



Proposed *Waqf* Framework for Food Security and Price Stabilization Policy of Rice in Indonesia

Muhammad Dandy Alif Wildana^a, Syed Musa Syed Jafaar Alhabshi^a

^a*IIUM Institute of Islamic Banking and Finance, International Islamic University Malaysia*

Abstract

This paper provides a framework for agriculture *waqf* in support of a food security strategy and price stabilization policy for rice in Indonesia. Instability and inefficiency of rice production has increased, involving a high cost of production and low access of financing, which leads to instability of stock. Long supply chains, mismatch of supply and demand of rice due to the timing gap between harvesting periods, also encourages speculative practices. *Waqf*, through agricultural ventures that focus on producing rice, can play multiple roles and provide solutions for the entire supply chain of rice involving a framework designed to address the problems of rice in Indonesia. The proposed framework is intended to benefit all related stakeholders by maximizing the potential of *waqf* assets that already exist in Indonesia, with the justification based on the data, that provides an insight in to the real conditions of rice in Indonesia. The findings reveal that *waqf* can fit perfectly in the current framework for food security and price stabilization policy, with an additional reserve that independently enables the custodian of *waqf* assets from agriculture (rice) ventures. This promotes farmers as *waqf* partners, to create a stable rice production environment and to shorten long supply chain by creating associated commercial subdivisions. Hence the benefit is distributed to both farmers and customers through various subsidies and necessary aid in order to attain food security and stabilize the price of rice thereby improving the welfare of Indonesians.

Keywords: *Waqf*, Agricultural *Waqf*, Food Security, Price Stabilization Policy

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1. Introduction

Currently, food security has become a central issue due to the fact that food production is not able to keep up with the pace of growth in the world population. Raconteur (2017) projected that the global population would reach almost 10 billion people in 2050, which reflects an additional of 2 billion in a period of just 30 years, followed by an increase in the population to a total of 12 billion by the year 2100, which is more than 71% increase in the current global population in less than 100 years.

Indonesia, which is the world fourth most-populous country in the world, has been facing a similar problem in food security. The population by the year 2035 is expected to grow to 305 million people, which marks an increase of 46 million from the amount of 258.705 million recorded in 2016 (BPS, 2016). Therefore, assuming that per capita consumption of Indonesians for rice is 84.656 kg in 2015 (BPS, 2017), then the total consumption of rice will increase to 3.9 million tons by 2035.

Rice is widely known as a staple food for Indonesians, therefore, it plays a significant socio-economic and political influence nationally. Moreover, this can be observed in the data released by the Statistic Indonesia (BPS), which recorded a sudden increase in both the consumption and price pre and post 1997-1998 economic and political crisis due to the disrupted flow of rice at that time, especially in the capital city of Jakarta. Hence, any changes in the supply and demand for rice, with regard to rice stocks, availability and price can significantly affect the socio-economic and political condition of Indonesia.

Furthermore, inefficient production of rice and long distribution chains are among the factors that contribute to the high price of rice, especially in the remote area of east Indonesia, or the area that does not produce rice at all. More importantly, this condition is exacerbated by the speculative acts from merchants that benefit from the scarcity of rice by increasing the price to maximize profit. Therefore, the aim of this research is to propose a new framework based on *waqf* in order to ensure food security and stabilize both the

stocks and price of rice in Indonesia.

1.1 Country Background: Indonesia

The Indonesian archipelago is one of the largest countries with an area of 1.913 million m² and blessed with abundant landmass and water (BPS, 2017). In addition, there are more than 17 thousand islands found in Indonesia whereby some of them are among the largest islands that further affirms that Indonesia possesses one of largest bio diversities in the world. The population of Indonesia in 2016 amounted to 258.7 million with a steady growth of 1.3% - 1.5 % per annum. Moreover, BPS projected that the population will expand to 284.8 million in 2025 and 305.6 million in 2030. In terms of GDP, the amount reached IDR 7,831.7 trillion (USD 548.2 billion) in 2016 from IDR 3,950.9 trillion (USD 276.56 billion) in 2007, thus making it the largest economy in the South East Asian region. Furthermore, economic growth was maintained at 5-6% per year over the last ten years. Moreover, there is also a positive growth for per capita income, from IDR 17.4 million (USD 1,218) in 2007 to IDR 48 million (USD 3,360) in 2016. However, it is crucial to note that the number of poor decreased quite significantly over the last 10 years, from 37.2 million people (16.58 % from population) in 2007 to 28 million people (10.9%) in 2016.

2. Waqf: Perpetual Charity

Waqf in Islam is defined as holding or confining certain assets or property whereby the benefits of the assets are channelled as per stipulated in the deed (Kahf, 2016). The ownership of the assets is now transferred to god entirely whereby a board acts as the trustee to safeguard *waqf* assets, while the manager(s) maintain and develop the asset to become productive for the purpose of providing more benefits and sustaining itself at the same time. *Waqf* assets are classified as non-perishable property; hence, the enjoyment of the asset benefit does not reduce the asset itself (Kahf, 2016) and they are usually in the form of tangible assets such as land, buildings, valuable metal, and others. *Waqf* is one of the instruments in Islam that functions to preserve the wealth of the Muslims through the perpetuity characteristics that are vested in the *waqf* itself.

According to (Kahf, 2016), there are three types of *waqf*: religious, charitable, and family. Religious *waqf* is commonly used for several purposes such as the building of mosques, gravesites, and other related religious activities. Meanwhile, charitable *waqf* focuses more on the socio-economic development of the community whereby the benefits generated are channelled to support the poor and public interest, thus it can be in the form of healthcare, roads, schools, library, plantation, services, and other productive activities. The last form of *waqf* is family *waqf*, whereby in this case, the benefit of the *waqf* asset is meant for the descendants and what is left of it will be donated for charitable purposes. Hence, this practice tends to envisage the concept of family protection and almsgiving. Therefore, *waqf* in Islam is considered as a quite flexible charitable institution provided that the activities are not against the deed written by the donor. Contrastingly, the western foundations strictly confine the benefits to only religious and philanthropic purposes (Kahf, 2016). In regard to this matter, Kahf (2011) further registered two characteristics of *waqf* described as follows:

1. Perpetuity: Assets that had been declared as *waqf* will stay as *waqf* forever, thus it cannot be transferred, sold, or become a collateral. However, exchanging a *waqf* asset into another (*istibdal*) that has equivalent value is permitted provided that all requirements are met, and the condition of the asset is alienated and unproductive.
2. Permanence of deed stipulation of the *waqf* founder: The stipulation in the *waqf* deed of the donor must be properly conducted as per written in the deed as long as the deed is not against sharia which include the management, the provisioning of the benefits, the beneficiaries, and others. In the case of the deed becoming infeasible, the benefit of *waqf* must be channelled to the closest-possible cause as per stipulated by the deed, and in the worst-case scenario, it will go to the poor and needy or used for public interest.

Moreover, Kahf (2011) emphasized that there are several legal conditions which fulfil the legitimacy of *waqf* assets:

1. The asset must have perpetuity characteristics.
2. The property given cannot be taken back (permanent one-way transfer).

3. The *waqf* founder must be sound in mind, and of age and legally fit.
4. The purpose of the *waqf* must be based on charity, both from the founder and *Shari'ah* perspective.
5. Beneficiaries and the purpose of *waqf* must be alive, legitimate, and not against *Shari'ah*. *Waqf* on the deceased person is not permissible.

In the past, *waqf* institution plays a central role as the provider of public goods for the community (Çizakça, 1998; Islahi, 1992; Kahf, 1980). More importantly, the area served by *waqf* is not limited to religious-related activities, but also include other functions such as provider for housing, capital provider for businesses, roads, bridges, healthcare, and education. Nevertheless, *waqf* institution still prevail and proven to contribute for the development of the society and assist government despite its wide area served. Hence, this proves that the potential of *waqf* is highly utilized and operated considering that it was proposed to fill in the gap in case that the government fails to provide public goods (Çizakça, 1998).

Unfortunately, the number of *waqf* institutions have been diminished and their role significantly reduced in the modern era. Moreover, *waqf* as the pillar of socio-economic stability in the Muslim world was seriously affected when Western countries colonised Muslim countries with the purpose of expanding their influence and ideology. Hence, this has caused the history of *waqf* institution to almost be forgotten in modern history, which in turn has required contemporary Muslim governments to undertake some initiatives in order to reinvigorate *waqf* institution and make them as one of central institutions within Islamic economics (Çizakça, 1998; Kahf, 2011).

The success of *waqf* can be seen in the history of the Ottoman Empire whereby most of the public goods are provided by *waqf*, and as the source of the economic capital for the businesses throughout the Ottoman Empire (Çizakça, 1998). In this sense, *waqf* had successfully served the Muslims and become an example of a charitable institution which is based on *Shari'ah* laws that clearly represent Islamic values and teachings. However, *waqf* is not forbidden to be a profit-based charity institution as mentioned by Kahf (1980) for the sake of public interest, which can be performed with the Islamic government support and/or incentives.

2.1 Current Development of *Waqf* in Indonesia

Waqf in Indonesia was previously regulated by Act no.5 Year 1960, which acts as the main legal provision for *waqf* in Indonesia. Unfortunately, this act only provides guidance and conceptual legal provision for land *waqf* which is clearly described as “*waqf* land that has the title deed must be protected and regulated by government regulation”. However, this law is lacking because it only protects and provides legal provisions for land *waqf* instead of other forms of *waqf* asset (Bappenas, 2015). Hence, the Indonesian Parliament issued Act No. 41 in 2004 on *waqf* that became the foundation of the establishment of *Badan Wakaf Indonesia* (BWI) or Indonesian *Waqf* Board, for the purpose of overcoming the legal issues regarding the management as well as the clear-cut definition of *waqf*.

Furthermore, this new act is supported by Government Regulation No. 42 in 2006 in regard to the implementation of the act for the purpose of ensuring that the operation of BWI to run smoothly within the jurisdiction of Indonesia. Apart from these two primary acts, there are other regulations that further strengthen the position of BWI which include Ministerial regulation and/or minister decision which serves as the legal source for BWI activities. However, it is important to consider that there are other privately organized *waqf* institutions approved by the government besides BWI, and *waqf* organizations are commonly regarded as branches of prominent Islamic organization in Indonesia.

Meanwhile, the most common practice of *waqf* is in the form of land for social purposes such as mosques, schools, and gravesite which are mostly utilized as non-profit social cause (Bappenas 2015). In this case, it is rare to discover another *waqf* asset under management that generates income for sustainability, and the number is most probably very small even if it does exist. The utilization of *waqf* asset in Indonesia according to Robiyantono (2016) serves various purposes, but can be generalized to social, non-profit, and non-productive asset. *Waqf* land in Indonesia is mostly utilized for mosques (43.74%), followed by *musalla* (small mosques) [30.13%], schools (10.61%), gravesites (4.23%), Islamic boarding schools (2.98%), and other social purposes (8.32%).

In addition, BWI in its capacity as government-based *waqf* institution recorded that there are approximately 435,768 plots of lands with a total amount of 4.3 billion sq² that are scattered across Indonesia as of 2017. Specifically, 65.89% of the land has been certified as *waqf* land, while the remaining are not yet certified. Nevertheless, there is no specific information provided regarding the land despite the fact that the land registered by BWI is a significant amount. Hence, this makes it difficult to genuinely understand the real

purpose of the *waqf* land itself, and it becomes equally difficult for *waqf* managers to determine the suitable investment for the asset to generate income and sustain it in the long term.

In the case of cash *waqf* collections, BWI has been working together with Islamic banks in managing the collection, and the average collection of cash *waqf* is IDR 810 Billion (approx. equivalent to USD 56.7 Million) from the year 2009-2013. In particular, the highest collection of cash *waqf* occurred in 2010 with the amount of IDR 1.673 trillion (USD 117.1 million) when President Susilo Bambang Yudhoyono launched the national movement of cash *waqf* in 2010, this movement become a positive catalyst to increase the collections of cash *waqf*. However, the effects seemed to dissipate, and the amount collected was gradually reduced to IDR 459 billion (USD) in 2013 with no data available beyond the year 2013 after the launch of the movement in 2010.

Bappenas (2015) stated that the approach using prominent figures (in 2010, the President of Indonesia himself) has significantly influenced the program launched by the government. Moreover, cash *waqf* can contribute significantly due to the growing number of Muslim middle class in Indonesia that are educated and motivated to contribute more through (cash) *waqf*. Nevertheless, such an approach requires effective marketing and proper funding in order to popularize *waqf* itself. On the other hand, the main concern of Bappenas (2015) refers to the budget and management issues of BWI. In this case, the budget and board members of BWI were stated to be insufficient to support its activities, which will then result in the poor performance of the institution to deliver its missions and programs.

The limited application of *waqf* assets in Indonesia and the absence of proper framework in managing *waqf* tend to lead to the underdevelopment of both the assets and the institution. The lack of understanding on *waqf* that only acts as charitable and non-profit organization according to Kahf (2011) further accelerated the destruction of *waqf* and its socio-economic purposes. Meanwhile, Cizakca (1998) mentioned that there is a hidden economic potential behind the religious appearance of *waqf* as charity whereby most of the public goods in the Ottoman era are provided by *waqf*. Apart from that, *waqf* as the provider of public goods can help the government to reduce the spending on public goods which allows the budget to be allocated for other purposes.

3. Food Security: Indonesian Perspective

3.1 State of the Art, Strategy and Policy

FAO (2006) stated that food security can be further categorized into four dimensions, namely availability, access, utilization, and stability. Hence, this indicates that the food needs to be accessible at any time and sufficient (in quality and quantity) for the daily intake of a person. These four dimensions are inseparable; thus, the government is obliged to provide food security to its people to ensure that they can maintain healthy living and strong states.

Economist Intelligence Unit Global Food Security Index (EIU GFSI) in 2017 proposed that the measurement of food security level of a country can be performed based on two major categories: overall ranking and natural resources coupled with resilience rankings. The first category measures affordability, availability, quality, and safety which are the core issues of food security. Meanwhile, the function of the second category is to measure the natural resources asset that supports food security and its resilience to the threat of climate change and natural disaster which include draught, flood, and the management of disaster risk.

In the overall category, Indonesia is ranked 69 out of 113 countries recorded which implies a lower ranking compared to its neighbouring countries such as Singapore, Malaysia, Thailand, and Vietnam. Apart from that, Indonesia is ranked 109 out of 113 countries in the resilient index, which makes Indonesia very vulnerable to the threat of natural disaster and climate change that can disrupt the food supply. Meanwhile, Indonesia is ranked 73 out of 113 countries in the combined index, whereby there was a drop of 4 positions compared to the previous year index, thus strongly indicating that the performance of Indonesia in securing its food security is deteriorating.

In another report, World Food Program in its joint research with Indonesia's Ministry of Agriculture issued an atlas that is able to analyse food security and vulnerability of every districts in Indonesia. More importantly, there are two major indicators in the report: (1) food vulnerability and chronic nutrition, and (2) transient and vulnerability that explains the climate and environmental factor (WFP & BKP, 2015). On a similar note, a report published in 2015 showed that there was a decreasing trend for most of the districts

surveyed, with a drop of 11% in 2005 to 4% in 2015 for the most vulnerable districts. Most of the lowest category in this atlas are districts that are based in the eastern part of Indonesia which have been having difficulties in access, high distribution costs, and inadequate infrastructure due to its remote position from economic powerhouse of Indonesia (WFP and BKP, 2015).

Furthermore, it is important to note that food security strategy and policy are under the jurisdiction of Badan Ketahanan Pangan (BKP/Food Security Agency) under the Ministry of Agriculture that work hand in hand with the Ministry of Trade and Badan Urusan Logistik (Bulog / Indonesian Logistics Bureau). In this case, the former is responsible for the production level, while the latter is assigned with the task of distribution and downstream level. Therefore, food security strategy published by BKP focuses on (WFP and BKP, 2015) the following aspects:

1. The increase in the amount of food through the improvement of local capacity which comprises of paddy (rice), maize, soybeans, meat, sugar, chili, and shallot.
2. The improvement in food distribution and community access to it.
3. The improvement in food quality and community nutrition.
4. The protection of food security through prevention and anticipate natural disaster, pest infestation, and animal diseases.
5. The improvement of farmers well-being and other food producers.

The abovementioned five-point strategies are further strengthened by Food Security Agency strategy which is concerned with food security in Indonesia:

1. Prioritizing agriculture and rural based economy to increase domestic food production, create jobs, and boost farmer's income.
2. Food compliance for poor and transient (because of natural disaster, social, and economy) through food aid distribution.
3. Education of the community to diversify and utilize other sources of food based on local resources.
4. Securing the availability of fresh food supply.

Hence, it is clear that the aim of the Ministry of Agriculture is to increase the national production capacity in fulfilling the domestic demand and attaining self-sufficiency level, whereby imports of certain key agriculture products are no longer necessary unless it is urgent. Apart from that, the distribution of food products also becomes the main concern of the Ministry of Agriculture to ensure that everyone will have access to the food as well as to improve the wellbeing of the farmers due to the fact that agriculture products are considered as perishable items that require appropriate and careful handling and process.

3.2 Food Security Issues in Indonesia

Indonesia is facing food security issues due to the mismatch between the supply and the demand of food commodities, especially rice, which as mentioned earlier, is the staple food of the country. A considerable amount of research conducted by Timmer (2004), Suryana (2005), Atmanti (2010), Prabowo (2010), Santosa, Adnyana, and Dinata (2011), and Piesse (2016) focused on food security, which investigated the challenges, prospects, and the possible changes in the agriculture sector that may affect food security, including the reliance on the foreign market as well as the attempt of the government to control the price of rice.

Over the years, the problems of food security in Indonesia have grown to a more critical level. Atmanti (2010) elaborated on food security by dividing it into three parts, namely availability, distribution, and consumption and supporting subsystem. The decrease in the ability to provide enough supply of food in Indonesia has raised an alert that Indonesia is unable to provide food that leads to famine and hunger in some part of Indonesia, which further reflects the vulnerability level of Indonesian food security. Interestingly, Timmer (2004) stressed that there are possible connections of rice with poverty level, economic growth, and food security. Meanwhile, Piesse (2016) argued that Indonesia still has to rely on the foreign market for food supply including rice despite having devised a self-sufficient plan on food.

On a similar note, Atmanti (2010) analysed the consumption pattern of Indonesian people, which can be obtained from the data available in the BPS whereby most of the income generated are utilized for food expenditure. In general, the expenditure of people can be divided into two which are food and non-food expenditure. The higher the income generated, the larger is the consumption of non-food commodities compared to food expenditure. Furthermore, the percentage of calories consumed also decreases as the income

grows due to the diversified intake of calories with higher price source of food. Suryana (2005) mentioned that there are seven problems that must be significantly addressed by all stakeholders as well as the government which are described as follows:

1. Rice-oriented policy marginalizes the other option for energy source. There are several other options for energy source such as cassava, corn, sweet potato, and others.
2. The downstream technology in packaging and processing rice makes the loss and degradation of rice to be relatively high and cause insufficient production.
3. Poor distribution channel leads to the increase of price.
4. Instability of price and low level of efficiency causes the price of rice to become volatile, thus putting both consumer and producer at disadvantage.
5. Government should put more effort to guarantee stability on both output and price, and re-enact the regulation of rice market to ensure that rice is more affordable due to the fact that rice is an important product.
6. Less support for technology in agriculture has forced farmers to conduct production that is less efficient and higher in cost.
7. Provide help in terms of additional capital injection for farmers in order to develop and enhance production to ensure the increase in the production output.

Food security issues must be critically addressed by all stakeholder because the solution to the problem requires a great deal of effort from both the government and the people of Indonesia. In other words, it will be very hard for the government to apply its policy to enhance food security without the support from the Indonesian people, especially in the area that is considered vulnerable as a result of food deprivation issues and malnourishment.

4. Rice Data and Issues in Indonesia

4.1 Rice Production and Costs

Rice production is significantly affected by the number of land in which the crop is planted. BPS data shows that since 1985 to 2015, the area harvested solely for rice steadily increases from 9.9 million ha. in 1985 to 14.1 million ha. in 2015. In 30 years, the harvested land is expected to increase for 5.2 million ha. (BPS, 1985-2015). Most of the area harvested for rice in Indonesia is located in Java and several other provinces such as south Sulawesi and Sumatera island. In the meantime, the average yield per hectare of rice production has increased over the years from 1985 to 2015, with a drastic drop in 1990 where the harvested area was reduced from 10.521 million ha. in 1989 to 8.470 million ha., which signifies a drop of 19.48%. However, the number recovered to 10.281 million ha. in subsequent years and has been increasing over the years until 2015 (BPS, 1985-2015).

However, it must be noted that BPS only records the production of rice in the dry unhusked rice (or paddy as per written in their annual report), while the rice that is widely consumed is in the form of husked rice that has to undergo the milling process to peel off the hard husk of the rice in order to allow the rice to be consumed. In addition, BPS provides a conversion rate that can calculate the real rice production. The first ever conversion rate is 68%, which was recorded from 1985-1989. The following rate is 65% from 1989-1995, and 63.2% from 1995 to 2008 (BPS, 2015). Moreover, the conversion rate set by BPS since 2008 is 62.74% (BPS, 2015).

The method of calculation involves multiplying the conversion rate by the amount of dry unhusked rice. For example, only 62.74 kg consumable rice produced out of 100 kg of dry unhusked rice based on the newest rate. Hence, this implies that 37.26 kg are discarded during the milling process. In 1985, it was revealed that the production of dry unhusked rice was at 39.032 million tons, while the husked rice was at 26.542 million tons and the number has significantly increased until 2015 with the production reaching 75.397 and 47.304 million tons, respectively (BPS, 1985-2015).

The costs of production in planting paddy as the source of rice is calculated based on cost per hectare per harvest season BPS (2014). There are two types of paddy that are calculated by BPS, namely wetland and dryland paddy. Wetland paddy per hectare generates a revenue of IDR 17.2 million (USD 1,288.3) and the production cost of IDR 12.7 million (USD 951.4), thus resulting in a profit of IDR 4.5 million (USD 337.2).

Importantly, there are three main components that dominate the cost structure. The first component is wages, which takes up 35.9% from the entire cost, followed by land rent at 29.9%. Finally, the agriculture service cost accounts for 12.4%. Hence, all of them combined together totals 78.2%.

On the other hand, dryland paddy generates lower revenue in line with lower costs. Dryland paddy generates IDR 10.3 million (USD 771.7) of revenue at the cost of IDR 7.8 million (USD 584.4), thus leaving the profit at IDR 2.5 million (USD 187.3). In this case, the top three components in the dryland paddy costs are wage (58.8%), land rent (17.7%), and fertilizers (7.8%). Hence, the combination of these three components makes up to 84.3% from the total cost (BPS, 2014).

4.2 Rice Distribution

Rice distribution in Indonesia is surveyed and recorded by BPS (2016) sourced from three main provinces, namely west, central and east Java that produce almost half of the total production of rice nationally at 47.52%. Hence, other provinces that are not rice producers tend to purchase rice from the producer provinces (BPS, 2016) given the fact that the centre of rice productions are not within the same island. The distribution chain of rice can be simplified as follows:

producer → intermediaries → customer

However, intermediaries can be specified into several intermediaries (BPS, 2016) as shown below:

1. Distributor: trader that directly purchases rice from farmers.
2. Agent: work on behalf of principal to purchase and sell rice based on selected regions, and agent is usually regarded as an extension of the main distributor.
3. Wholesaler: middle to large size trade unit, usually customer come and take the rice directly on cash and carry principles.
4. Assembler: purchase rice from farmers directly and then sell it back to another trader. This function is more broker-like in nature.
5. Retailer: sell rice directly to customer for personal/non-business purposes. Retailer can be further broken down into several groups which include household, other institution (hotels, restaurants, catering, hospitals), processing industry, government, and non-profit organization.

BPS (2016) discovered that most of the rice produced are directly sold to several parties which include the retailer (46.67%), wholesaler (20.72%), and household (19.38%). The remaining rice are sold to assembler, distributor, agent, and supermarket. Meanwhile, the intermediaries take profit by marking up the purchase price from producer along the distribution chain. BPS (2016) defines this as trade and transport margin whereby traders are compensated based on the difference between the selling and purchasing price. Hence, it is understood that this margin is the measurement of output from trading activities.

BPS (2016) surveyed traders in the rice distribution chain and discovered that big traders enjoy a margin of 9.84%, while the retailers enjoy 11.35% of margin. Hence, the margin is amounted at 10.57% when combined together. North Maluku has the highest big trader margin at 19.95%, while Riau top the retailer margin at 28.29%. Meanwhile, West Papua is at 19.82% as for combined margin. On the other hand, the lowest margin for big trader is Bali at 2.38%, whereas the retailer is North Borneo at 2.24%. As for combined margin the lowest is from Aceh with the combination of the margin at only 4.14%. Overall, there are 12 provinces with the margin beyond the national average (10.57%), while the rest are below the national average.

4.3 Rice Consumption and Prices

Rice consumption quantity and its value are recorded in the BPS report once every three years prior to the year 2002. In addition, it is also reported in the consumption expenditure of population of Indonesia whereby the reports are divided into two series that are released annually, every March and September, since 2003. Meanwhile, per capita consumption of rice in Indonesia is fluctuated with an average of 109.2 kg since 1980 but increased to its highest at 1990 with the average consumption of 118.04 kg (BPS, 1980-2017). However, the trend for per capita consumption is steadily decreasing after 1990 whereby March 2017 data recorded the lowest amount at 81.38 kg since the last 37 years (BPS, 1980-2017).

The trend for rural rice consumption fluctuated but more towards a decreasing trend until March 2017 at 89.73 kg. On the other hand, the trend for urban consumption also fluctuated by experiencing a decline after the year 2003 until 2017 with a recorded amount of 80.78 kg. The combination for both rural and urban consumption also fluctuated with the average consumption in the last 10 years ranging from 80-90 kg, while it was recorded at 80.78 kg in 2017 which marks 0.596 kg difference from the national per capita at 81.38 kg (BPS, 1980-2017)

The price of consumable rice started at the rice mill level, in which the dry unhusked rice is processed and turn into edible rice. BPS in its official site and reports tends to record the price based on three main stages, namely rice mill level, wholesale level, and retail level. BPS (2016) recorded that the medium quality of rice price is at IDR 9,107 per kg at rice. Furthermore, the price of medium quality of rice was recorded at IDR 11,511 at the wholesale level. Ultimately, in the retail level, BPS (2016) recorded the price at IDR 13,189. Therefore, it can be concluded that there is a margin of IDR 4,082 or 44% more expensive compared to the rice mill level from the rice mill level to the retail level.

4.4 Rice Issues in Indonesia

There are three potential issues of rice in Indonesia. First, the issue regarding the overestimation of rice production. BPS (2015) stated that there is a potential of overestimation of the rice production which makes it crucial to revise the methodology in calculating the production on the estimation of rice. The second problem emphasized by BPS (2015) is in regard to the rice consumption data. As of today, BPS only recorded rice as per consumed by household and per capita consumption, but without the calculation on rice consumed by industry, restaurants, and other institutions (Rosner & McCulloch, 2008). Therefore, combined rice consumption data is urgently needed to provide insight on how much rice is consumed nationally with the purpose of determining the surplus or deficit of rice as well as the amount of stock as buffer and safe zone in the time of great peril.

The last issue refers to the national and Bulog rice stock. BPS (2015) recorded that the consumption of rice in 2015 was at 32.096 million ton with the monthly average recorded at 2.6-2.7 million ton. The total stock of rice as of September 2015 was 8.846 million ton in various forms, while 4.607 million ton in the form of rice. Bulog itself holds 1.707 million ton of rice or equivalent to 19.3% of rice stock. Overall, national stock is only enough to be catered around two or three months period, while bulog stock alone can only last for two weeks. The combination of inaccurate data on the production and consumption will make the calculation for proper buffer stock difficult, and it will be very destructive if there is a natural disaster or calamity which will definitely affect the production of rice.

Inadequate amount of stock held by Bulog is one of the contributing factors that influence the speculation, thus leading to the instability price of rice in the market (Prastowo, Yanuarti, & Depari 2008). A possible explanation to this might be the amount held by Bulog which indicates how strong is the power of government to influence supply when the price suddenly shifted up due to the increasing demand. In other words, the other rice trader will hold their stock if the government (Bulog) is not in a strong position, which will naturally push up the price of rice.

5. Methodology

The present study employed a qualitative method by analysing the relevant literatures *waqf*, food security, and agriculture in the form of scientific journals, books, and other sources. Specifically, document content archival analysis of policy documents is used to highlight pertinent concepts, principles, policies and procedures to enable the development of the proposed *waqf* framework. It is important to analyse the current policy as this study aim to highlight the framework to become a part of rice policy in the future.

The data of this research were obtained are from the Statistic Indonesia (Badan Pusat Statistik/BPS), relevant government institutions, including official data released from other reliable institutions that support this research. The selected BPS documents and data for this study are based on the initial interview with the officer in charge at BPS main office in Jakarta. This initial interview was conducted to highlight the relevance, reliable, authentic and authoritative of the data presented in this study. However, there are some limitations in the availability of the relevant data in this study, because not all the data are in the same manner of timeliness and accuracy. Nonetheless, the data presented in this study gives several illustrations on how the present condition of rice in Indonesia and the possibility of fitting in the *waqf* framework. Moreover, this

research is limited in the exploratory scope and no empirical study has been conducted to support the validity of the proposed framework as a better replacement to the current applied framework.

6. Proposed *Waqf* Framework for Food Security and Price Stabilization Policy

The food security strategy that is currently applied in Indonesia is dependent on the role of government in making it successful. The responsibility rests with the Ministry of Agriculture for upstream, while both the Ministry of Trade and Bulog for downstream. So far, the attempt for an independent strategy that is not related to the government has not yet been initiated due to several obstacles and difficulties. Hence, additional strategy is needed to strengthen the position of food security level of Indonesia whereby EIU (2017) stated that Indonesia is among the lowest in rank in the vulnerability index for natural disaster resilience, thus it is necessary to implement new strategy to increase its resilience. In response to this matter, Abdelhady (2012) proposed that *waqf* should be the solution for the issues of food security due to its strategic position inside the Islamic economic framework. Moreover, *waqf* has more freedom in many aspects compared to government institution including funding, management, and operation because it receives the assets directly from the people who surrendered it.

Furthermore, Puspitasari (2017) stated that *waqf* in Indonesia can utilize the potential of *waqf* land to be rice fields with its production being able to strengthen the position of rice stock in Indonesia using *muzar'ah* (partnership) contract and link *waqf* land with the local government. In this case, local government will help to distribute *waqf* land and provide capitals to farmers, in which the production will be shared based on pre-agreed ratio. The production will then be sold to the local cooperation institution (Koperasi Unit Desa/KUD) in order to avoid speculators for the purpose of stabilizing the price of rice.

The proposed framework in this paper attempted to broaden the concepts developed by Abdelhady (2012) and Puspitasari (2017) with the aim of extending *waqf* institution that is linked with the central government but independent in terms of funding, operations, and other supporting activities. In this case, the government is only involved in providing the existing legal framework and distribution link to assist the distribution of *waqf* and market rice in the effort of stabilizing the stock and price nationally. The main goal of the proposed framework was to enhance the current food security framework as well as to stabilize production, stock, and the price of rice in Indonesia. The complete framework is presented as follows (Figure 1):

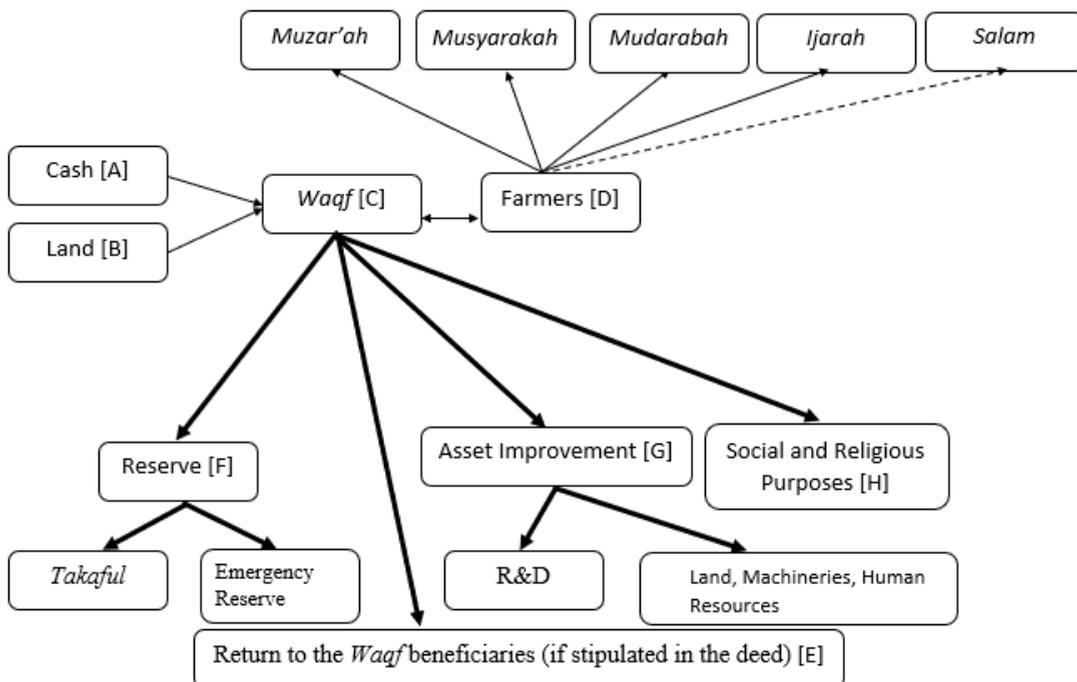


Figure 1: Proposed *Waqf* Framework for Food Security and Price Stabilization Policy

The modus operandi of the above framework is as follows:

1. The *waqf* receives assets in the form of cash and lands through the identification of the *waqf* deed and assets surrendered by the donor. *Waqf* then categorizes whether the land is suitable for rice plantation. The identification of *waqf* deed and assets make it easier to allocate and manage the assets in order to avoid any critical issues in the future.
2. Next, the *waqf* makes arrangements with the farmer as their partner after the assets are identified and categorized, followed by the distribution of lands and other necessary capitals based on the assessment of the farmers carried out by the *waqf*. In this case, Islamic contracts bind the *waqf* and farmers together to legalize the position of both parties.
3. The *waqf* and farmers must honour the arrangement based on the Islamic contracts employed and agreed by both parties at the early stage of the venture as soon as the venture between the *waqf* and farmers begins to operate and the profit (or loss) is declared. In the case of loss out of negligence case, *waqf* absorbs the loss using its reserve to restart the venture to continue the production of generating income. On the other hand, the responsible party must absorb the loss as part of their obligation written in the agreement based on the Islamic contract employed in the case of loss because of negligence.
4. The declared profit of the *waqf* will be divided into four main categories (marked by the bold arrows in figure 1) with the priority of the party stipulated clearly in the *waqf* deed as beneficiaries by the donor. However, the *waqf* has discretion in rationing the profit to the remaining three categories (reserve, asset improvement, social, and religious purposes) if the deed does not clearly specify the beneficiary.
5. The *waqf* creates reserve using profit received from its venture or excess funds received from the donor. The purpose of this reserve is to act as the safety net in the case of natural disaster or other force majeure situations that requires emergency capital injection to continue the venture or to restore it to its former condition. Moreover, *takaful* or Islamic insurance arrangement, is considered as part of the reserve, whereby both the farmers and the *waqf* contribute to an independent *takaful* fund for the purpose of safeguarding their interests against unfavourable future conditions.
6. The *waqf* also puts some of its profit for the purpose of asset improvement under its management to ensure efficiency and optimum production to ensure that the *waqf* can attain competitive advantage among its competitor in the rice market and increase its profitability.
7. The *waqf*, as an Islamic charitable institution, must also set aside some portion to carry out its socio-religious goals in order to improve the community wellbeing and help the government to provide public goods and facilities with the purpose of facilitating the needs of the community at large.

In this framework, the *waqf* is treated as both charitable and commercial institution altogether. More importantly, farmers may choose to sell their rice to the *waqf* or other parties based on the agreed price, market price, or government purchase price (HPP). The *waqf* through its commercial subdivision process plays an important role as both producer and distributor simultaneously by processing, packaging, and distributing the rice to the intended customer as well as increasing the value of rice as carried out by the intermediaries in the rice supply chain (Prastowo, Yanuarti, & Depari, 2008). Hence, the *waqf* can sell the rice at a reasonably higher price due to the increase in the value added of the rice considering that agriculture commodity value is measured on how the producer can make physical change and meet customer requirement and standard (Amanor-Badou in Bank Indonesia, 2015). However, it is also possible for the *waqf* to sell the rice below the market price and play its role as a stabilizer by pumping supply into the market for the purpose of rebalancing the price to ensure that the price of rice is affordable.

The marketing of rice produced by the *waqf* can be performed according to several possible scenarios. The first scenario is where the *waqf* sells its rice through its own network directly to the market or opening their own specialized branch with the sole purpose of selling their own produced rice. In this scenario, the entire profit will be earned by *waqf* and then distributed among its post as mentioned in the framework earlier.

In the second scenario, the *waqf* cooperates with Bulog to distribute and market the rice by utilizing its network nationwide. The operation of Bulog has branches in every districts called Dolog (Depot Logistic / Logistic Depot) that helps them to market and distribute the rice. In this case, the *waqf* sells its rice at the agreed margin, while Bulog also takes up some margin to gain profit. Moreover, shorter chain distribution will result in lower price of rice despite the fact that both *waqf* and Bulog are taking up margin to cover

operational expenses as well as to earn income for their reserve. However, it must be noted that margin taken by both the *waqf* and Bulog must be calculated properly and must not be excessive because the main goal of the entire scenario is to secure food supply and stabilize its price; hence, profit taking action must not jeopardize the entire system.

Apart from that, it is also possible for the *waqf* to use Bulog national network in order to carry out its socio-religious purposes by distributing rice to the areas that are in great need of rice due to major catastrophe or natural disaster. In this case, *waqf* is responsible in providing free rice to be distributed, while Bulog covers the distribution expenses to the affected area. Therefore, the teamwork between the *waqf* and Bulog may reduce the burden to the government as well as to the *waqf* considering that both institutions share the cost and the excess budget that can be utilized for other development purposes.

6.1 Components of *Waqf* Framework

There are three main components involved in the *waqf* framework. However, the main highlight of this framework refers to the relation between *waqf* and farmer considering that this *waqf* framework is intended to benefit both farmer as the grower of rice and consumer altogether. The role of *waqf* framework is as a connector and stabilizer on both supply and the price of rice.

1. *Waqf*: As mentioned before, the *waqf* acts as intermediary between farmer and customer. In its relationship with farmer, *waqf* provides capital either in the form of tangible or intangible capitals (knowledge, techniques) or both in order to efficiently increase the production of rice. Nevertheless, it should be noted that farmer in the context of this framework is more towards the group of farmers it will be easier for the *waqf* to supervise and control the farmer if they are gathered in group instead of individually. Moreover, the relationship between *waqf* and the group of farmer is mainly based on partnership which requires a high ethical value for the venture to proceed smoothly (Moh'd, Mohammed, & Saiti, 2017). In the event of emergency, *waqf* can use its reserve to aid farmers in continuing or restoring their position prior to the event and continue production. Inside reserve, the *waqf* also creates a *takaful* as additional protection for both the *waqf* and farmer. In its relations to the customer, *waqf* attempts to sell rice at an affordable price or even below the market price by intervening through the market operation for the purpose of stabilizing the price in the market.
2. Farmers: the farmer as the primary stakeholder in the production of rice, is clearly essential because they are responsible in securing the rice production and supply. Given the condition of farmers in Indonesia, the *waqf* plays a role as the capital provider and back up for the farmers to produce rice. In most cases, land rent is among the highest expenses that should be paid by farmers, which in this case, the *waqf* can lease it for a very low rate or even free depending on the arrangement between both parties. In addition, the *waqf* intends to empower farmer in the process of securing rice supply and strengthening the food security position of Indonesia. Therefore, farmer will be able to improve their socio-economic standing by increasing their welfare and condition with the assistance of the *waqf*.
3. Bulog: Bulog acts as a complimentary support in the framework because the *waqf* aims to utilize the distribution network of Bulog in marketing the rice at a significantly lower price. Hence, the *waqf* and Bulog are joined together to interfere with the supply of rice with the purpose of stabilizing the stock and price at the same time. More importantly, it is possible that Bulog will only be responsible for the distribution of rice in the future with the help of the *waqf*, while the provider of rice (production and purchase from the farmer) becomes the sole responsibility of the *waqf* considering that the source of funds utilized by the *waqf* is not part of the government budget. Therefore, this can ease up the government budget that has been used to purchase rice from the farmers of Bulog and can be allocated for other purposes.

6.2 Justification of the *Waqf* Framework

The government is primarily responsible for the current framework for food security in Indonesia. In adversity, the government tends to liberate rice to the market mechanism and only intervenes when the price is too high by injecting supply from BULOG or they import additional supply. Hence, this issue can be a potential threat in the future if it is not addressed properly. The main goal of the proposed framework is to strengthen the food security position of Indonesia by providing assistance outside the constraint of national budget through the increase of the total self-sufficient production of rice for the purpose of providing good quality and affordable rice. In detail, the significances of the framework are described as follows:

1. The *waqf* can provide assistance in the form of finance, knowledge, equipment, and other necessities for farmers which is believed to reduce the cost of production in the growing of rice, thus leading to the increase of income for farmer households. In other words, the *waqf* provides subsidy in the form of capital assistance to grow paddy due to the fact that most of the farmers in Indonesia have been working on leased land with weak capital position. At the same time, the *waqf* pushes farmers to improve the quality of the yield through the use of improved seeds, better technology, and advanced techniques provided by research and development division of the *waqf* whereby the yield of rice is expected to provide better nutrition for the people.
2. The attempt of the *waqf* is to create agriculture ventures with the purpose of increasing employment by activating its land potential and converting it into productive and income generating activities (Amuda, Embi, & Babatunde, 2014; Puspitasari, 2017; Shafiai, Moi, & Ahmad, 2015). More importantly, the *waqf* by means of creating employment through agriculture activities, can be the solution for poverty since it also provides income through the jobs created, thus further increasing the welfare of farmers and poor communities in Indonesia.
3. Moreover, the *waqf* has more freedom to intervene with the rice market compared to BULOG due to the regulation and budget provision. The *waqf* is allowed to assist and partly liberate the government burden in providing rice to the market to suppress uncontrollable price hike as long as the *waqf* reserve is sufficient to intervene. In the long run, the reserves of the *waqf* can also be counted as a national stock of rice, which is an important addition to the food security strategy.
4. The stock or reserve held by the *waqf* in its depository may help the government to reduce the act of speculation in the market by providing a positive signal to the market that the stock of rice is secure. This approach is necessary considering the fact that rice is a staple food in Indonesia; hence, any shortage in the supply of rice can trigger massive speculation that can push up the price (Prastowo, Yanuarti, & Depari, 2008). Furthermore, it is also important to send a positive signal to calm the market in order to keep the price stable enough so that both farmers and customer can benefit from the framework due to the fact that more than 60% of the stock is held by households (BPS, 2015).

The community may also be encouraged to contribute more through *waqf*, since the nature of *waqf* is to improve the welfare of community. Additionally, the contribution of the community to *waqf* will provide an abundant source of capital for *waqf* to utilize, while the profit of the activities is returned back to the community through the provision of public good, community, and religious empowerment as well as other development strategies with the aim of improving the welfare and wellbeing of the community.

6.3 Possible Obstacles of the Waqf Framework

In this case, it is important to note that there are some obstacles that may encumber the efficient performance of *waqf* institutions. Hassan and Shahid (2010) stated that *waqfs* have been experiencing mismanagement, which causes them to be run inefficiently and neglect the asset under its management. Furthermore, the agency problem between *waqf* managers and the board of trustees may reduce the capability of *waqf* to operate smoothly. Hence, check and balances are needed to safeguard the interest of community to ensure that the income generated from *waqf* asset investment is properly managed and disbursed.

In addition, another obstacle that must be addressed is the method used by *waqf* managers to invest *waqf* assets. Baskan (2002) in Hassan and Shahid (2010) stated that the *waqf* must be managed outside the government in order to ensure that the operation is performed in a professional way. Moreover, Abu Saad (2001) stated that professional management allows *waqfs* to create innovative development strategies through *ijtihad* in expanding more opportunities for *waqf* (Hassan & Shahid, 2010).

On another note, proper legal provision is another obstacle that must be addressed properly. In this case, it is compulsory for the *waqf* to have a legal provision in order to have a strong position in support of its activities as disputes arise. Legal provision provides justification for the *waqf* institution to act as both as a charity and as an enterprise at the same time. Currently, the provision for *waqf* in Indonesia is only available for BWI as a government institution that manages *waqf* assets in the country.

Finally, Prastowo, Yanuarti, and Depari (2008) stated that the supply chain of rice is too rigid and without a significant change. Hence, *waqfs* are required to develop innovative strategies that can help to penetrate the rigid supply chain of rice, by utilizing every potential channel possible in reducing the long supply chain with

the purpose of reducing the price of rice at the retail level. Moreover, *waqfs* must also face competition from financially strong rice traders in order to survive in the rice supply chain by offering a better quality product at a lower price.

7. Conclusion

Rice in Indonesia is an important commodity because it is widely known as the staple food of Indonesia. The government of Indonesia considers rice as an important commodity by exercising more control on the price with the purpose of influencing its supply by allowing BULOG to release its stock to the market or importing a certain amount to cater the demand and rebalance the price. Nevertheless, it should be noted that the problem lies in the production and distribution chain of rice itself. Therefore, inefficient production and a long supply chain of distribution of rice contributes to the increase in the price of rice.

The aim of the proposed *waqf* framework is to provide solutions for the problems in both production and distribution by fully maximizing the potential of *waqf* in Indonesia. In the case of production, *waqf* can provide assistance and sustenance to the farmers by creating partnership in cultivating the land to plant paddy. Hence, this allows farmers to have better standing and able to earn more by providing the necessary capital and knowledge to support and increase the production of rice as well as to cut down the cost of production. Apart from that, *waqf* is also involved in the processing stage where the rice is milled and packed according to its quality in order to ensure that the quality of rice is guaranteed, and its price is significantly cheaper.

In the distribution part, *waqfs* can work together with BULOG by utilizing its vast nationwide network to distribute rice to the remote location in Indonesia. In this case, it is expected that the price will be lower due to the shorter distribution chain particularly because there are less parties involved in the chain that tend to take up margin and push the price up. The creation of partnerships between *waqfs* and farmers will increase employment in the agriculture sector, thus farmers improve their socio-economic condition and welfare with proper management and sufficient knowledge.

It is also important for the government to send a positive signal to the market to inform that the stock of rice is abundant to prevent speculative practices, while the *waqf* framework functions to ensure the security of line of production and distribution. Apart from that, this will also reduce the gap between demand and supply mismatch, which creates volatility, especially in the harvest season and post-harvest that occurs biannually in Indonesia. Therefore, adequate stock, constant flow of rice, and efficient distribution chain will later be translated into a more stable and affordable price of rice in the market.

Several limitations need to be acknowledged with regard to the findings of the current research. The present study was limited by the archival method in analysing the relevant literatures on the selected topic because it was purely based on theoretical framework. Hence, there has not been any empirical studies that have confirmed whether the framework will fit into the Indonesia food security strategy, its practicality, and its impact measurement due to the challenges in data compilation and analysis. Therefore, further research on the price factor determination from within the *waqf* institution is required in order to improve the *waqf* framework in order to enhance the impact to the socio-economic welfare of Indonesians.

7.1 Recommendations

There are several recommendations that can be employed to further improve food security especially in regard to rice as well as to stabilize both stocks and price with the purpose of ensuring the affordability and availability of rice:

1. *Ijtihad* and solutions in *fiqh* (Islamic jurisprudence) issues related to *waqf* considering that *waqf* is currently in need for innovative solutions since the contemporary issues are more complex compared to the successful adoption of *waqf* in the past. The expansion of *waqf* as both a charitable and commercial institution needs clear foundations, objectives, and planning to ascertain that *waqf* can reach its true goal in improving the socio-economic condition of Indonesian people.
2. The treatment of a *waqf* institution as the integral part of community empowerment and trustee of the assets under its management will help *waqf* in conducting its activities, especially in regard to their efficiency and transparency. Moreover, the *waqf* managers and trustees of assets will perform better with the appropriate over-sight in order to supervise *waqf* activities and administration.
3. The political will of the government is required to include *waqf* as part of the national food security strategy. A possible explanation for this might be that the strategy is part of the long-term national plan

in securing food supply, attaining self-sufficient status, and stabilizing the price. In addition, the production is expected to equally match the demand and/or reach surplus status in the long run. Therefore, it will be very difficult for *waqf* to operate and achieve their objective without government assistance.

4. Legal provisions are needed to endorse the *waqf* institution to operate and strengthen its position in partnering with relevant stakeholders in the food security framework. A properly structured legal provision will provide a clear understanding and strong foundation in the conduct of their daily operations which will be beneficial in time of dispute or associated internal and external issues related to operation of the *waqf* institution.

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