



Insight into the Utilization of the Blue Sources of Funds in Fisheries Investment as a Key Sector in Blue Economy in Zanzibar

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The study examined the insight into utilization of the blue sources of funds for fishery investment in Zanzibar. The study intended to help the blue economy plans in showing the importance of financing fishing sector in order to empower those who are engaged. Using questionnaire and interview collected the primary data. The study applied both (quantitative and qualitative) analyses. Quantitative method was in the form of descriptive statistics using frequency distribution while the qualitative method was in the form of content analysis. The findings of the study showed that funds were utilized in purchasing boats, equipment's and machines. The results showed that self-finance and retained earnings were used mostly to purchase machines. However government grants were used to purchase boats while loans were used to purchase equipment's. This implies that most of the fisher folks are very poor to finance themselves to purchase boats explaining why they use government grants to purchase boats. Therefore, the owners of the boats and fisher folks should ensure the effective utilization of funds obtained from different sources for fisheries activities in order to generate higher return on fisheries investments.

Keywords: Fisheries investment; sources of funds; self-financing; government grants; retained earnings; loans; blue economy.

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1. INTRODUCTION

Fishery industry is a global industry that cuts across a significant part of the economy of many countries globally. There are thousands of fisheries investments worldwide, ranging from small, artisanal fisheries that function at the household level and feed local communities to large-scale industrial fleets that catch large volumes of fish to sell in international markets [1].

Fisheries investment activities include the capture of wild fish as well as the aquaculture production. Fisheries involve aspects such as fishing in shallow waters and deep-sea fishing with simple gears like nets, fishing rods and other complex gears [2]. This study will focus on catching techniques which include hand gathering, spearing, netting, angling and trapping. Therefore in order for the fish to be caught, the fisherman should have some equipment like net, traps and other fishing gears.

These fisheries investment generate important hard currency and much needed government revenue. FAO [3] reported that, global production of fish has continued to grow and reached 172.6 million tons in 2017, with an increase of 4.1% compared with 2016 (171 million tons). Also there has been an increase of 14% of global capture fisheries production from 1990 to 2018. This increase in the global capture fisheries production has been attributed to having most countries invest in their fishery industry which has led to high returns on fisheries investment [4].

For any fishery industry of any country around the globe to thrive and expand there is need for fishery investment in the country¹. The fisheries industry has been rapidly growing recently around the globe. Most of the countries have allocated funds to the fisheries investment which has led to expand and increase in the global capture fisheries production. In most cases the country use both internal and external source of funds² to invest in the fishery industry³.

Investment in the fisheries sector requires high capital which is not readily available to most

fisher folk and aquaculture entrepreneurs. That is why most of the countries such as Java and Madura depend on external sources of funds such as loan to purchase modern boats and some equipment for fishing this is because the modern boats is very expensive to purchase, so they will not be able to finance themselves and purchase the boat. Most of the credits available are on short term basis with high interest rates. So, fisheries investors decide to finance the business internally where by the capital is generated by the business or by themselves⁴.

The fishery industry in Zanzibar cuts across the significant part of the economy of the country. Fisheries in Zanzibar play an important role in the economy as they provide a source of income about 20% of the population [5]. Many of the inhabitants of Zanzibar have engaged in fishing activities for generations. They use traditional fishing boats and gear such as canoes, canoes with outriggers, sailing boats, with few planked outboard-engine boats. The fish stocks around Zanzibar include small pelagic (sardines and anchovies), coral reef fish (grouper, snapper, parrotfish, and emperors), lobsters, octopus, squid, and large pelagic fishes (tuna, billfish, sharks, marlins).

There are two types of fisheries in Zanzibar; commercial fisheries and artisanal fisheries. Under the commercial fisheries we have the semi-industrial fisheries and the industrial fisheries. When it comes to the industrial fishing in Zanzibar, the fishermen mostly foreigner have to get their fishing licences in Fumba at the office of Tanzania Deep Sea Authority for them to go fishing and they are allowed to stay for long time and to go for long distance while fishing. For the semi-industrial fishers, they can only stay for one, two-days or for one week fishing and the ministry of fisheries in Zanzibar teaches them how to store and preserve their fish for long to avoid them getting spoilt. Zanzibar fisheries are dominated by artisanal fisheries that take place at the shores of the sea this is because artisanal fisheries are traditional fisheries involving fishing households, using relatively small amount of capital and relatively small fishing vessels, mainly for local consumption. This is because Zanzibar people are poor and availability of loan is very difficult [6].

¹ Fisheries investment is an allocation of funds on fisheries activities which include purchasing of fishing vessel such as boat to catch fish as well as fishing tackle.

² External sources of funds are the funds that come from other sources and not from the business. There are several external sources of funds a business can use, including loans, government grants

³ Source of fund refer to where a business acquires funds from to finance its business activities.

⁴ An internal source of funds is the capital generated by the business or the finances that come from the business itself. Internal sources of funds include retained earnings and self-financing.

The fishing investments in Zanzibar are still done on small scale with poor fishing gears. Hence, this leads to a situation where the market demand is not fully satisfied. Despite the fact that the fishery industry of Zanzibar is not well developed it has several investors who invest in it to ensure its expansion such as Almaida and Salmin companies, Zanzibar fisheries company (ZAFICO) and others [6]. ZAFICO has two boats that have been given out by the government without any expectation in return. The ministry of fishing in Zanzibar has some investments which include the fish market in Malindi, Nungwi, Mazizini, Mkokotoni [6]. According to Mohammed [6] on the census which is conducted in Zanzibar in 2020, investment in fishing vessels in Zanzibar are 7919 which are used for fishing in the industry and tons of fish catches annually is 38000 metric tons and monthly is 3000 metric tons but in June 2020 it was below metric tons hence leading to decrease in return to fisheries investment. Currently, there are some banks that are willing to give loans to the fishery investors such as Cooperatives Rural and Development Bank (CRDB), National Microfinance Bank (NMB), Kenya Commercial Bank (KCB) and equity bank have given a condition to the investors where they will be forced to formulate Non-Governmental Organization (NGO's) in which they will utilize funds efficiently and effectively [6]. Moreover, Zanzibar fisheries especially the private companies use their own funds. They purchase all equipment using their own finances without external help.

2. LITERATURE REVIEW

This part discussed the theories and empirical review that support the study of utilization of source of funds for fisheries investment. Asymmetric information and agency theories are used in this study. Empirical studies used are as follows;

Stanford et al. [7], reported on improving livelihoods in fishing communities of West Sumatra. Empowerment programs by the Department for Fisheries between 2005 and 2009 emphasized improving physical capital through providing fishing gear, motorization and processing equipment. The results indicated that aspects of leadership, trust, advocacy, administration, accountability and ongoing institutional support are key elements of empowering coastal communities towards livelihood improvement.

Abiodun [8], studied on impact of loan on Agriculture Artisan and Fisheries Business. This study identified various sources of finance available to agricultural artisans and fisheries business including bank, non-bank financial institution, families and friends, personal savings, and retained profits. The result of the study further identified some challenges faced by artisans and fisheries sectors in accessing loan facilities among which are interest rate, inadequate experience, high collateral, lack of information flow among others and indicated that poor access to loan affected artisan and fisheries operations in Nigeria.

Fujita et al. [9], studied on the rights-based fisheries management. Fisheries management regimes take many forms, but most fail to designate shares of the catch. This failure creates strong incentives for individuals to maximize their share without regard to long-term sustainability, because the benefits of conservation actions do not accrue to individuals. The competition to maximize catch usually entails excessive capital investments in fishing vessels, gear and intense fishing pressure, resulting in overfishing, high by catch rates, and the use of large, efficient types of gear that can harm habitat. The result of this study indicated that fisheries could accept investments from a variety of sources and use a portion of the increased financial performance to repay recoverable grants and loans and create financing mechanisms that are sustainable.

Quagraine et al. [10], examined the determinants of catch sales of artisanal fishers through wealthy middle women in fishing communities of Ghana, often known as fish mothers or "fish mongers." Self-financing was found to negatively affect the fishers' sale of fish catch through fish mothers. The results is that fishers need some economic leverage such as access to formal capital and financial resources to incentivize them to exercise control over their marketing activities so that they can receive a higher profit from their fishing operations.

Foley et al., [11], reported on the rise and fall of the Irish orange roughy fishery. An Irish commercial fishery for orange roughy began in the Northeast Atlantic in 2001 with the assistance of government grants. The results suggested that in the absence of subsidies, deep water trawling would not have been viable.

Acquah et al., [12], This study investigated factors influencing loan repayment performance

of fishermen. The results indicated that 70.1% of the fishermen interviewed had delayed repayment and this was partly attributed to low catch and high debts from fishmongers. It was recommended that allocation of loans to fisheries sector be increased to stimulate fishing activities and improve repayment performance of fishermen.

Tidd et al. [13], evaluated the factors affecting investment decisions in the North Sea English beam trawl fleet. A profitable business fishery attracts additional effort (vessels enter), eventually leading to overcapacity and less profit. The results of the predicted marginal effects of each factor are presented and the impact of each is discussed in the context of policies developed to align fleet capacity with fishing opportunities.

The studies presented failed to identify the different source of funds, how they are utilized on fishery sectors and which sources are used to buy equipment, boats and machines to ensure effectiveness on fisheries investment. Therefore this study examines how sources of funds are utilized in purchasing equipment, boats and machines used for fisheries business in Zanzibar.

3. METHODOLOGY

This study was carried out in Zanzibar (Unguja and Pemba). The study population was workers in the fisheries industry in Zanzibar which is 50,218 and comprise of fisher folks 42,299 and owners of fishing vessels 7,919. The sample size of the study was 100 respondents who were selected as the sample for the study which include fisher folks (84) and owners of fishing vessels (16). In this study, the researcher used simple random sampling and purposive sampling techniques due to their accuracy and flexibility [14]. The researcher used the simple random sampling procedure to sample 84 fisher folks through questionnaire. Purposive sampling procedure was used to sample 16 owners of fishing vessels through interview.

The study used primary data. The researcher used questionnaire to get information from fishermen on insight into the utilization source of funds for fisheries investment. Descriptive statistics used to analyze quantitative data in the form frequency distribution. The researcher also used interview to get qualitative information from owners of fishing vessels on insight into the utilization of source of funds for fisheries investment. The data was analyzed by using emerging themes using content analysis.

4. FINDING AND DISCUSSION

Based on method used, the researcher found that utilization of funds from different sources for fisheries investment is planned. This is shown by large percent which is 81%, while 19 % of respondent does not plan (Table 1). If funds are planned to be utilized, higher return investment will be achieved.

Table 1. Planning for utilization of funds

		Frequency	Percent
Valid	Yes	68	81.0
	No	16	19.0
	Total	84	100.0

Source: Survey data, (2021)

Moreover on utilization of funds in fisheries investment based on the sources of funds, researcher found that 100% of the respondents are utilizing funds from different sources for fisheries investment (Table 2). This shows that the respondents had different perceived views on the utilization of the fisheries funds in their investment, according to the conditions of accessing the funds from the donors.

Table 2. Utilization of funds based on sources of funds

		Frequency	Percent
Valid	Yes	84	100.0
	Total	84	100.0

Source: Survey data, (2021)

The Table 3 indicates that the utilization of funds from specific source of funds such as Government grants, loans, retained earnings, self –financing on how they utilize these sources of funds on purchasing boats, machine and equipment.

On the side of government grants, result indicated that most of the respondent utilized government grants to purchase boats and very few utilized to purchase machines. This study contradicted Kabir et al. [15] because most of the fisher folks are poor and the boats are very expensive to purchase, so they cannot purchase boat using their own funds and very rare to purchase machines and equipment using government grants because the cost of purchasing these is very low compared to boats whereby they can afford to purchase using their own funds. Most of the grants are not provided in terms of money for example the government

provide grants to ZAFICO by giving them two boats but not giving them the money to purchase it.

However, on the case of loans, results showed that majority of the respondents utilize loan as a source of funds in purchasing equipment and very few utilized to purchase boats. This study agrees with Vipinkumar et al. [16] because the more loans taken the more charged are given, so if fisher folks decide to take loans to purchase a boat it can be very difficult for them to pay back due to higher interest rate as well as the risk of losing their properties thus fisher folks decide to utilize loan to purchase equipment.

On the side of retained earnings, the results indicated that most of the respondents utilized retained earnings as a source of funds in purchasing machines and very few utilized to purchase boats. This study agrees with Jaabi et al. [17] because money when ploughed back can be used to purchase machines which have capacity to go far and catch large tons of fish hence generate higher return and also retained earnings mostly are not huge amount so it can be difficult to purchase boats as well as not sufficient to purchase a boat.

Moreover, on the side of self-financing, the result indicated that most of the respondents utilized self-finance as a source of funds in purchasing of machines and very few purchase equipment. This study agrees with Haque et al. [18] because the cost of purchasing machines is lower so they can afford to purchase it using their own funds and when using self-financing respondents replied is free from risk, restriction and harassment as well as they can purchase according to their requirements.

In interview through the emerging themes the study found that;

“The owner of fishing vessels replied that utilizing government grants to purchase a

boat because to purchase a boat is very expensive compared to purchase machines so they cannot purchase a boat using their own funds that’s why they chose this source of funds. However on the side of loans respondents replied that utilizing loans as sources of funds in purchasing of equipment and very few utilize to purchase boats because if owners decide to take loans to purchase boats it can be very difficult for them to pay back due to higher interest rate. This is why banks ceased loans since 2002 because fisher folks were unable to pay back due to higher interest rate as well as the risk of losing their properties thus those owners decided to utilize loan to purchase equipment.

In addition, on the side of retained earnings, the results indicated that most of the respondents utilized retained earnings as a source of funds in purchasing machines and very few utilized to purchase boats because retained earnings mostly are not huge amount and boats require a large amount of funds so it can be difficult as well as not sufficient to purchase boats. Furthermore, on the side of self-financing, the results indicated that most of the respondents utilize self-financings as a source of funds in purchasing machines and very few purchase equipment because the cost of purchasing machines is lower so they can afford to purchase it using their own funds and is free from risk, restriction and harassment as well as they can purchase according to their requirements without any interest charged.

The profit that are generated from these sources, some are distributed to the owners (25%), 50% are distributed to the workers and 25% are saved for future utilization. So the owners will be able to purchase according to the amount received, requirement they want and funds they have.

Table 3. Utilization of funds from specific source of funds

	Government grants	Loans	Retained earnings	Self - financing
Purchases of boats	46 (54.8%)	21 (25.0%)	19 (22.6%)	25 (29.8%)
Purchases of machines	17 (20.2%)	25 (29.8%)	36 (42.9%)	45 (53.6%)
Purchases of equipment	21 (25.0%)	38 (45.2%)	29 (34.5%)	14 (16.7%)
Total	84 (100.0%)	84 (100.0%)	84 (100.0%)	84 (100.0%)

Owners of fishing vessels have employed about 65% of fisher folks to conduct fishing activities with the informal contract. These employers always focus on fishery business and not actual fishing activities. There is a need for the financial incentives to support fisher folks for a long-term commitment to implementation and oversight by government and dedicated partners. According to FAO [19], advocates working at the nexus of policy, livelihoods, and finance face the ongoing challenge of lack of access to affordable capital for fisheries sector. They also face the risk of working with unstable and unpredictable governments, whether in developed or emerging and frontier markets, making policy reform tied to financing vehicles more difficult to negotiate and sustain the fisheries sector in many countries”.

4. CONCLUSION

Fishery activities depend on several sources of funds that can be used to invest in Zanzibar fisheries sector. During this blue economy emphasized era in Zanzibar, it is important for the government to provide grants for fisheries sector in order to facilitate fishing activities by utilizing funds on purchasing modern boats which can go far for fishing in order to generate high returns since the self-financed and retained earnings are not enough to purchase boats for investment in fishery sector because boats are very expensive to purchase it but they can use self-financing and retained earnings to purchase machines only because they have lower costs. Also it's important for government to sit with commercial banks and want them to release loans with small amount of interest without putting their assets as collateral in order to encourage them to invest in fishery sector by purchasing modern equipment without any hesitation.

The Revolutionary Government of Zanzibar should ensure the effective utilization of funds obtained from different sources for fisheries investment that will enable fisher folks to invest in fishery sector especially during this blue economy era by providing grants to the fishery industry by giving them boats which can have huge capacity to go far and catch large tons of fish so as to generate high returns as well as sitting with commercial banks to influence hem on providing loans with reasonable rate and provide knowledge and training to fisher folks on

how to utilize effectively their own funds such as retained earnings and self- financings by purchasing machines which have higher capacity so as to enable them to go far and catch large tons of fish in order to generate higher returns.

Commercial banks should provide loans with small amount of interest in order to encourage the fishers to be able to take loans and purchase equipment by using these loans as well being able to pay back the money before or at maturity date.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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