Influence of Selected Resources of Blue Economy towards the Benefit of Fishers and Seaweed Growers of Paje Village in South District of Unguja

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Abstract
This study was conducted in order to assess influence of selected resources of Blue Economy towards the benefit of fishers and seaweed growers of Paje village in South District of Unguja. Specifically, the study was set in order to meet three objectives, namely; to examine the contribution of selected resources of Blue Economy towards the welfare   of Fishers and Seaweed Growers at Paje village; to examine the satisfaction of Fishers and Seaweed Growers of Paje village in utilizing selected resources of Blue Economy to better their lives; to explore the challenges faced by Fishers and Seaweed Growers in Paje Village. Sample size of this study was 135 respondents. In this study, simple random sampling was applied to select respondents from Paje village and purposive design was employed to target the technical staff from the Ministry of Blue Economy and Fisheries. Data were gathered using questionnaires for seaweed farmers and fishers of Paje Village and by using face to face interviews for government officials from the MBEF. Data were analyzed using both qualitative and quantitative methods. The study revealed that, the benefits that seaweed farmers and fishers are getting through seaweed farming and fishing are earnings for meeting their daily needs by improving standard of living for having self-employment, increased household income and Engagement in different small businesses. In general, the benefits accrued contribute to poverty reduction in Zanzibar. Also due to the results, the study clearly indicated that, most fishers and seaweed farmers are not satisfied with the income they get from their daily marine activities, hence the time and effort used do not compensate with the activities they are doing and go beyond with their high expectations where by (47.6%) respondents said never compensated, (13%) said rarely, (8.4%) said very often, (10%) of respondents said always and (23.8%) were neutral. Also, most fishers and seaweed farmers were not satisfied with the income they earn and their activities did not increase their household assets and gain less benefit. This is because of low price of the seaweed products. Finally, the study recommends improvement of both key fishing and seaweed infrastructure including ice-

making plants and cold-storage facilities to store excess catch, seeds and feeds for better marketing opportunities. This will be achieved using efficient modern technology and the use of advanced tools and equipment to facilitate quality production.

Keywords: Blue Economy, Benefit of Fishers and Seaweed Growers, Blue Economy Resources

Introduction

According to Word Bank Group (2016), Blue Economy is about innovation and growth in the coastal, marine and maritime sectors could deliver food, energy, transport, among other products and services and serve as a foundation for sustainable development. The European Union (2018) defines the Blue Economy as "all economic activities related to oceans, seas and coasts. It covers a wide range of interlinked established and emerging sectors" (European Union, 2018). Its importance has been broadly measured and acknowledged in economic, social and environmental terms (UNECA, 2020). This perspective makes the World more dependent on the Blue Economy in bringing about development through different economic, social and environmental sectors.

The Blue Economy in the African context covers both aquatic and marine spaces, including oceans, seas, coasts, lakes, rivers and underground water. It encompasses a range of productive sectors, including fisheries, aquaculture, tourism, transport, shipbuilding, energy, bio prospecting and underwater mining and related activities (UN Economic Commission for Africa 2016). This position gives African states the room to maximize the use of their internal water bodies and maritime to benefit their citizens. In Tanzania, all water bodies including lakes, rivers and underground water, in addition to seas and the coast are unique resources, yet neglected and often forgotten (Lyimo, 2021). Thus, Blue Economy plays a major role in Tanzania's transformation by contributing the Gross Domestic Product, contribution to employment opportunities, investment and tourism.

In Zanzibar's context, BE covers the sustainable use of the sea, coasts and other water bodies as well as related resources, including underground and undersea waters, for socio-economic development while preserving the environment (RGoZ, 2020). In the implementation of this policy, five priority areas are (i) fisheries and aquaculture; (ii) maritime trade and infrastructure; (iii) energy; (iv) tourism and (v) marine and maritime governance (RGoZ, 2020). The Revolutionary Government of Zanzibar recognizes the role of the Blue Economy in promoting Socio-economic development through better stewardship of the sea and related resources (RGoZ, 2020). This economic growth and employment opportunity leads to development of the community.

All the sectors of Blue Economy are important to the socio-economic development of Zanzibar and Tanzania in general. However, there are certain sectors which are vital from the angle of local entrepreneurship and employment generation. The three sectors that possess huge potential for value addition and job creation are fisheries, seaweed production and coastal tourism (Mfamau, 2019). However, this study considered two potential resources of Blue Economy which were fisheries and seaweed growers.

Statement of the Problem

As an Island state, Zanzibar's socio-economic development is heavily reliant on the sea, coast and marine resources. These blue activities account for about 29% of Zanzibar's gross

domestic product (RGoZ, 2020). According to Revolution Government of Zanzibar (2020), the fisheries sector and seaweed farming have become a dominant activity among the people of Paje village. Studies have been done focusing at the extent of fishing activities and seaweed farming. However, little information is known on the contribution of the two activities to the benefit of the fishers and seaweed farmers. Therefore, this study was put in place in order to assess the benefit of selected resources of Blue Economy to the fishers and seaweed growers of Paje village.

Specific Objectives
  i.   To examine the contribution of fisheries and seaweed farming towards the welfare of Fishers and Seaweed Growers at Paje village.
  ii. To examine the satisfaction of Fishers and Seaweed Growers of Paje village in utilizing selected resources (fisheries and seaweed farming) of Blue Economy to better their lives.

Literature Review
Theory of Access
This Theory of Access was developed by Ribot and Peluso (2003) in the Western Indian Ocean. Access refers to the use and physical access to the resource as well as to the ability and means to gain benefits from that use. In their theorization of access, Ribot and Peluso focused at the ability of actors to benefit from resources through the social relationships between people and the webs of power that configure resource access. Their approach consists of distinguishing different types of access mechanisms and analyzing them in three steps; mapping of benefits from a resource, identifying and situating the mechanisms used by actors to gain, control and maintains access to these benefits and analyzing the power relations involved in the process. This approach outlined three advantages (i) the mapping of benefits allows a clear identification of the actors involved at different geographical scales who access or control access to the resources and their direct or indirect benefits (ii) the approach highlights how gaining, controlling and maintaining access occurs not just by formal conventions (rights-based access), but many different types of structural and relational mechanisms at multiple scales (iii) through the analysis of power relations, it gives attention to political-economic circumstances that may affect access rights from one group or another. Hence, the theory was very suitable to study of influence of Blue Economy to benefit of Fishers and seaweed growers of Paje village by having the advantages of involving multiple actors at different geographical scales who access or control access to the resources and their direct or indirect benefits of the Blue Economy resources bring to the people.

Collective Action Theory
Collective Action Theory was introduced by Olson (1965) and then later popularized by Elinor Ostrom in Governing the Commons (Ostrom 1990) as a theory to explain why many communities using natural resources do not always experience overexploitation. For common-pool resources, or under provisioning for public goods, a so-called tragedy of the commons (Hardin, 1968). The theory hypothesizes a positive relationship between groups that are able to take effective collective action and the resulting social and environmental outcomes. The theory aims at appreciating how and why people cooperate through self-organization processes and what social and ecological variables influence self-organization (Ostrom, 2007, 2009). It is focusing on community-based solutions in resource governance or

governance perspective on how to resolve resource appropriation and provision dilemmas through governance, which has historically been viewed as a problem of aligning individual and group interests. Collective Action Theory is useful for assessing the status of governance by identifying what variables may be enabling or hindering self-organization processes. Thus, this theory relates to this study as it shows how ecological variables which include fisheries and seaweed growers influence development through self-organization that lead to more desired social and ecological outcomes such as sustained provision or use of those resources.

Methodology

This study adopted descriptive design. The purpose of employing this method was to describe the nature of the situation as it existed at the time of the study (Leary, 2001). The study selected Paje Village in South District of Unguja as its area of study. Paje Village was chosen because it is the most important and most populated area for fishers and seaweed growers in Unguja. The population of this study constituted 200 members of the targeted fishers and seaweed growers of Paje village (Fisheries officer South District, 2022) and 5 technical staffs from the Ministry Blue Economy and Fisheries. The sample size was calculated by using Yamane's (1967) formular which gave 135 respondents. For the purpose of this study, simple random sampling was applied to select respondents from Paje village. The study used this sampling technique so as to avoid conscious and unconscious bias in the selection of sampled respondents. The study also applied purposive design to the Technical staff from the Ministry of Blue Economy and Fisheries including Fisheries Officers and Planning Officers of the Ministry. This sampling technique was used in order to get information from the best fit participants. Data was collected using questionnaire. The study employed both quantitative data analysis methods. Quantitative data was analyzed by frequency tables and regression.

Results and Discussion
Profile of the Respondents
The section presented characteristics of study population in relation to gender, age and education level of the respondent as observed in Table 1.

Table 1
Demographic Feature of the Respondents

Variable	Category	Frequency	Percentage%
Gender	Male	59	45.4%
	Female	71	54.6%
Age	18-30	18	13.7%
	31-40	72	55.3%
	41-50	29	22.3%
	51 +	11	8.7%
Education	Primary education Secondary education University education Informal education	44 66 03 17	33.8% 50.7% 2.3% 13.1%

Source; Field data, 2022
The findings in Table 1 indicated that, the number of female is higher 71 equal to (54.6%) compared to males 59 equal to (45.4%) who participated in selected resources of Blue

Economy in Paje village. This implies that, many females participated in Blue Economy and gender balance was given priority in the use and management of Blue Economy activities.

Also the findings indicated that, majority of people who participated in this study were 72 equal to (55.3%) and were aged between 31 and 40 years. They were still an economically active group. Similar argument was advanced by Rutasitara (2012) who argued that, young age group is very active, aggressive and motivated by needs of their family and careering of their aged parents and grandparents.

Lastly, Table 1 shows that, 66 equal to (50.7%) of the respondents were educated up to secondary school and relatively lesser number of them. The number of respondents attaining primary education was 44 equal to (33.8%). Only 3 equal to (2.3%) of the respondents were educated up to the University level. A considerable number of respondents were just functionally literates and only 17 equal to (13.1%) of them were Informal Education. It can be concluded from the Table 1 that, respondents were progressive in education but they were still far away from the higher education which is so important today to create a knowledge based society.

Specific Objective One: To examine the contribution of fishers and seaweed growers towards the welfare of fisheries and seaweed growers at Paje village
In this specific objective, different indicators on contribution of selected resources of Blue Economy towards the welfare of fishers and seaweed growers of Paje village were presented and analyzed. Results are observed in Table 2.

Table 2
Contribution of selected resources of BE to the welfare of Fishers and seaweed growers

Contribution	Responses	
	Frequency	Percent %
Improvement of standard of life	40	30.7%
Improvement of Self-employment	26	20%
Poverty alleviation	18	13.8%
Increased support to domestic services	17	13%
Increased household assets	16	12.3%
Engagement in different small business	13	10%
Total	**130**	**100%**

Source: Field data, 2022

It is seen from Table 2 that, only 40 equal to (30.7%) of respondents reported that, improvement of standard of life was a major contribution realized from Blue Economy resources. In this case, local communities were empowered subsequently encouraged to engage in Blue Economy activities such as fishing and seaweed growing. Hence Blue Economy improves both standard of life of community members and their livelihoods. Table 2 also shows that, only 26 equal to (20%) of the respondents reported that, self-employment had improved after the official introduction of Blue Economy Policy in Zanzibar. The improvement could also be attributed to some household's involvement in profitable Blue Economy -based income generating activities. Only 18 equal to (13.8%) of the respondents reported that, Blue Economy resources have contributed to the poverty alleviation. This was obtained through

fishing activities, seaweed growing and local marine transport to the tourist who visit Paje coastal area, hence increased their income and reduced poverty levels. Furthermore, the study done by Nshubemuki (2019) revealed similar findings that, each household in communities in Paje in particular around the reserved coastal areas earned a total of TZS 310,329 in 2015 from selling fish and local marine transport from auction mart.

Table 2 also shows that, other 17 equal to (13%) of the respondents reported that, increased support to domestic services after the introduction of Blue Economy policy and resources was realised. This assertion was made mainly because of the existence of tangible benefits to the local participating communities in contrast to their initial low expectation of high economic benefits from joint Blue Economy activities. From the finding above, there is more need for a Blue Economy programme to increase alternative income generating activities to communities such as fish keeping and small business to enable local communities to raise their income through these income generating activities, hence, improve the lives of people in their daily lives. Other 16 equal to (12.3%) of the respondents reported that, Blue Economy resources have increased household assets, it was reported that, there was an increase of household asserts such as improved cash savings, increased ownership on local marine transport, education, health services and employment and all these improved their lives. This was attributed to involvement of Governmental programmes such as environmental education. Lastly, 13 equal to (10%) of the respondents reported that, Blue Economy resources have increased engagement of Paje local community to different small businesses. This was obtained through selling their seaweed, fish and seaweeds materials to the tourist and local people who visit their area, hence, increased their income. This is to say that, these income generating activities originating from Blue Economy opportunities contributed significantly to total household income. Therefore, increased different small businesses help local communities of Paje village to afford to acquire basic needs such as food, shelter and clothes to improve their lives as well as reducing poverty to the community members.

Multiple Regression Analysis
In this study, descriptive and multiple regression analysis were used to analyze the data. Therefore, Table 3 displays the coefficients' columns for the standard multiple regressions conducted.

Table 3
Coefficients Table for ISL, SE and PA from Blue Economy Resources

Model	Unstandardized Coefficients		Standardized coefficients	T	Sig.	95.0% confidence interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	.882	.181		4.872	.000	1.154	2.726
Poverty alleviation	.083	.181	.089	1.608	.109	.037	.2.68
1 improved standard of living	-.274	.056	-.287	-4.943	.000	-103	-310
Self-employment	.181	.044	.238	4.111	.000	.44	.110

Independent Variable: Blue Economy
Source: Field Data, 2022

With reference to Table 3, at the 0.05 level of confidence, the study revealed that, one dependent variable (self-employment) had a significant contribution on the outcome variable (Blue Economy). Conversely, improved standard of living had a negative direction on Blue economy (β = -0. 287, t = -4.943, p < 0.05). However, one predictor variable; that is poverty alleviation did not show any significant result (β = 0.089, t = 1.608, p > 0.05 (0.109)). This situation indicates that, the increase of scores in this predictor variable results in the increase of scores in the outcome variable (Hair et.al., 2010; Pallant, 2016).

Specific Objective Two: To examine the satisfaction of fishers and seaweed growers of Paje village in utilizing selected resources of Blue Economy to better their lives
In this objective, different indicators were mentioned in the list of questions and respondents were supposed to select either very satisfied, satisfied, moderate, dissatisfied, or very dissatisfied on satisfaction of fishers and seaweed growers of Paje village in utilizing selected resources of Blue Economy as described in Table 4.

Table 4
Compensation of the effort and time used by fishers and seaweed farmers

		Frequency	Percent
Valid	Never	62	47.6%
	Rarely	13	10%
	Sometimes	31	23.8%
	Very often	11	8.4%
	Always	13	10%
	Total	**130**	**100.0%**

Source: Field Data, 2022

The findings from Table 4 show that, 62 respondents equal to (47.6%) said never compensated, 13 respondents equal to (10%) said rarely, whereby 11 respondents equal to (8.4%) said very often, 13 respondents equal to (10%) said always and only 31 respondents equal to (23.8%) said sometimes. Therefore, due to the results, the study clearly indicated

that, most fishers and seaweed farmers were not satisfied with the Blue Economy activity, hence, the time and effort used do not compensate with the activities they are doing and go beyond with their high expectations. This result was similarly reported from the study of Contribution of Blue Economy resources on livelihoods: a case of Mafia District (Gown, 2015), that, household economic condition has worsened despite the introduction of Blue Economic opportunities in Tanzania

Table 5
Increased household assets and gaining more benefits

		Frequency	Percent
Valid	Strongly disagreed	58	44.6%
	Disagreed	17	13%
	Neutral	15	11.5%
	Agreed	22	16.9%
	Strongly agreed	18	13.8%
	Total	**130**	**100.0%**

 Source: Field Data, 2022

The findings in Table 5 show that, 58 respondents equal to (44.6%) strongly disagreed, 17 respondents equal to (13%) disagreed, whereby 22 respondents equal to (16.9%) agreed, 18 respondents equal to (13.8%) agreed and only 15 respondents equal to (11.5%) were neutral. Therefore, due to the results, the study clearly indicated that, most fishers and seaweed farmers were not satisfied with the income they earn and their activities did not increase their household assets and gained less benefits.

Multiple Regression
Apart from the above results, there is another result of multiple regressions which is coefficient of the independent variables to measure their influence to dependent variable. Therefore, Table 6 displays the coefficients' columns for the standard multiple regressions conducted.

Table 6
Coefficients Table for ISL and EI from Blue Economy Resources

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	T	Sig.
1 (Constant)	1.816	.175		10.372	.000
Compensation of the effort and time used	.289	.050	.323	5.793	.000
increased household assets for gaining more benefits	-.271	.048	-.312	-5.598	.000

Independent Variable: Blue Economy
Source: Field Data, 2022
With reference to Table 6, at the 0.05 level of confidence, the study revealed that, two predictors (Compensation of the efforts and time used and increased household assets for

gaining more benefit) had a significant effect or impact on the outcome variable (Blue Economy). In other words, the results of predictor variables as seen in Table 6 are as follows: Compensation of the effort and time used ($\beta = -0.323$, $t = -5.793$, $p < 0.05$), increased household assets for gaining more benefit ($\beta = -0.312$, $t = -5.598$, $p < 0.05$). The estimate multiple linear regression equation becomes. **BE = β_0 + β_1CET + β_2GB + e** Basically, the effect of reduced increased household assets for gaining more benefit from Blue Economy activities among fishers and seaweed farmers in Paje village was in a negative direction. This situation indicates that, the increase of scores in these predictor variable (reduced standard of living) results in the decreasing of scores in the outcome variable (Blue economy activities) (Hair et al., 2010; Pallant, 2016).

Conclusion

CONCLUSION	SIGNIFICANCE
It is seen from this study that, Blue Economy resources have not yet brought benefits to livelihood of local communities particularly fishers and seaweed farmers in Paje village	This study is indeed handy in enabling the Revolutionary Government of Zanzibar be aware about the needs of Paje community such as sustainable fishing practice and modern tools in utilizing Blue Economy resources for their benefits.
It is seen from this study that, Fishers and seaweed growers of Paje village are not satisfied in utilizing selected resources of Blue Economy to better their lives	Through the results of this study, Government may appreciate the plight of community including but not limited to good prices and modern Policy which enable them to be satisfied in utilizing selected resources of Blue Economy to better their lives.

Due to the fact that the Revolutionary Government of Zanzibar is very proactive on matters relating to its nationals, the results of this study may inform the Government through its line Ministry of Blue Economy to redefine and impose strong Blue Economy policies aimed at providing more awareness to the public about the significance of Blue Economy.

Similarly, through the study findings and recommendations, the Government with its associated none governmental organizations may make better use of the resources and enable the community to achieve and enjoy Government development agenda.

Recommendations

The study recommends that, local community empowerment through training on income generating activities such as adapting of best suitable fishing practices for example sustainable modern and advanced tools such as engine boat, big nets and others. Improvement of both key fishing and seaweed infrastructure including ice-making plants and cold-storage facilities to store excess catch, seeds and feeds for better marketing opportunities. Strengthening law enforcement to protect marine protected areas in order to address illegal and unregulated fishing practices. This will reduce the rate and incidence of unsuitable fishing practices, hence improving the health and quality of the marine protected areas.

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