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ZAKAH FOR WATER: AN ALTERNATIVE SOURCE OF FUNDING FOR SUSTAINABLE ACCESSIBILITY

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Abstract

This paper aims to discuss an alternative instrument for water infrastructure financing to support universal access to safe water by the use of zakah funds. Taking a case in Aceh, a province in the western peak of Indonesia that adopted sharia law, this study simulated some financing models based on three basic assumptions i.e. pessimistic scenario, moderate scenario, and optimistic scenario. The need for financing is laid on the operations expenditures of municipal water utilities (MWUs), as the prime providers of water service, and the source of funding is the realization of zakah collection, both of which include the total number of municipalities and cities in the province. The study resulted, even in the pessimistic scenario, that the use of zakah funds is able to increase the number of population served twice. This article recommends the integration of implementation of the existing zakah programs for water infrastructure into a single project with a focus on a particular area to have a fundamental impact on the community.

Keywords: Zakah Funds, Water Management, Universal Access to Safe Water, Infrastructure Financing

INTRODUCTION

The Government of the Republic of Indonesia targeted 100 percent access to drinking water by 2019. While the latest achievement was that by 2015 there were still more than 70 million people or one-third of the population that had no access to safe water [1]. The data also indicated an imbalance in the fulfillment of access to safe water among regions. The lowest percentage was 41,1 percent in Bengkulu Province and the highest which almost reached 100 percent was 93,4 percent in Jakarta.

Government Regulation No.122/2015 on Drinking Water Supply Systems states that responsibility for supplying drinking water lies on the central and/or regional governments. So far, the provision of clean water is mostly completed by the local government through the municipal water utilities (MWUs). By 2015, however, the coverage of MWUs services was only 41 percent [2]. The limitation of raw water resources, water treatment installation capacity, distribution network, and funding sources became the causes for the low coverage of MWUs services as well as other alternative water sources. The government's target to meet 100 percent access to drinking water by 2019 costs Rp 275 trillion [3], while the ability to fill the financing is only about 70 percent, consisting of 30 percent of the state budget and 40 percent of the local budget. The rest comes from the private sector, state/local-owned enterprises, and other financing sources.

The Government planned to use zakah and waqf funds to build clean water infrastructure. The plan was realized by the National Development Planning Board in a memorandum of understanding with the Indonesian Ulema Council, the National Board of Amil Zakah, and the Indonesian Waqf Board on the Synergy of utilization of waqf, zakah, alms, and other religious social funds with the government program in provision of drinking water and sanitation for the community [4]-[6].

Some works of literature have discussed the utilization of zakah and waqf funds for socio-economic development [7]-[11] and infrastructure [12]-[14]. In cases of Nigeria, Pakistan, and Egypt [7]-[9], in the long term zakah has a role in development through poverty alleviation and community empowerment. More broadly, the use of zakah, waqf, and sadaqah funds can be an alternative to public financing in order to reduce external debt burden [11]. Despite the debate [9], [12]-[13], the use of zakah to finance infrastructure development has been undertaken in several countries. Kuwait and Malaysia, for example, have implemented public health and education financing for the poor using zakah funds [13]. The use of zakah and waqf funds if managed properly can assist the government in achieving the targets of the SDGs [14].

The use of zakah funds in socio-economic development in the modern era is not only to deceive the economy of local communities through microfinancing but also to provide the infrastructure to support the economic development [7-14]. The source of funds in financing development activities that could replace government expenditure can be taken from the management of zakah funds [14]. Waqf funds, in particular, can be used for the provision of economic infrastructure [11]. The management of waqf funds if generating profit can contribute to develop more infrastructure. The use of waqf funds is also expected to reduce government debt in the provision of infrastructure facilities.

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Accelerating productivity and economic growth, increasing the purchasing power of the poor, and financing the provision of education, health, and social welfare are the goals of zakah in socio-economic aspects that will improve the productivity of the poor [7-8, 12]. To fulfill the redistributive functions of wealth [9], several things must be achieved, including: sufficient funds must be collected to meet the needs; the distribution of funds must reach the appropriate beneficiaries; and the impact of funds received by the beneficiaries must be truly effective in improving their standard of living.

This paper aims to discuss the use of zakah funds for financing safe water infrastructure in Indonesia. The term zakah here, despite the different definitions, includes infaq, sadaqah, and waqf. A case study in Aceh was conducted as a practical approach to estimate financing needs for expanding the access to safe water. Simulations were made to model the planning based on three assumptions i.e. pessimistic scenario, moderate scenario, and optimistic scenario. In the end, this paper is not intended as a feasibility study of water supply projects.

METHODS

The paper discusses a case study in Aceh to meet the simulation of zakat fund utilization modeling in financing safe water infrastructure. Aceh was chosen as a representation of the regions that impose Islamic law in Indonesia. In terms of fulfilling access to clean water by 2015, Aceh province ranks 28 out of 34 provinces with a percentage of 61,2 percent [1].

Secondary data sourced from the Central Bureau of Statistics was employed to obtain data on the realization of zakah collection and the data from performance reports of Supporting Board for the Provision of Drinking Water Supply Systems was compiled to obtain MWUs operations and financial data. The operations and financial indicators of MWU used in this study are net income, total expense, tariff, production cost per meter cubic, and total of population served. Modeling simulations are performed under three basic assumptions: pessimistic scenario, moderate scenario, and optimistic scenario.

FINDINGS AND ARGUMENT

The data of zakah collection on 23 baitul mal of both municipalities and cities in Aceh from 2009 to 2016 showed an average growth of 22,37 percent. Zakah receipts jumped from Rp 47,2 billion in 2009 to Rp 186,7 billion in 2016. The assumption used to calculate forecasting zakah revenues on the optimistic scenario uses this growth average. By modifying the average growth of zakah revenues between 2009 and 2016, the assumption of growth is 19 percent for moderate scenario and 16 percent for pessimistic scenario. These assumptions are realistic considering the people's awareness to pay zakah through amil zakah institution is getting higher. Forecasting of zakah revenues in 2028 ranged from Rp 1,1 trillion on the assumption of pessimistic scenario, to Rp 1,5 trillion on moderate scenario and Rp 2 trillion on optimistic scenario, as seen in Figure 1.

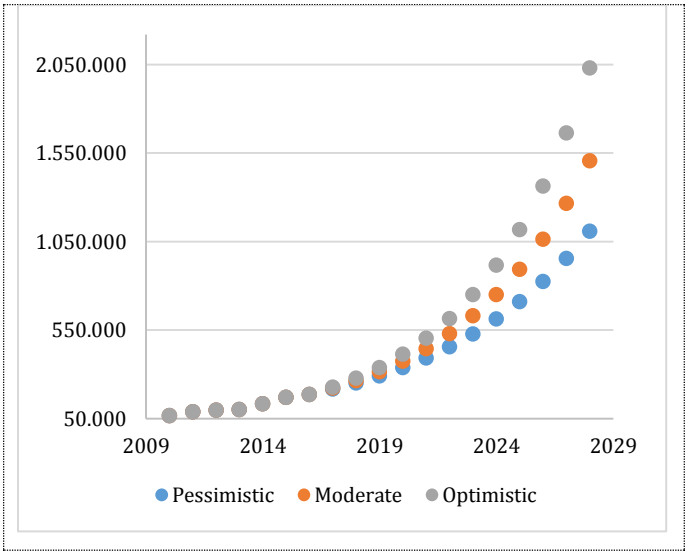

Figure 1. Zakah Receipts Forecasting Under Three Scenarios

Observing the MWUs operations aspects in Aceh, this study validates some assumptions based on Bireun MWU performance. Bireun MWU is chosen because it has the best performance and of its data availability. The projection, as seen in Figure 2 until Figure 4, shows that under three scenarios; with the growth rate of 9 percent for the pessimistic scenario, 13 percent for the moderate scenario, and 15 percent for the optimistic

scenario; the average of MWUs net income amounts between Rp 34,6 billion to Rp 69,4 billion for optimistic scenario. Whilst it assumes the growth for the average of MWUs total expense i.e. 14 percent for the pessimistic scenario, 12 percent for the moderate scenario, and 10 percent for the optimistic scenario, the results are the declining of the average of MWUs total expense from Rp 80 billion for the pessimistic scenario into Rp 50 billion for the optimistic scenario. The declining cost is made under the assumption of improving the non-revenue water (NRW). NRW is one component in the formulation of MWUs costs, so when NRW rate is getting better, then so with the cost.

The next aspects of operations are tariff and production cost. Production cost means the cost per meter cubic volume of production still including NRW rate. Both are compared to find out whether the tariff has been able to meet production costs or not. If the tariff fails to cover production costs, then MWU will incur losses. MWU tariff policy is made by the mayor which is usually political. The mayor argued that low tariffs will enable more people to get access to safe water. However, this policy does not make the MWU sustain because of the financial losses experienced.

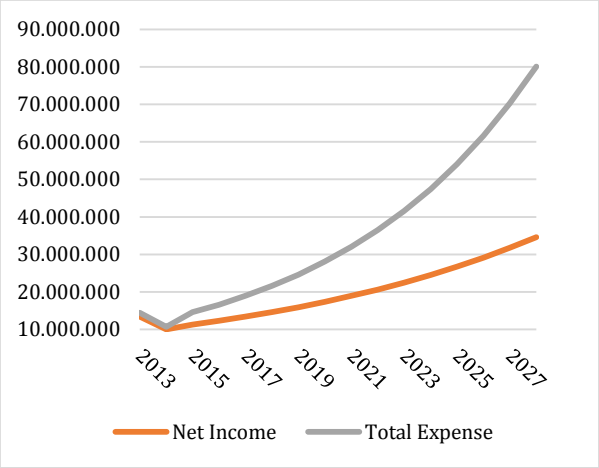

Figure 2. MWUs' Net Income and Total Expense Under Pessimistic Scenario

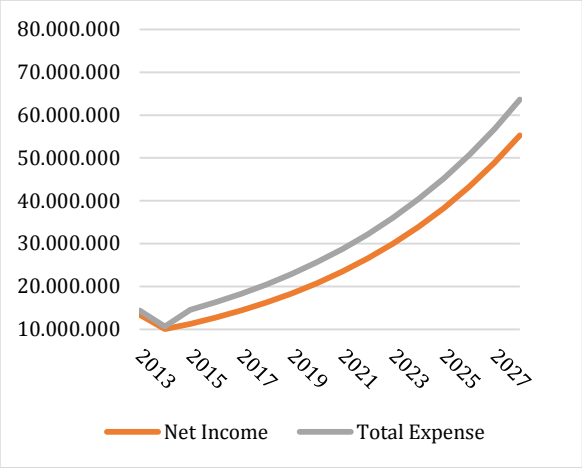

Figure 3. MWUs' Net Income and Total Expense Under Moderate Scenario

The tariff simulation is based on the gradual increase made by the local government. All assumptions begin with no increase in the first three years and different increases for each scenario in 2028. The tariff average raise from Rp 8,751 for the pessimistic scenario up to Rp 9,413 for the optimistic scenario. The average production cost with the assumption of 6 percent for the pessimistic scenario growth, 5 percent for the moderate scenario, and 4 percent for the optimistic scenario in 2028 is among Rp 9,990 for the pessimistic scenario and Rp 7,799 for the optimistic scenario. From the simulation as shown in Figure 5 until Figure 7, it can be seen that in the moderate scenario the tariff can cover production cost in 2027, while in the optimistic scenario it will be in the 2024.

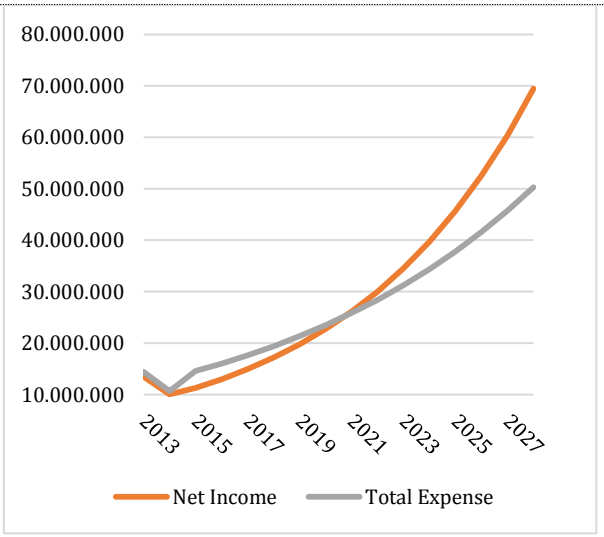

Figure 4. MWUs' Net Income and Total Expense Under Optimistic Scenario

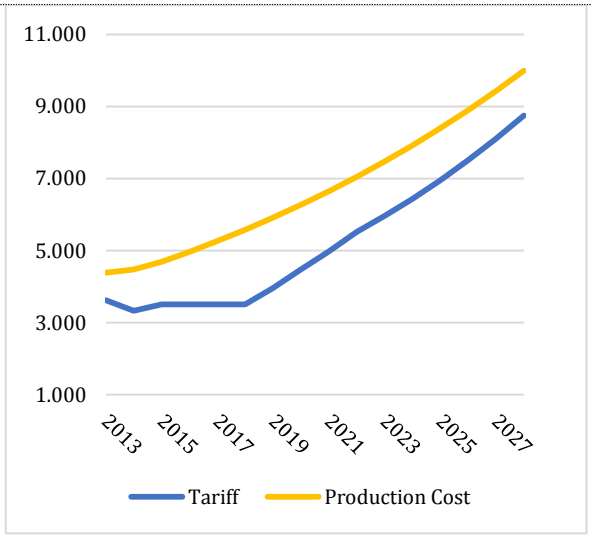

Figure 5. MWUs' Tariff and Production Cost Under Pessimistic Scenario

The expected result of this article is the increased of population served. The average of population served in Aceh is only about 19 percent in 2014 and 20 percent in 2015. Under the three scenarios as seen in Figure 8, the population served in 2028 is expected to be 41 percent for the pessimistic scenario, 52 percent for the moderate scenario, and 65 percent for the optimistic scenario.

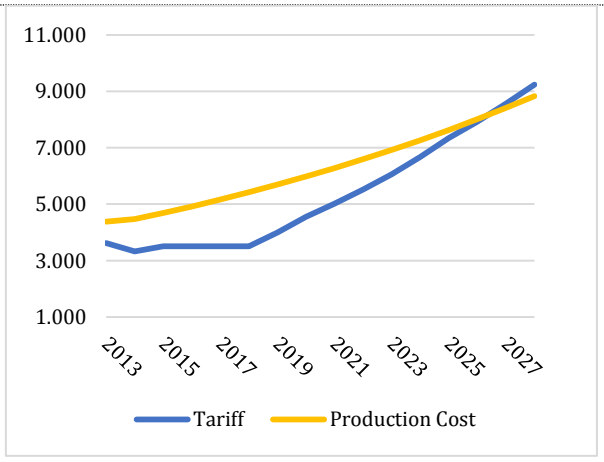

Figure 6. MWUs' Tariff and Production Cost Under Moderate Scenario

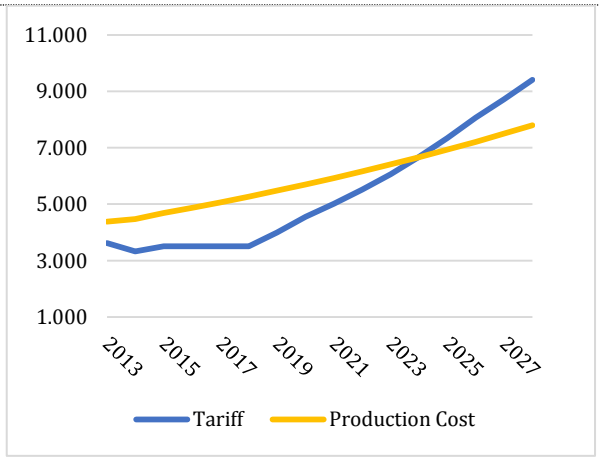

Figure 7. MWUs' Tariff and Production Cost Under Optimistic Scenario

What obscures the achievement in this aspect is the geographical condition and demographic diffuse that are difficult to reach by pipelines. The limited pipeline infrastructure, that can be seen from the average of population served which is only 20 percent in 2015, makes expanding the pipelines requires a large investment fund.

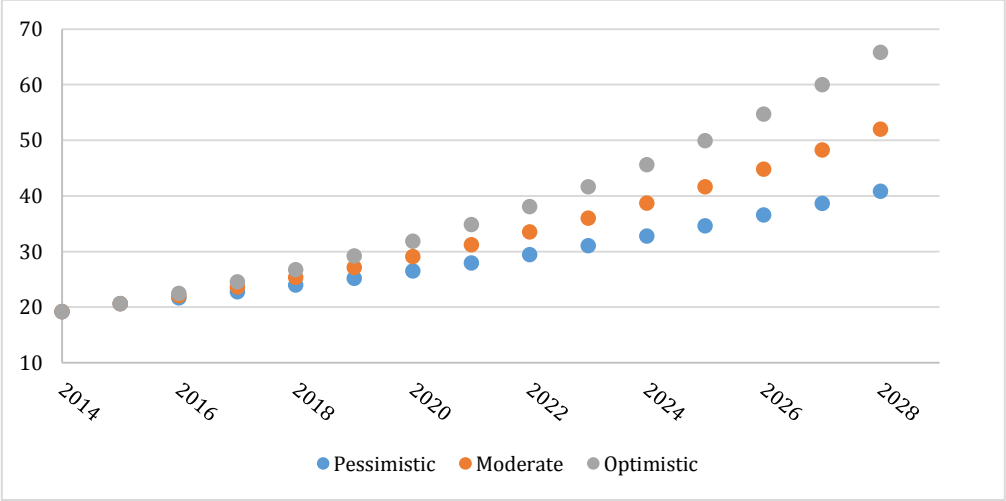

Figure 8. Percentage of Population Served Under Three Scenarios

The prediction of zakah receipts by Rp 1,5 trillion in 2028 under moderate scenario should be able to finance the investment of MWU pipelines infrastructure, which when viewed from the number of operations cost in an MWU is only Rp 63,6 billion. Measurement of the average of total expense is useful to know the amount of cost needed to serve the citizens which becomes an illustration of the required investment needs.

CONCLUSION

The simulation results show that zakah fund is able to finance MWU operations. The MWU coverage area also increased 2,5 times to 52 percent under moderate conditions. The huge potential of zakah is an alternative source to finance the development of water infrastructure and is useful to help government to expand the access to safe water [12-14]. This paper proposes a funding framework involving local board of amil zakah, local government, MWU, and municipal ulema council in an ongoing partnership. The municipal ulema council will establish a sharia council placed in the scheme of cooperation that will oversee the suitability of the use of zakah funds by sharia law. The allocation of zakah funds for water development is also directed to be received by poor Moslems as a priority before covering the whole needs.

In addition to sharia aspects, three technical matters need to be a concern for the continuous cooperation. The first is related to MWU operations which has high water loss rate and the second is the application of fair price. The last, an integration of zakah fund disbursement into a single project with a focus on a particular region will have an impact on improving the welfare of the community.

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