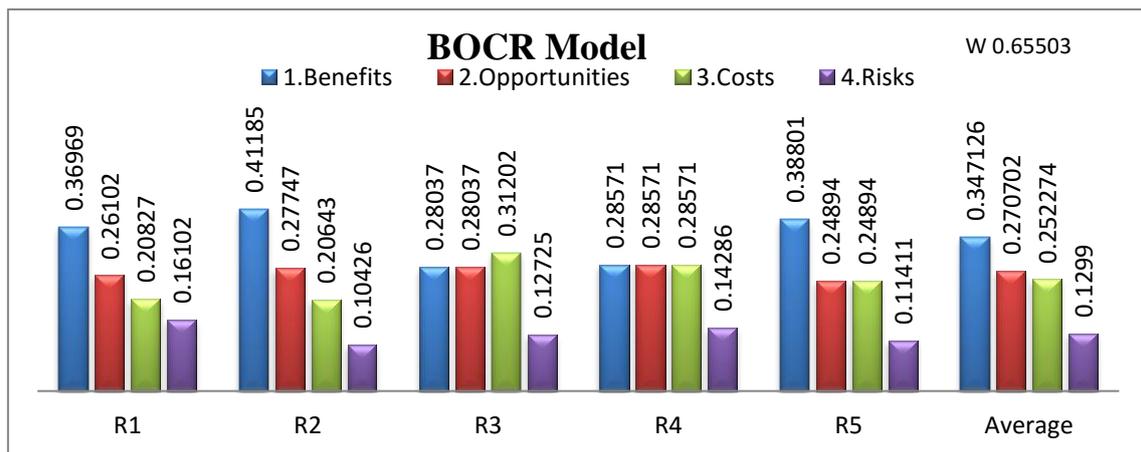

Figure 4. Result Geomean Cluster BOCR

From Figure 4, we can see that the respondent's agreement for a high value is obtained by the benefit aspect, this illustrates that the BOCR comparison of respondents agrees that the main priority is the Benefit aspect with an average value of 0.34. The second priority is the Opportunity aspect, with an average value of 0.27, the third priority is the Cost aspect with an average value of 0.25 and the last priority is the Risk aspect with an average value of 0.12. with a value of W = 0.65 which is closer to perfection because the value of the Rater Agreement is 1 (W = 1), then the agreement between the respondents is perfect.

Result of Cluster Benefit

Based on the results of Benefit cluster data processing. When viewed from the value on the BOCR network, the respondent's agreement value is quite low, namely W = 0.08.
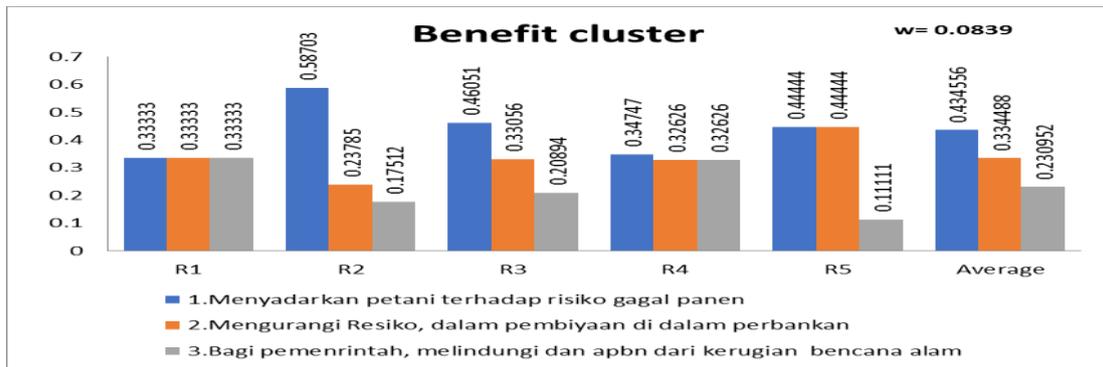
Figure 5. Geomean Cluster Benefit

In general, the main priority of the Benefit cluster element is to make farmers aware of the risk of crop failure, while the second priority is to reduce the risk of financing in banking, then the last priority is followed by the government in protecting the state budget and losses from natural disasters (Figure 5).

Results of the Rater Agreement Cluster Opportunity

Based on the results of Cluster Opportunity data processing, the implementation of Sharia Insurance for the agricultural sector is an opportunity, although when viewed from the results of the rater agreement for the Cluster Opportunity of 0.20, this illustrates that the agreement between respondents in the Opportunity Cluster has not reached perfection, if you see the rater agreement value is 1 (W = 1) then there will be an agreement between the respondents to be perfect.
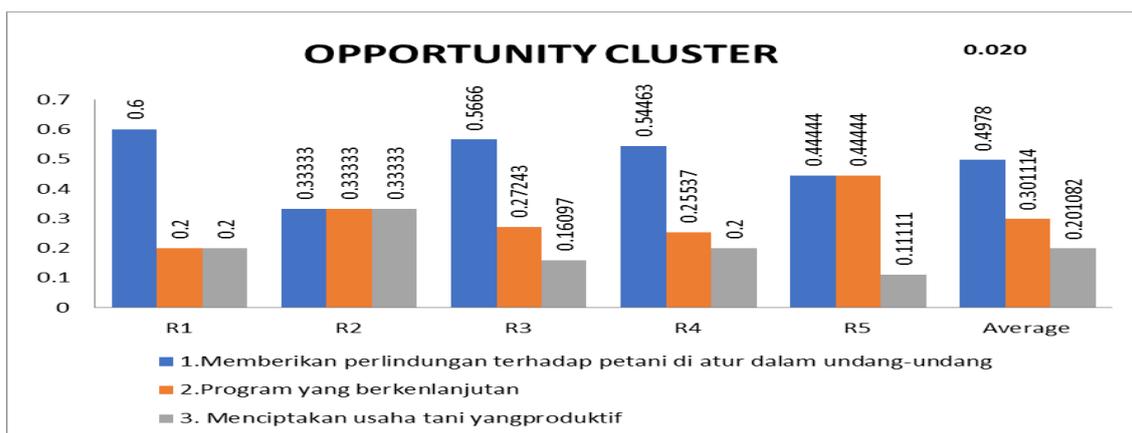

Figure 6. Geomean Cluster Opportunity

In general, the main priority for the elements of the Opportunity Cluster is to provide protection for farmers regulated by law, then the second priority is a sustainable program and the third priority is to create productive farming businesses.

Result of Rater Agreement Cost Cluster

The rater agreement on the computer cost of W = 0.10. Furthermore, in general, the main priority elements of the Cost Cluster are legal protection with the second priority element of service standards and the last priority of legal protection (Figure 7)
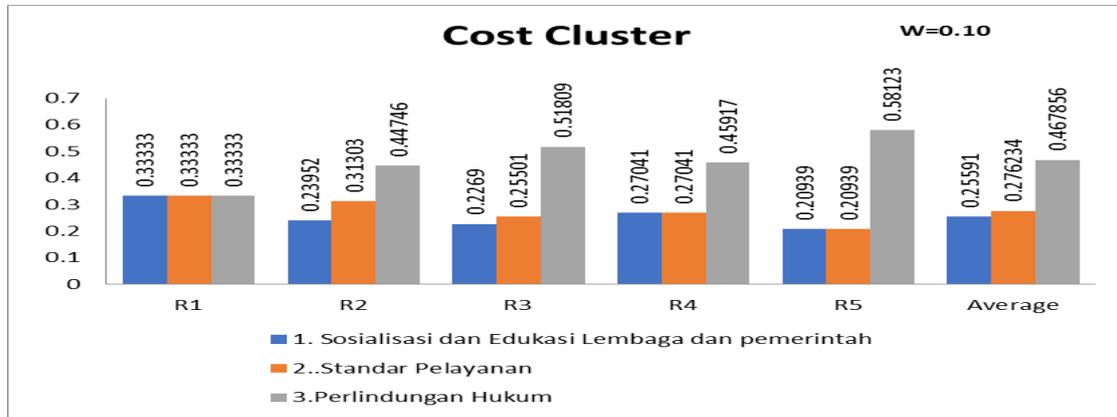

Figure 7. Geomean Cluster Cost

Result of Rater Agreement Risk Cluster

The agreement for Risk aspect even though is W = 0.13. In general, the main priority element of the Riks Cluster is claim fraud and the second priority is in government regulations as well as the last priority element of foreign companies.
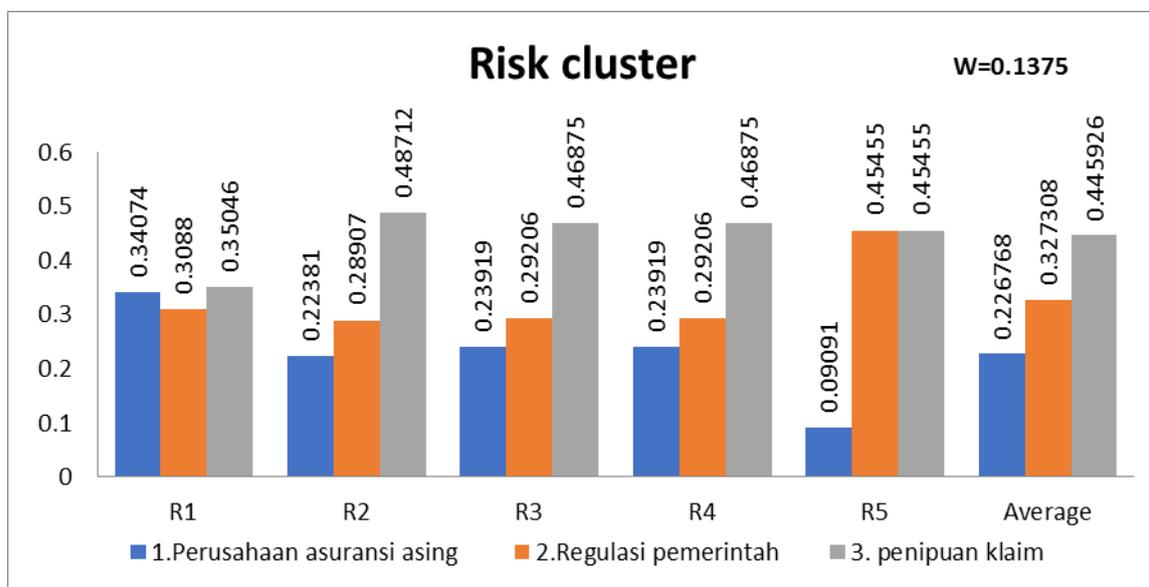

Figure 8. Geomean Cluster Risk

Geometric Mean Results

Geomean BOCR Cluster Results

From the results of data processing, the geometric mean value is obtained, namely the result of the overall average value of the respondents. The aspects in this study are divided into four, namely benefit, opportunity, cost and risk.
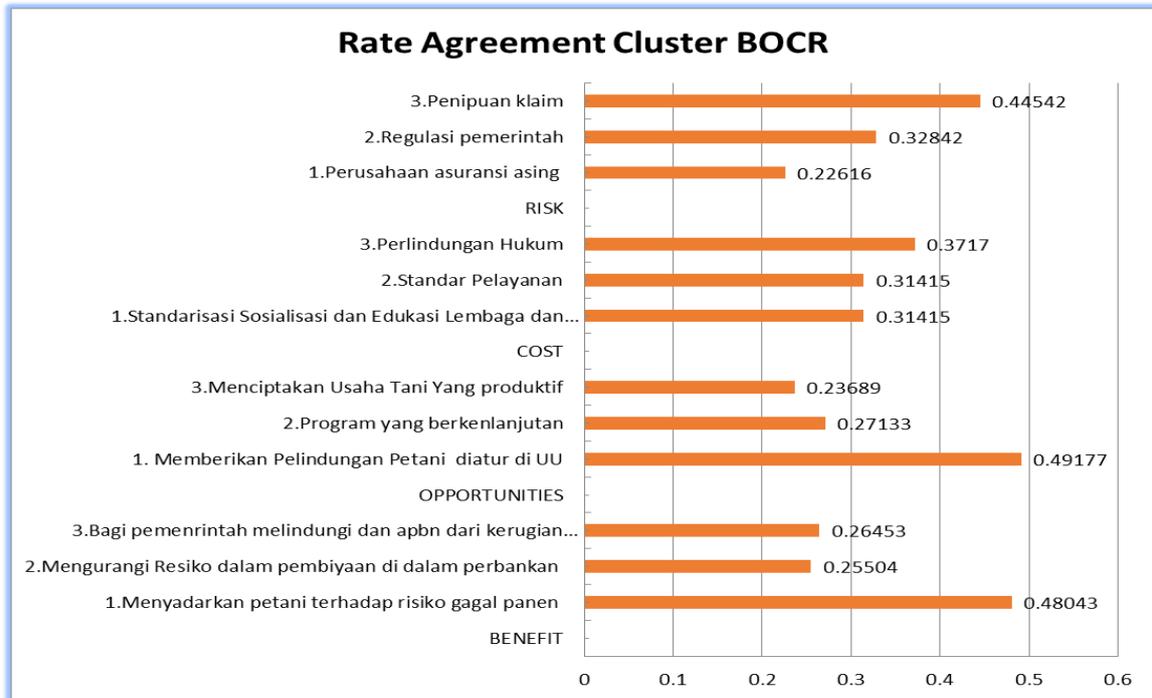

Figure 9. Result Geomean BOCR

From the Risk Cluster, the largest value of claim fraud and the lowest is the trend of foreign companies with a value of 0.22. Then in the Cost Cluster, the highest value is legal protection with a total value of 0.37, then followed by service standards that have the same trend of government socialization, namely 0.31. Furthermore, in the Opportunity Cluster, the node with the highest score was obtained by the aspect of farmer protection regulated in law with a value of 0.49, followed by a continuous program of 0.27, and the previous efforts which were productive with a value of 0.23. At the Benefit Cluster, the highest value is the farmer's awareness of crop failure, followed by reducing the risk in financing in banks, and the last the protection APBN from natural disaster losses.

Alternative Geometric Mean Clusters

There are four alternatives or strategies in implementing sharia insurance for the agricultural sector.
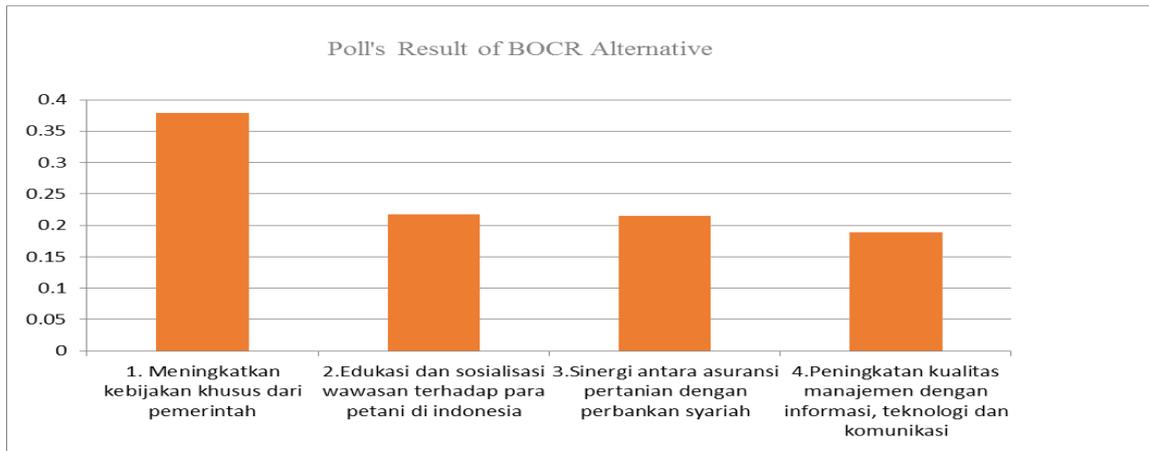
Figure 10. Alternative Geometric Mean Clusters

Short-Term Priorities

From the table and figure below it can be concluded that the alternative main priority in the short term according to the respondents is to increase the special policies of the government. By the policies the government must take part in supporting the implementation of insurance, especially for farmers, supported by the sharia scheme (Figure 11)

Figure 11. Short-Term Priorities by Overall Respondents

Long-term Priorities

From the table and figure below, it can be concluded that the main priority of alternatives in the long term according to the respondents is to increase the special policies of the government. This supported before by the short-term respondent's decision that the respondents agree with the main priority is to improve the policy of the government for the

development of Islamic insurance in the agricultural sector. The role of government is very important for the implementation of Islamic insurance for the agricultural sector (Figure 12) From these results it can be said that in the short or long term the priority alternatives produced are the same. And it shows that the policy of the government is very useful to develop Islamic insurance for the agricultural sector.
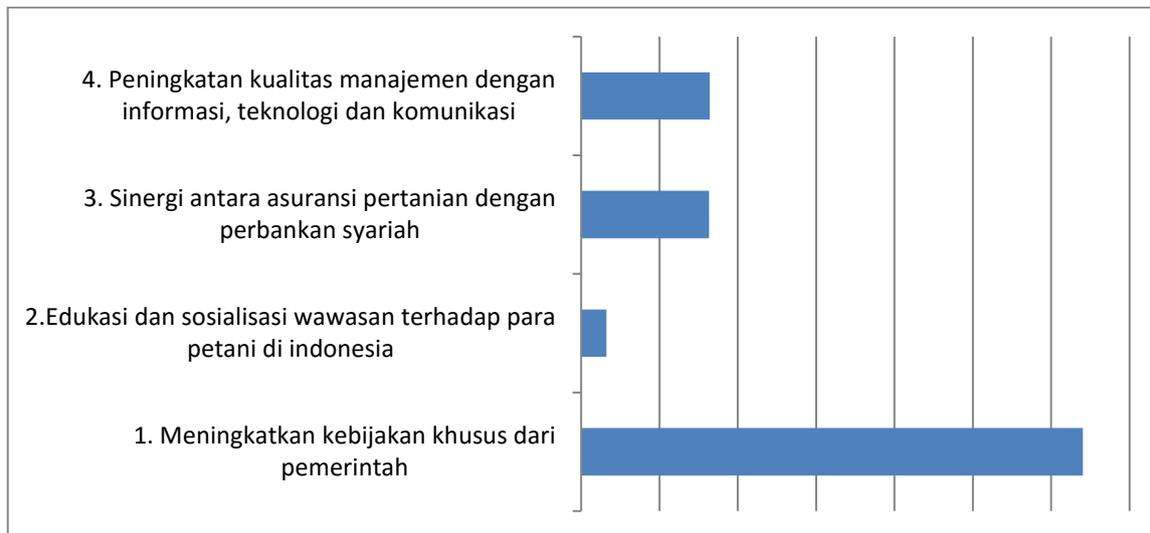

Figure 12. Long-term Priorities by Overall Respondents

Conclusion

The research found that the most important aspect is opportunity. This insurance will give opportunity to the farmer by providing protection for the crop from the risk of harvest failure with shariah compliance and using shariah banking. The shariah scheme will help the government increasing the insurance inclusion. This scheme will benefit the farmer due to the increasing of crop insurance awareness. The requirement of this implementation comes from the cost aspect, namely legal aspect. And the risk will rise from the moral hazard as fraud claim. The results of this study indicate that the implementation of shariah insurance for the agricultural sector has opportunities and benefits, but there are still some notes to be addressed. This shariah insurance together with Islamic banking will mitigate the agriculture risk.

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