Unearthing Study in Asnafs' Large-Scale SMART Paddy-Field (SMART SBBA): An Exploratory Case of Farmers in Yan, Kedah

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ABSTRACT
The Asnafs’ Large-Scale SMART Paddy Field (SMART SBBA) project is an initiative to consolidate rice paddy land through contract farming through a management system. It is to optimize the use of existing resources and increase the efficiency of planting activities and post-harvest production. The project initiative appears to be successful in helping rice farmers manage their fields systematically and increase the yield of higher-quality rice. SMART SBBA by the Kedah State Zakat Board (LZNK) has the potential to eradicate the poverty rate among asnafs in Kedah, in addition to boosting the local economy. Therefore, this preliminary study is to explore the SMART SBBA project through the experience and involvement of paddy farmers in the first season and the second season. This study applied exploratory and descriptive methods from focus group interview data. Results showed that the farmers were satisfied with the overall SMART SBBA LZNK management. However, most rice farmers face the challenges of agricultural input costs, including the high cost of seedlings, fertilizers, and pesticides, which is a huge obstacle for rice farmers in carrying out rice planting activities.

KEYWORDS: Asnafs’, Paddy, Lembaga Zakat Negeri Kedah, SMART SBBA, Challenges

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1. INTRODUCTION
The Large-Scale Rice Field (SMART SBB) is a project designed specifically to align the direction of the growth of the country’s rice and paddy sector with the National Agrofood Policy 2021-2030 (NAP 2.0). The goal is to increase food productivity to attain national rice self-sufficiency level (SSL) from a value of 63% to 75% during the 12th Malaysia Plan, to 80% by 2030 (Ministry of Agriculture and Food Industry, 2021). This initiative by the SMART SBB project has been successful in helping rice farmers manage their fields more systematically and increase the yield of higher quality rice (Ministry of Agriculture and Food Industry, 2021). The SMART SBB project has a target of 150,000 hectares of rice fields throughout the country.

Realizing that the Asnafs’ Large-Scale Rice Field (SMART SBBA) project has the potential to eradicate the poverty rate among asnafs in the State of Kedah, the Kedah State Zakat Board (LZNK) has been appointed as one of the agencies to widen the implementation area of the project.

For a start, the SMART SBBA project involves 65 asnafs’, who refers to categories or divisions in Islamic philanthropy and charitable giving. These categories include the poor, the orphans, the needy, travellers, and those in debt, among others. Then, an area of 200 hectares of paddy fields surrounding the residences of these asnafs’ had been identified as a strategic location to run the SMART SBBA project.

The SMART SBBA project has been expected to improve the socio-economic status and standard of living of both the asnafs and the B40 groups who were in the category from the bottom-tier households that had an income of below MYR4,850 per month. LZNK had outlined three main objectives to be achieved as follows: (i) creating job opportunities for asnafs; (ii) developing
a new ecosystem for the ummah; and (iii) improving the economic cycle from one asnaf to another. In addition, through the SMART SBBA project, LZNK has designed three land packages for rice farmers, namely land owned by LZNK, land owned by asnafs themselves, and land leased or rented by asnafs from LZNK. Based on the Maqasid al-Syariah (Maqasid al-Syariah is an Arabic term that translates to “the objectives of Islamic law” in English. It refers to the higher objectives and purposes of Islamic jurisprudence and the Islamic legal system) framework, LZNK has considered several important factors towards the development of the local ummah under the SMART SBBA project. Ummah refers to the global community or brotherhood of Muslim believers. The ummah encompasses all Muslims worldwide, regardless of their ethnic, cultural or national backgrounds.

These include human capital management, such as training and skills management, marketing and services, and the economic cycle. According to Mansor and Tengku Kasim (2008), human capital development should be the main objective under the Islamic development policy. This is because human capital management is a planned structure aimed at achieving organizational goals (Saha & Gregor, 2012). Hence, taking these elements into account, the SMART SBBA project under the management of LZNK can help the asnafs to form an economic chain in line with the objectives and goals of the project. However, SMART SBBA by LZNK project is still new and has just kicked-start in 2021. Therefore, this preliminary study is to explore the SMART SBBA among paddy farmers.

2. METHODOLOGY

This study adopted an exploratory approach and descriptive method to analyze the data obtained. The exploratory approach is appropriate since this study focused on challenges for which information towards resolution was lacking. In addition, this approach could assist in collecting and developing the necessary information for this study. Further, descriptive analysis was used to provide an overview of the challenges in SMART SBBA projects.

The data gathering was conducted in two phases. In the first phase, a group of rice farmers who took part in the SMART SBBA Project in Yan, Kedah was interviewed via a focus group interview. During the interview, the participants were asked open-ended questions on their experience in the LZNK SMART SBBA project. Among the questions asked were how long they had been involved in the LZNK SMART SBBA project, what their concerns were, and what challenges they faced. A total of 19 farmers were interviewed, and they related their experiences well. The first phase interview was conducted on 26 February 2023 at the SMART SBBA site. The second phase interview was conducted on 28 March 2023 at one of the mosques situated in Yan area. The interviews were recorded and transcribed.

3. RESULTS AND DISCUSSION

The SMART SBBA project organized by LZNK is an efficient measure taken to reduce poverty by increasing rice yields during the project’s duration. During the launch of this project, several agendas were outlined so that sustainable socio-economic development could be achieved. However, four major issues need more emphasis, attention and improvement to gain higher achievement. The issues related to i) rice field management and site preparation, ii) seedling preparation, iii) fertilization and iv) pest management.

3.1 Rice Field Management and Site Preparation

Rice field management is a main and important element in influencing yield growth and crop quality (Abd Rani et al., 2013). The correct management of rice fields must be practised before planting activities are carried out. According to Tian et al. (2020), weeding must be done if an example using machinery, should be lined up before weeding. Further, the fields and water supply lines needed to be repaired after harvesting, and the fields must be ploughed two to three times before the paddy land was levelled to control the water level of the entire plot (Voase et al., 2000). Levelling to obtain a flat land surface was important for rice crops (Van Hung et al., 2022), because a flat rice paddy field surface can support the irrigation system for the proper growth of the rice paddy plants. Therefore, the agencies that monitor the irrigation system, such as the Muda Agricultural Development Authority (MADA) and the Department of Irrigation and Drainage (JPS), were required to ensure that the water depth level was uniform for each area as this would ensure the efficient and uniform distribution of water.

Through interviews with respondents, the condition of rice fields that contained too much water made it difficult to maintain them (levelling the land). In addition, the rice farmers have had to delay the levelling of the rice fields for the previous four seasons. There were times when the paddy could not be fully harvested to achieve 400 rebung (approximately 115.24 hectares) in the LZNK areas. The watery surface condition of the rice fields had caused the soil to become slippery, and the machinery could not enter these fields. For the management of rice crops, the level of soil acidity would determine the rate of fertilization, management, and production. Rice paddy soil that was not acidic was an important factor for rice crop growth. However, rice paddy farmers in the study area face the problem of acidic soil, whereby the soil has been adversely affected by pesticides and chemical fertilizers.
The optimal pH of rice paddy soil for nutrient availability is pH 5.5 to 6.5. Liming should be carried out if the pH of the soil is less than pH 5.0. If the rice plants grew below this range, the paddy field would experience acidic and aluminum stress, which could, in turn, stunt and reduce the rate of rice growth and yield (Azman et al., 2014). MADA Development Officers Area Farmers Organization (PPK) and the Department of Agriculture helped to determine the level of soil acidity and lime, which involved a minimal cost and was used as an effective measure towards this end. Based on the interviews with the respondents, the acidic pressure of the rice fields in the study area was highly acidic to the point that the soil pH meter could not detect the true value. Hence, those respondents were hoping for a more systematic layout and maintenance work such that the land could be restored for the replanting of rice seeds in the coming season. This is only a part of the challenges faced by the farmers.

3.2 Seedling Preparation
Rice seedlings were important inputs for the rice crop sector. The government had tried to overcome this problem by updating and re-evaluating the rice planting plan so that it was in line with the needs and demand for rice seedlings in each season. In addition, various agricultural agencies under the Ministry of Agriculture and Food Security (MAFS) had been appointed to control the quality as well as the mechanism for the production and supply of rice seedlings by all production companies. In the states of Kedah and Perlis, MADA and Farmer’s Organization Authority (LPP) had endeavored to carry out periodic monitoring to ensure that the production and distribution chain of rice seedlings was sufficient to cover the needs of each paddy field area.

Based on the findings of the study, MADA and LPP would select the best rice seedlings to be distributed to the farmers. This selection was subjected to the Seedling Certification Scheme by the MAFS (previously known as Ministry of Agriculture and Agro-Based Industry (2011). The Scheme was established to issue a certificate of genetic purity and identity for rice seedling varieties for legally appointed producers. Accordingly, seedling lots that were certified and met the set standards were given a blue quality certificate label for genuine rice seedlings and a light purple label for registered rice seedlings. In addition, there were three classifications for the seedling categories involved in the production of genuine rice seedlings, namely Basic Seedlings, Registered Seedlings, and Genuine Seedlings. Therefore, to ensure that rice seedling production was authentic, several important elements needed to be considered, including nurseries and seedling farms, sources of certified seedling categories, farm inspection, rice seedling processing, plant inspection, seedling quality testing, and store and stock inspection. In this way, the agencies involved could ensure that only certified rice seedlings were offered to farmers where each rice seedling must be in good condition, systematic and easy to track.

In addition, the interviews conducted with the respondents mentioned that they had obtained genuine seedlings from LZNK. These seedlings must be soaked overnight to ensure that they have a high probability of survival after direct sowing or wet sowing. These methods required two bags of seedlings for each relung (approximately 0.29 hectare), involving expenses of about RM80.00 to RM100.00 per relung compared to the transplanting cost (planting using machinery) at RM400.00 for one relung. However, not all the seedlings that were sown would survive. According to the respondents, in the third season when the study was conducted, the rice farmers had to sow seedlings up to four times.

Respondent 9: As previously mentioned, we planted paddy on Zakat’s (LZNK’s) land last season. Earlier, we sprinkled the seed twice, but it did not grow. So, we decided to plant the paddy.

Respondent 8: At times, we only need to sprinkle (the seed) just once, and it grows well. [There is] No need to embroider, no need to do anything else, it grows up beautifully, ... (at times) we sprinkle up to 4 times, but still it will not grow.

Another issue in seedling preparation includes the issues of pomacea canaliculata

Respondent 9: Whenever we want to sprinkle the seeds, we will encounter the problem of snails. The snail is known locally as the ‘gondang mas’ (its scientific name is pomacea canaliculata). We are afraid if we sprinkle the rice seeds in the water, it could lead to the rice seeds not growing, and the soil becoming rotten. This further adds to the problem of ‘gondang mas’. In addition, the seedling distribution method had also caused the seedlings to grow unevenly, which resulted in the rice farmers having to bear the increased cost of seedlings, cost of additional work, as well as the cost of embroidering. It has been understood that the cost for workers to embroider rice seedlings was RM35.00 per head per morning.

3.3 Fertilization
Fertilizer is the most important input required for high agricultural production. The findings of the study showed that all SMART SBBA respondents in the Yan area had used fertilizers supplied through government-subsidized fertilizers. Nevertheless, all the respondents admitted...
that they need fertilizers, nutrients, or additional fertilizers according to soil conditions, time, and area. This is in line with the MADA study of 2019 that among the important aspects that needed more attention was the rate and time of fertilization. In addition, Hashim et al. (2019) stated that the correct use of fertilizers could guarantee high rice production results, evincing that rice plants needed nutrients for growth and good yield production. Fertilization had to be done periodically in each season because even though the nutrients still existed in the soil, the quantity was inadequate due to losses because of seepage, secretion, and so on.

In addition, the practice of most respondents was to use lime to restore and balance the pH of the soil before planting the paddy. Some respondents also used fertilizers to restore the soil. In terms of fertilization, the challenges faced by asnafs’ farmers in this study could be divided into three: (i) the high cost of inputs; (ii) the continuous increase in the price of fertilizers; and (iii) the lack of good farming practices. All respondents thought the cost of agricultural inputs, such as fertilizers and nutrients, was high and not commensurate with the output obtained.

Respondent 8: The cost of fertilizer might be high when we obtain it from an external company. For instance, recently, LZNK purchased fertilizers from company X, which cost RM4,000.00. That was what we could not stand. Not to say that the fertilizers from external parties were not good, but the cost was too high.

Respondents 6, 7 and 8: The costs were too high. Up to RM4,000.00 is a very high cost. The fertilizers were too expensive.

This situation caused some respondents to be in debt, due to the escalating costs, from preparing the crops up to production of output.

Respondent 2: We were in debt, just to control the disease

Respondent 3: We owe the suppliers when we need to buy fertilizers

The respondents think additional fertilizers from third parties or sellers could help greatly.

Another challenge is that all respondents admitted to facing an increase in the cost of agricultural inputs, such as fertilizers and boosters. Indeed, the main issue currently is the continuous increase in the price of fertilizers in the market. Of prime concern to all respondents and rice farmers was the fact that they were facing high fertilizer prices which went beyond their means on an on-going basis. Organic fertilizers can be highly lucrative in implementing the SMART SBBA project.

This has been proven by the high yield obtained in the Kuala Selangor and Sabak Bernam areas (Official Statement Report of the Upper House of Parliament, 2020). The Good Agricultural Practices (MyGAP) study on fertilization has found that all respondents admitted that organic fertilizers have been more productive. However, only two respondents have used organic fertilizers. Other respondents also acknowledged that organically fertilizing their crops has produced a healthier yield which should be emulated by the surrounding rice fields. This method is in tandem with the Integrated Pest Management (IPM) and the System of Rice Intensification (SRI), which is a method of rice crop management using natural resources to minimize the use of synthetic chemicals. The use of organic fertilizers can provide valuable nutrients to the soil needed for the growth process of rice plants (Pradhan et al, 2014).

3.4 Pest Management

In their efforts to increase the productivity of rice, rice farmers are faced with the problem of pest attacks that resulted in reduced agricultural yields (Damalas & Eleftherohorinos, 2011). To overcome this problem, rice-producing countries have taken the initiative to use pesticides to save the rice plants (Sharifzadeh et al., 2019). Based on a Berita Harian report on 1 December 2021, the price of poison has been increasing continuously at 199%. The Ministry of Agriculture and Food Security (MAFS, 2022) has introduced alternative measures by encouraging lesser dependence on pesticides and the transition from chemical to organic fertilizers, in addition to introducing various approaches and expanding its services over the long-term. Among these initiatives is the application of effective microorganism (EM) technology, encouraging the reuse of agricultural waste materials, such as rotting rice straw and organic fertilizers, as well as introducing the use of agricultural waste rice straw as a plant medium. In addition, various other natural products can be used, including neem leaves (incense leaves) and seruntun roots (scientific name: patawaili), and waste materials, such as banana, watermelon, and papaya peels. Further, the MAFS encourages integrated pesticide management (IPM) through a combination of cultural planting methods and physical and biological control. However, the study’s findings showed that the measures have yet to be proven fully effective. This is because using organic pesticides requires the cooperation of most rice farmers. The method is not suitable to be applied if there is only a few farmers committing, while the rest continue to use chemical poisons. Furthermore, pest attacks vary in each season, depending on climatic factors, i.e., whether it is the hot or rainy season (rainy).
In general, rice seedlings are sown under wet conditions, and there is always a high chance of pest attack problems. The pests that often attack rice fields and rice plants include plant pathogens, insect pests, weeds, nematodes, and mammals, such as mice (Standard Operating Procedures (SOP), 2021). Weeds usually need to be controlled at an early stage. If not eliminated, the weeds compete with the rice plants to obtain nutrients, sunlight, water, and space (Abd Rani et al., 2015). In addition to being a competitor, weeds can be a place for pests and disease pathogens to breed (Ministry of Agriculture and Food Security, 2022). This situation and problems have affected the rice production yield and adversely affected the economic returns to the local rice farmers. In addition, rice farmers are also faced with increased costs for pest management and control.

Respondent 9: There are a lot of diseases.

Respondent 8 interrupted: mmm.. nothing much can be done.

Through the results of the interview, rice farmers had to fork out their own money for pest management to ensure the quality of the harvest.

Respondent 8: The cost of disinfectant is high. But we have no way to control the spread of insects or diseases.

Respondent 5: Hence, we ended up spending more on disinfectants that are very costly to us.

4. CONCLUSION

The implementation of the SMART SBBA project by LZNK appeared to have high prospects. The strategies and policies that have been formulated have opened great opportunities for rice farmers to increase rice production, in addition to boosting the local economy. However, the overall management system for the project’s goals needs to be improved considering that the project has just been launched. Table 1 summarises the results of this qualitative research on the SMART SBBA paddy farmers. Based on the survey conducted, most rice farmers face the challenges of agricultural input costs, including the high cost of seedlings, fertilizers, and pesticides, which is a huge obstacle for rice farmers to carry out rice planting activities. Although various incentives have been introduced, the expenditure currently exceeds the value of the initial estimate of the cost of agricultural inputs. Hence, the agencies responsible need to seriously investigate the problem of the increase in the price of agricultural inputs as this has become an obstacle to the progress of the agricultural sector.

Table 1: Summary of Challenges faced by the SMART SBBA Paddy Farmers

<table>
<thead>
<tr>
<th>Problems faced by farmers</th>
<th>Degree of problems faced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural input costs</td>
<td>High</td>
</tr>
<tr>
<td>Seeding cost</td>
<td>High</td>
</tr>
<tr>
<td>Fertilisers cost</td>
<td>High</td>
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<tr>
<td>Pesticides cost</td>
<td>High</td>
</tr>
<tr>
<td>Soil condition</td>
<td>Rather acidic</td>
</tr>
</tbody>
</table>

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