Poverty and Gender Perspectives in Marine Spatial Planning: Lessons from Kwale County in Coastal Kenya



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Poverty and Gender Perspectives in Marine Spatial Planning: Lessons from Kwale County in Coastal Kenya

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Preface

Kenya, like many other countries, is increasingly relying on a Blue Economy approach to ensure its sustainable development, an approach founded on the premise of poverty eradication by providing sustainable livelihoods and decent work, supplying food and minerals, generating oxygen, absorbing greenhouse gases, mitigating the impacts of climate change, and serving as highways for sea-based international trade. However, while the blue economy approach offers vast economic opportunities, it is necessary to ensure an inclusive approach and the social inclusion of the poor and vulnerable, by empowering people, building cohesive and resilient societies, and making institutions accessible and accountable to citizens in a bid to achieve the Sustainable Development Goals.

UNESCO's Intergovernmental Oceanographic Commission (IOC) has worked with the Government of Kenya in multiple initiatives aimed at providing strategic alignment of the country's Blue Economic sectors within the coastal and ocean space, to enable them to harness the benefits in an optimal manner. Recent joint initiatives have been geared towards ensuring that the ongoing Marine Spatial Planning (MSP) initiatives are inclusive and incorporate views and expertise from all stakeholders. The MSP process is integral as it offers a systematic and sustainable means to allocate space and understand the interactions among and between resource user groups and the marine environment in Blue Economy growth scenarios.

This joint initiative with the generous financial support of The Swedish International Development Cooperation Agency (SIDA), provides a unique gender lens to assess why and how planning and utilization of the coastal and seascape are expected to influence poverty outcomes in coastal zones of developing countries. A key finding from this study is that women often face limited access to opportunities compared to their male counterparts. It was further concluded that in some communities, cultural norms and societal biases continue to aggravate this vulnerability, exposing women to exploitation and unfair competition. This indeed highlights the need to ensure gender inclusivity in decision-making and resource allocation initiatives such as MSP.

Whereas Kenya, and many other countries in Africa, have made some important steps towards initiating and adopting a sustainable ocean economy approach, it is crucial to acknowledge that several obstacles lie ahead. Development, implementation and evaluation of marine spatial plans for a sustainable Blue Economy require a diverse set of resources, including institutional governance frameworks, financial support as well as range of human skills and expertise. As such, UNESCO-IOC is committed and will continue to support Kenya in the development of its Blue Economy strategy as part of the implementation of the 2030 Agenda for Sustainable Development and its Sustainable Development Goal 14.

Abbreviations and acronyms

BMU	Beach Management Unit
CCA	Community Conserved Area
CCGD	Collaborative Center for Gender Development
CEC	County Executive Committee
CFA	Community Forest Association
EEZ	Exclusive Economic Zones
FGDs	Focus Group Discussions
GPS	Global Positioning System
JKP	Jumuia ya Kaunti za Pwani
KFS	Kenya Forest Service
KMFRI	Kenya Marine and Fisheries Research Institute
MCAs	Member of County Assembly
MDPA	Multi-Dimensional Poverty Assessment
MSP	Marine Spatial Planning
NGOs	Non-Governmental Organizations
SDG	Sustainable Development Goal
UN	United Nations
UNESCO-IOC	Intergovernmental Oceanographic Commission of UNESCO
VSLAs	Village Savings and Loan Association
WIO	Western Indian Ocean

Executive Summary

Access to resources, opportunity and choice, power and voice, peace and conflict influence the evolution of poverty and gender roles in a community. These are further impacted by political and institutional arrangements, violence and insecurity, economic and social status, and environmental health. Planning and utilization of the coastal and seascape are expected to influence poverty outcomes in coastal zones of developing countries. These outcomes should be viewed from a gender lens to determine how the welfare of different gender and groupings, e.g., women, youth, and men in the coastal areas of developing countries, will be affected by coastal and seascape planning. One such marine spatial plan (MSP) is proposed in the coastal regions of Kenya. Once effected, the proposed MSP is likely to exclude the views and aspirations of the communities on planning and utilization of the marine space if views need to be clearly understood and articulated. To guard against the exclusion of the communities in the marine spatial plan, understanding the poverty and gender perspectives of these communities is imperative in determining how they would like the marine space planned and how they are likely to be influenced by the MSP. Using a sample of 452 households from Kwale County in Coastal Kenya, comprising 29% from Lunga Lunga, 23% from Matuga, and 48% from Msambweni sub-counties, primary data were collected to determine the communities' livelihood sources, their proposals on how best to plan the marine space, and how they are likely to be influenced by proposed MSP. The survey data were supported by focused group discussions (FGDs) from 16 resource user groups. Findings show shared the common resources available in Kwale county include, marine resources, e.g., open waters, beaches, corals, seagrasses, and mangroves while coastal resources include farmlands, forests, settlements, minerals, and urban areas among others. The typical economic activities in the county include formal employment, tourism, fishing and fisheries related activities, crop and animal farming, small and peasantry trade, conservation, etc. Results also show mixed reactions on the abundance of the natural resources that communities depend on for their livelihoods, with some respondents indicating that the resources were dwindling due to extensive harvest. In contrast, others stated that there were fluctuations in the availability of the resources over time. Some respondents indicated that resources are being depleted due to changing climatic patterns, unsustainable fishing, e.g., use of ring nets, ineffective enforcement of existing rules, cutting down of trees along the river to pave the way for farming, etc., while others indicated that fishing was improving in the area. The respondents also indicated that they did not pay any money to access the resources, as the access was open and accessible. In some cases, however, the communities said that the access to the resources was governed by fishing laws.

There were mixed reactions on whether women had the same opportunities in the community as men. Most men indicated that they had same opportunities as women, but women refuted the claim indicating that they experienced cultural and traditional barriers. Additionally, the opportunities available to men, in most cases were different from those available to women. For instance, in Gazi, the opportunities available for men included harvesting honey, fishing, and cutting of mangroves (when bans were lifted); while women practiced shrimp sourcing and bee keeping. Opportunities available to both men and women were fish trading, seaweed farming, and crop farming. The communities identified several issues that would prevent men, women, and youth from choosing any livelihood activity they would want to undertake. Some of these issues were delayed gratification/lack of instant benefits from the resources, cultural/traditional hindrances, inability to undertake certain livelihood activities e.g., lack of capital to start business enterprises,

women shunning away from group responsibilities where men are involved, women wanting less committal positions with fewer responsibilities, etc. The communities were asked about the changes they were afraid of with the improved exploitation of the coastal areas and indicated that they feared land grabbing and evacuation due to proposed new developments, increase in pollution, uncertainties in benefit sharing when investments are made in the community, and their shrines being taken over by National Museums of Kenya as heritage sites. Others feared the destruction of seagrass beds by fisherfolk loss of employment, and increased poverty due to the lack of fishing boats could access deep sea fishing and enforcement of the gazettement of Diani area as a marine park which will take away their fishing areas. There were also of deterioration or degradation of seaweed farms, an increase in depth of the sea through dredging, which makes fishing harder, and more favorable treatment and permits to modern investors, e.g., Huawen fish processing factory, which has been licenced to use ring nets for anchovies whereas local fishers are not allowed to use the same.

The communities in Kwale County have a variety of resource user associations, with the majority comprising of both women and men. In nearly all the resource user associations, women held leadership positions. In decision-making, the communities felt that women's opinions were listened to, respected, and seriously considered on all matters. However, there were mixed reactions regarding women's representation in national and county government administrations. Communities also indicated several challenges facing resource user associations, e.g., mistrust between members, between women and men of the groups/associations, and fishing beyond allocated fishing jurisdictions. The commonly reported conflicts included theft of fish from common project catch, fisherfolk and fish traders overpricing their catch during the recording of fish at landing sites, and some fisherfolk evading or failing to declare their catch. Boat operators were also reported as ferrying tourists belonging to hoteliers without the consent of the hoteliers, there was the sale of land without the consent of all members, corrupt practices in the groups with elections taking long to be conducted, and leaders not involving community members in times of decision making. Other sources of conflict were the removal of buoys serving as boundaries to community conserved area (CCA) by fisherfolk against the consent of the others and funds misappropriation/embezzlement and lack of transparency. The frequency of conflicts in these communities varied from group to group, with those of women in Makongeni and men in Chale occurring more frequently, while the rest took a long time to arise. The communities have devised different ways of resolving conflicts, including seeking the assistance from the County Fisheries department for Beach Management Units (BMUs), using internal group dispute resolution mechanisms, using court processes for land issues, suspending problematic members from associations, and addressing issues through the local administration.

Most members of the communities in Kwale County were aware of the rules and regulations governing resource use and extraction, but some were not. The communities felt that there was laxity in enforcing these rules and regulations. They had developed local mechanisms, besides the formal ones by the government, to police the exploitation of the resources, e.g., use identification documents that give them some rights to exploit, and patrols to protect the mangrove forests from illegal extractors. Most people indicated that they knew their rights. Still there were mixed reactions on whether the local authorities, e.g., chiefs, ward representatives, and Members of the County Assembly (MCAs), respect the rights of the people, with the majority of the respondents indicating that local authorities respect their rights. At the same time a few said they do not. All communities indicated that there are different types of conflicts amongst resource users but rarely did the conflicts result in violence amongst individuals or groups. Nearly all communities indicated that they feel secure extracting resources. However, some feared the removal of seaweed farming ropes, theft of resources, and disruption of security by many youths who are into drugs.

The communities also indicated that the cost of extraction of the resources has increased over the years. This high cost could be attributed to: resources becoming scarcer due to overexploitation, change in exploitation technologies, e.g., use of motorized boats, changing rainfall patterns and climate change, destruction of fishing habitats, high cost of living, competition (more people accessing of the resources), etc. In Kibwaga, for instance, there has been the destruction of the Kaya Tiwi which has robbed the community of the cultural

value of praying in it. There is also drilling for mineral exploration which affected fish habitat such as corals and caused fish to migrate offshore. The communities also indicated some form of taxation by the county or national government on resources extracted. However, there were no extraction fees enforced at the community level. The communities used income from the extracted resources for general household expenditures with limited amounts spent on school fees since the County government had subsidized education and the cost of health for the community.

Finally, most of the communities think about the future of the resources as they extract them and are conscious of the sustainability of the environment. At the current rate of resource extraction, the communities felt that the resources would still be available 20 years in the future provided the proper harvesting methods and tools are used. The communities were asked what is to be done to ensure sustainable extraction. Some suggested mangrove planting for carbon credits, seagrass conservation, and planting alternative trees such as Casuarina. In Makongeni and Chale, the communities suggested embracing alternatives, e.g., apiculture and mariculture. The groups in Kibuyuni advocated for the implementation of government-set regulations on resource use, and regulations of unwanted fishing gears e.g., spearguns. They also expressed their willingness to have motorized boats to fish in the deep sea and allow replenishment of the inshore waters. In Vanga, the communities were for awareness creation on resource extraction, community policing/enforcement, and adhering to set regulations e.g., a ban on cutting mangroves.

1. Background

Marine Spatial Planning (MSP) is a strategic process for spatially planning the use of the sea designed to bring about sustainable development of the "Blue economy" through ecosystem-based management and sustainable ocean governance (Douvere, 2008; UNESCO-IOC, 2009; Agardy, 2010, Schaefer & Barale 2011). It is defined as a "public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process." It is advocated by the Intergovernmental Oceanographic Commission of UNESCO (IOC) as a participatory, adaptive approach that uses spatial zonation to reduce user conflict and cumulative negative impacts on marine ecosystems.

Over the past 15 years, MSP has gained increased attention globally. Currently, about 100 countries have a national initiative or process for developing MSPs, ranging from the early stages of establishing national authorities and arranging funding, to planning for revisions and adaptation of already developed and implemented plans (IOC-UNESCO, 2022). MSP processes occur in all regions of the world, including low- to high-income countries. The interest in MSP is expected to grow, resulting in an increasing number of countries exploring the possibilities for developing national MSPs over the coming decade. A strong reason for the drive behind MSP is the belief that a strategic use of the ocean is a tool for meeting several national goals, such as increased economic growth, preservation of marine environments, and improved social development, such as job creation and improved opportunities for recreation.

The allocation of sea space is likely to impact stakeholders deriving livelihoods from the marine environment especially the poor and vulnerable groups in the communities, such as women and youth.

Kenya like many other countries in the Western Indian Ocean (WIO) region, is in the preparation stages of marine spatial planning development to better manage their marine environments. It is thus vital to understand how gender and poverty perspectives are likely to be affected before the exercise starts to inform the government on the potential impacts of MSP on these groups and help design mechanisms for mitigating these impacts.

1.1 Poverty Perspectives

Agenda 21, the non-binding action plan for sustainable development produced at the United Nations (UN) Conference on Environment and Development in 1992, emphasized that poverty is a complex multidimensional problem with origins in national and international domains. The measurement of poverty comprises of identifying the insufficient and aggregating data on poverty into an overall index (Tsui, 2002). Understanding and applying poverty dimensions is critical in incorporating poverty perspectives in MSP processes. Two approaches have been used to identify the people affected by poverty. The first is the income or poverty-line method of aggregation, which has attracted considerable attention and involves the determination of a poverty-line income sufficient to attain minimum basic needs. Any individual that falls below this line is considered poor or deprived. In the MSP example, this would involve using an already predetermined poverty-line, or construction of a local poverty line, against which incomes or expenditures of individuals in the communities under consideration would be gauged. The poverty-line or income method, mainly, introduces several practical problems, such as measurement errors but also presents difficulties, particularly when constructing poverty lines to compare households in a community, region, or country (Browning, Crossley & Weber, 2003; Deaton, 2010).

The second method, the multidimensional poverty approach views income not as an intermediary of basic needs, but in terms of shortfalls from the minimum level of the basic needs themselves. Since markets for all basic needs do not always exist, contrary to presuppositions of the income approach, the multidimensional approach to poverty measurement has gained popularity, due to this and other considerations, especially among development economists and development agencies. This approach is in the category of subjective measures of poverty which ask people whether they perceive themselves as poor or not (Alem, Köhlin, and Stage, 2014). Depending on how the questions are framed and the responses from the subjects, information from subjective measures of poverty can be used to effectively measure poverty over time, make comparisons (Ravallion & Lokshin, 2002), and provide more information about deprivation.

The differences and preferences notwithstanding, both methods are objective as they involve the collection of household surveys and use individual characteristics such as education and investment opportunities, as well as the surrounding social and economic, environmental, and other contexts affecting how the household can use those opportunities to determine a household's long-term financial wellbeing.

1.2 Gender Perspectives

The Sustainable Development Goal (SDG) 5 aims to achieve gender equality and empower all women and girls. On a global level, women still experience legal, social, and economic barriers to their empowerment and are under-represented at all levels of political leadership (UN, 2020). Girls tend to be less educated, which means they have limited opportunities in the labor market, and when they enter the labour market, they tend to do so at lower wage rates than men (Agesa, Agesa & Dabalen, 2013; Nix, Gamberoni & Heath, 2016). This not only puts them in a vulnerable position concerning treatment by men, but also limits economic growth (UN, 2020). Vulnerable women also tend to have more children for cultural or financial reasons, which exacerbates maternal mortality rate and childhood malnutrition (Dasgupta, 1997).

Indeed, there is a strong connection between women's empowerment and poverty alleviation. Women's empowerment and its importance in accelerating the fertility transition is seen as a key strategy in accelerating poverty reduction in Africa (Beegle & Christiaensen, 2019). Gender analysis is used to assess gender relations in a society, and the inequalities therein, by asking: who does what? who has what? who decides? how? who gains? who loses? etc. While there is no universal way to undertake a gender analysis, numerous frameworks exist to highlight gendered differences in terms of opportunities, status, and standards in society, such as the Harvard Analytical Framework and the Moser Framework (March et al., 1999; de la Torre-Castro et al., 2017). These typically comprise simple tools (e.g., checklists, tables) to guide qualitative information gathering. These tools have allowed better recognition of how policy decisions affect women by considering the gendered differences in reproductive, productive, and community roles, the practical and strategic needs of women, and who controls resources, for example.

While gender issues exist throughout society, they are of greatest concern in poor communities. Indeed, gender issues are recognized as a significant factor in the multidimensional poverty framework of The Swedish International Development Cooperation Agency (Sida). Thus, women can be seen as impoverished when they lack access to resources, voice and power, opportunity and choices or insecure in their homes due to their roles and position in society. Thus, it can be recognized that, women, or any other marginalized group, fit the same profile described in this framework.

2. Objectives of this study

Poverty is complex and affects people in different ways. It is also multidimensional, meaning that poverty does not simply mean a lack of resources, but also a lack of opportunity and choice, power, and voice, and/or human security. These four dimensions of poverty are interlinked in complex ways, where changes in one or several dimensions could lead to positive and negative changes in others. Therefore, instead of asking who is poor, one needs to widen the perspective further by asking: who is poor and in what way? Gender could also be analyzed along the same perspectives by determining the role of different gender groupings in each of the poverty dimension. Using these dimensions to analyze poverty and gender, we expect to create new knowledge on the relationship between MSP, gender, and poverty. This study is relevant in an international development context and specifically for the Western Indian Ocean (WIO) region, which includes Somalia, Kenya, Tanzania, Mozambique, and South Africa, along with the island states of Seychelles, Madagascar, Mauritius, and Comoros.

The study explored barriers and opportunities for the poor and vulnerable groups to participate in MSP and discusses how a gender-representative MSP process that takes care of the poor could look like. The study incorporated researchers from the Kenya Marine and Fisheries Research Institute (KMFRI) in all stages, i.e., questionnaire design, training, pre-testing, data collection, and report writing. It is expected to build the capacities of these researchers' on gender and poverty perspectives in MSP, even as the institution leads the process of MSP in Kenya. Finally, this study will contribute to the implementation of the IOCAFRICA program on Ocean Sciences and Assessments, by analyzing and reporting poverty and gender perspectives in marine spatial planning in coastal Kenya. The objectives of the assignment are to:

- Prepare an inception report outlining the methodologies for undertaking the case study on Poverty and Gender Perspectives in Marine Spatial Planning in coastal Kenya, highlighting the definition of poverty in the context of the case study, details of analysis and modeling to be undertaken, and detailed estimation of expense.
- Prepare a detailed questionnaire for the survey based on the methodologies outlined, that can be modified and used for similar subsequent studies by KMFRI at other locations along the Kenyan coast.
- Provide training to and utilize the services of at least 3 researchers and 3 technicians from KMFRI on survey methodologies for assessing gender and poverty perspectives in MSP to enable them to undertake similar surveys in other parts of the Kenyan coast.
- Collect data for analysis and modeling by identifying and interviewing at least 400 households (face-to-face) and organizing focused group discussions (FGDs) in the sub-counties of Msambweni, Matuga and Lunga Lunga using the criteria and methodologies outlined at the design stage of the study.
- Compile a comprehensive report on the case study gender and poverty perspectives in MSP in Kenya.



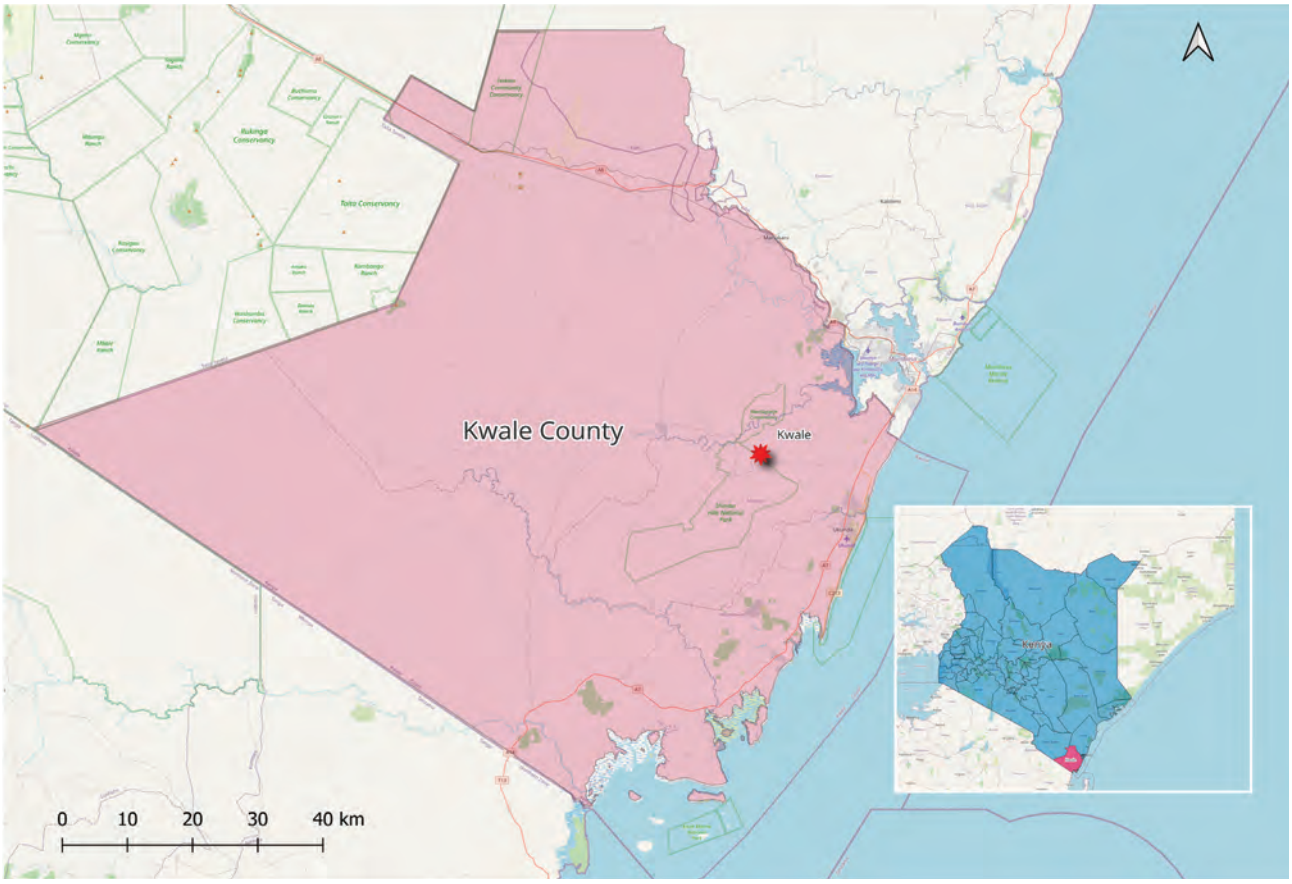
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3. Study Methods

3.1 Study Area

This study was conducted in Kwale county in coastal Kenya. The county is one of the six counties in the coastal region of Kenya and a member of the Jumuia ya Kaunti za Pwani (JKP) economic block. It borders Taita Taveta County to the Northwest, Kilifi County to the North and Northeast, Mombasa County and the Indian Ocean to the East and Southeast and the United Republic of Tanzania to the Southwest. The County is located in the Southern tip of Kenya (Figure 1), lying between Latitudes 30.05º to 40.75º South and Longitudes 38.52º to 39.51º East. Kwale County covers an area of about 8,270.2 km^2, 62 of this being water surface. This area excludes the 200 nautical miles' coastal strip known as the Exclusive Economic Zones (EEZ). The county was selected because it represents all possible economic activities carried out by coastal communities in Kenya. It also forms a continuum with the northern coast of Tanzania, where a similar study will be carried out.

Figure 1: Map of Kwale County



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3.2 Survey Design

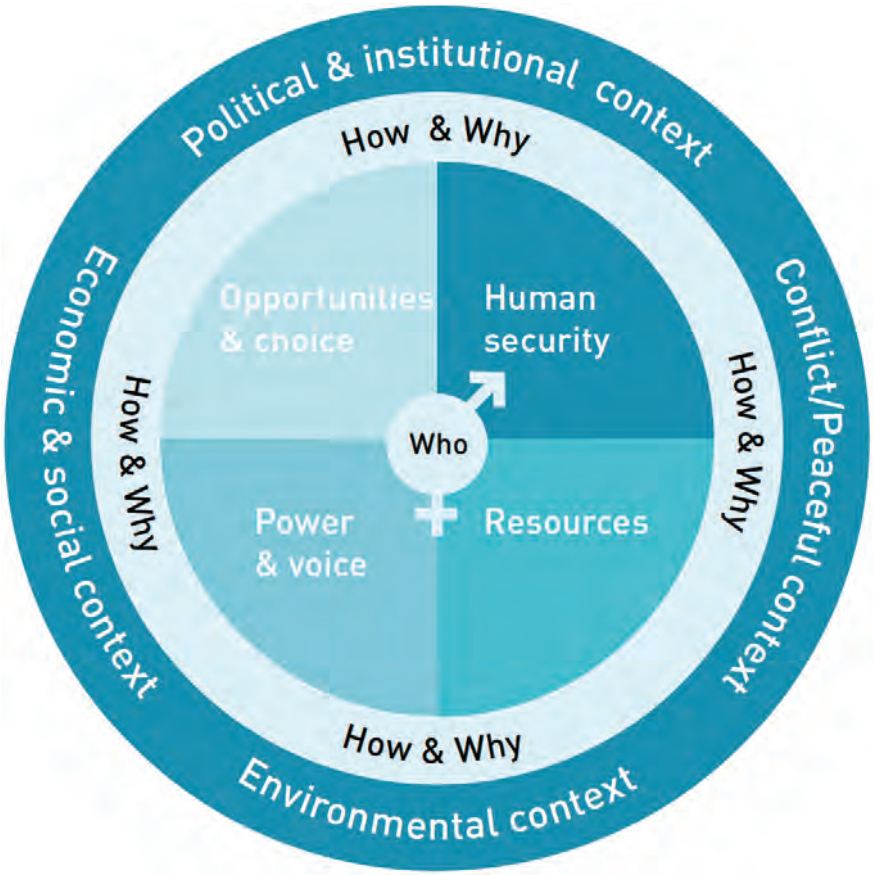
The survey employed a mixed-method cross-sectional study design, collecting qualitative and quantitative data at different levels. The study adopted a multi-stage sampling procedure where three sub-counties in Kwale county that border the ocean front, viz. Lunga Lunga, Msambweni, and Matuga were purposively selected in the first stage. In the second stage, nine locations bordering the ocean in these sub-counties were randomly selected, and thereafter villages selected randomly from the nine locations. The sampling of households in the villages was random and involved drawing transects across the villages and picking individual households randomly.

3.3 Study Framework, data needs and sources

The quantitative and qualitative analysis of this study was informed by the Sida multi-dimensional poverty assessment (MDPA) framework. The choice of this framework is based on its tractable concentric view of poverty and its determinants that are easy to follow and apply. Figure 1 below shows the different levels of analysis considered in Sida MDPA framework.

To accomplish this study, the researchers needed data on poverty and gender dimensions for the communities in Kwale County. These included data on:

Figure 2: The Swedish International Development Cooperation Agency's multi-dimensional poverty



(Source: SIDA, 2017)

- **Access to resources:** There are different types of resources that play an important role of food security, livelihoods, and wealth generation for coastal communities (Matsue et al., 2014). These resources are found in marine and coastal environments and are derived from among other fisheries and mangrove ecosystems. Data and information on access of the resources and gender considerations in the access was important in determining the poverty status of different groups in the communities.

- **Opportunity and choice:** These determine one's possibilities to develop and/or use the resources to move out of poverty. These opportunities which include access to productive employment, education, health clinics, infrastructure, energy, markets, and information affect the choices available and opportunities to escape from poverty. In the coastal region of Kenya, the communities are exposed to different opportunities which they can use to move out of poverty. Data on these opportunities and the choices people made was important in determining their poverty levels.

- **Power and voice:** We were also interested in data and information on people's ability to articulate their concerns, needs and rights in an informed way, and to participate in decision-making on issues affecting these concerns.

- **Violence and insecurity:** These are constraints to different groups and individuals' possibilities to exercise their human rights and to find paths out of poverty. They can hinder the potential benefits accruing from any intervention including MSP. A potential challenge could be conflicts over resources arising from disgruntled groups or communities whose needs have not been taken care of in the process due to, for example, poor stakeholder engagement. The data collected from FDGs discussions was important in explaining the coastal communities' challenges on violence and insecurity.

These poverty and gender dimensions produce the status of the individual or household. They highlight the underlying causes and help identify pathways out of poverty. They also interact with other meso and macro-variables to determine the final status of the individual or community. These other factors include:

- **Economic and social context:** covers the size and growth rate of the economy, the key macroeconomic variables, fiscal policy, structure of the economy and exports, use and dependence on natural resources, education system, health system, and demographic developments.

- **Political and institutional context:** refers to the formal and informal political institutions, norms, rule of law, and human rights.

- **Peace and conflict context:** refers to factors such as social cohesion, trust, conflict resolution mechanisms, justice, and arms control on the one hand and violence, tensions, grievances, and conflicting interests on the other.

- **Environmental context:** includes the need to understand the environmental situation, trends, and consequences in the country or region – e.g., climate change, loss of biodiversity and ecosystems services, pollution, water quality – and the causes and drivers of degradation.

These data from both levels, described in the Sida Multi-Dimensional Poverty Assessment (MDPA), are mainly primary data and were collected through household surveys and FDGs. Secondary data from different sources, e.g., reports were also used. Sampling was done to collect the primary data, and data was to be collected proportionately from the three sub-counties.

3.4 Sampling

3.4.1 Quantitative data

The sampling frame has been provided as 25,620 households from which a sample size was selected. We assumed a level of 50% of the targeted households appreciate and clearly understand the project's benefits. This was used to yield the maximum sample size and more precise estimates. A 95% confidence interval (CI) was used in sample size determination. Using the Cochrane (1977) formula, a sample size of 384 participants was computed.

$$n = \frac{Z^2(pq) * nrf}{d^2} \qquad (1)$$

Where n is the minimum sample size required to estimate satisfaction with a precision of; is the abscissa of the standard normal curve at 95th percentile; is the accuracy or the expected width (margin of error) of 95% CI. In this study is set to %; is the estimated proportion of participants who appreciate and understand the benefits of the project, which is assumed to be 50%; and . The non-response factor, was also used to adjust the sample and take care lack or inadequate response from the households. In this study, we allowed for a 20% non-response, hence multiplication with the 1.2 scalar.

$$n = \frac{Z^2(pq) * nrf}{d^2} = \frac{1.96 \times 1.96 \times 0.25 \times 1.2}{0.0025} = 461 \text{ participants} \qquad (2)$$

After defining the sample size, households to be surveyed were apportioned to the different sub-counties, locations, and villages using proportionate to size sampling. At the village level, households were randomly selected with the help of village headmen and given unique serial identifiers. Global Positioning System (GPS) coordinates of all households were collected during the survey to locate sampled households. The survey target was to conduct all households identified in each village, with the remaining households in the villages used for replacement in case the primarily selected household did not have an eligible member, or they could not be traced. All household members (male and females) above 18 years old in every selected household met the study eligibility criteria and were eligible for enrollment. If a selected household did have any eligible person, it was replaced by the next household in the selection until a household with eligible participants was found. Note that the communities described in the study were those within 10 km or less from the shoreline. It is assumed that the socio-economic characteristics of the sampled communities were representative of other coastal communities living under the same conditions along the Kenyan coast and beyond.

3.4.2 Qualitative data

The focused group qualitative data collection technique was used. The FGDs targeted communities in the sub-locations and villages where the household survey was also conducted. The two exercises ran concurrently. In the FGDs, we targeted members from households not involved in the household survey. In total, a target of 16 FGDs were conducted. These FGDs were selected based on resource user groups. Each FGD comprised of 8-12 members and was designed to ensure heterogeneity of gender, age, enterprise type, and other relevant selection criteria. Since the participants of each FGD were from a single sub-location, facilitation was done to gather them in a central place in the sub-location.

3.5 Data collection and analysis

The key method of primary data collection was face-to-face interviews. A survey questionnaire was developed based on the project objectives. The team was keen to capture all the aspects of the project.

Quantitative data collection tools were digitized for electronic capture and transmission using Kobo Toolbox. The electronic questionnaire was uploaded to enumerators' mobile smartphones using a unique Kobo Collect app. Data collected were submitted to a server daily. Once the data were collected, appropriate statistical software e.g., Stata and Excel, were used for analysis, and presentation was in the form of descriptive statistics with graphical and other visual aid representations. The study was designed to ensure that all the issues on gender and poverty in MSP were addressed and captured.



Plate: 1 FGD with a fisherfolk group in Tiwi, Kibwaga village © UNESCO-IOC



Plate: 2 Plate: 1 FGD with a fisherfolk group in Bigamtangizeni village © UNESCO-IOC



Plate: 3 FGD with a women group (Fish dealers) at Shimoni Centre © UNESCO-IOC



Plate: 4 FGD with a women group (seaweed farmers) in Kibuyuni village © UNESCO-IOC

For qualitative interviews, FDGs guides were developed for the various focus groups chosen based on the resources they extracted or depended on. Likert scales were also used to capture responses in ordered categories, allowing for qualitative data analysis using quantitative approaches. Analysis for qualitative data took the form of a framework approach, where views of different respondents were first transcribed, and emergent themes and concepts were organized to form well-knit storylines that reflected the community's views on poverty and gender issues in MSP.



Plate: 5 Face-to-face interviews with the respondents in Bigamtangizeni village © UNESCO-IOC

4. Findings

This section presents the findings from household survey and FDGs on poverty and gender perspectives in MSP in Kwale County. The analysis was organized to address the respondents' basic demographic and socio-economic characteristics, but also residence and neighborhood characteristics of the respondents. This helped set the stage by describing the communities being addressed in the study. Additional findings are presented after the descriptive analysis of community characteristics.

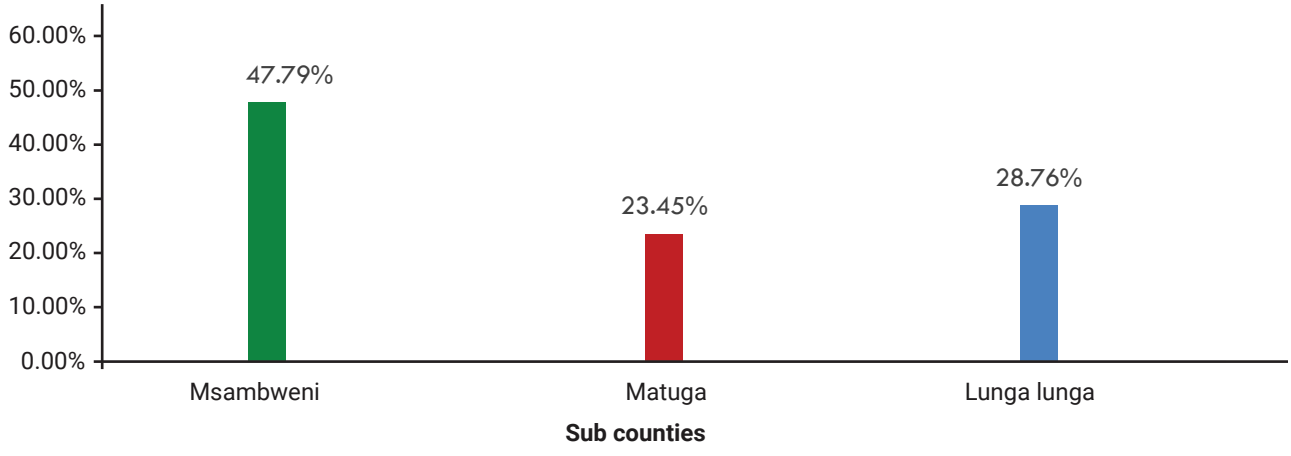
4.1 Descriptive Statistics of Study Population

4.1.1 Demographic and socio-economics characteristics

A total of 452 respondents 130 (28.76%) from Lunga Lunga, 106 (23.45%) from Matuga, and 216 (47.79%) from Msambweni sub-counties were surveyed as shown in the Figure 3 below. The study focused on households in villages near the Indian Ocean, and those directly or indirectly depended marine resources for their livelihoods from the in three sub-counties of Lunga Lunga, Matuga, and Msambweni in Kwale County.

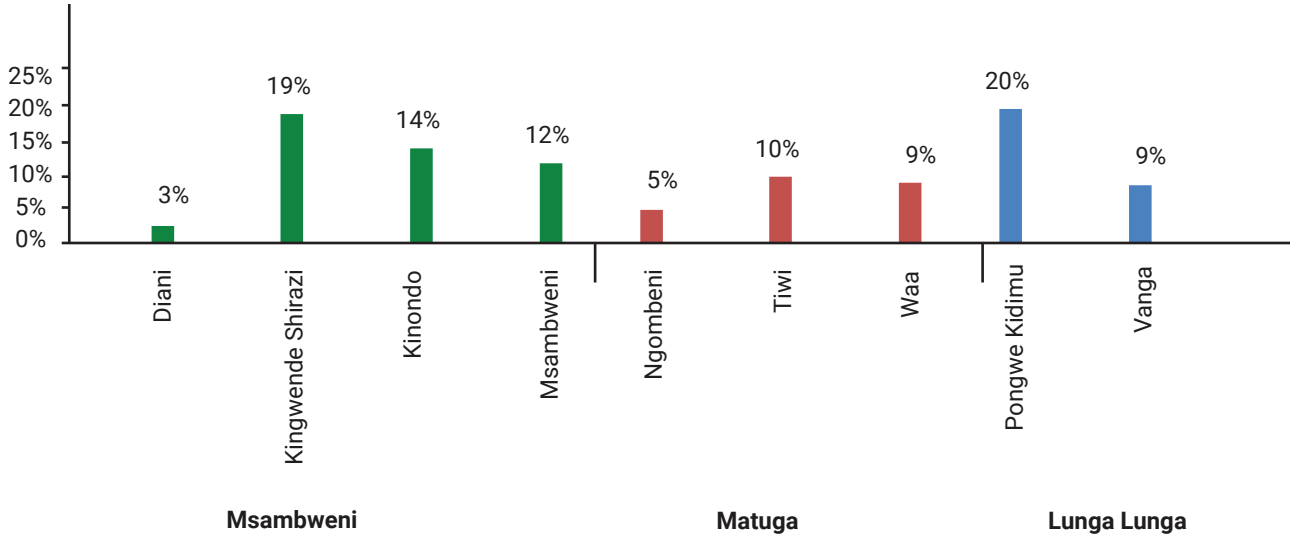
The survey targeted households in nine locations with villages near or bordering the Indian Ocean selected for sampling (See Figure 4). The number of households interviewed depended on the number of households in the randomly sampled villages. Based on the population distribution by location, Pongwe Kidimu location had the highest number of respondents (91) or 20.13% of the total. In comparison, Diani location had the least number of households (12) equivalent to 2.65% of total (Figure 4).

Figure 3: Sub-County sample distribution



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Figure 4: Sample Distribution by Location

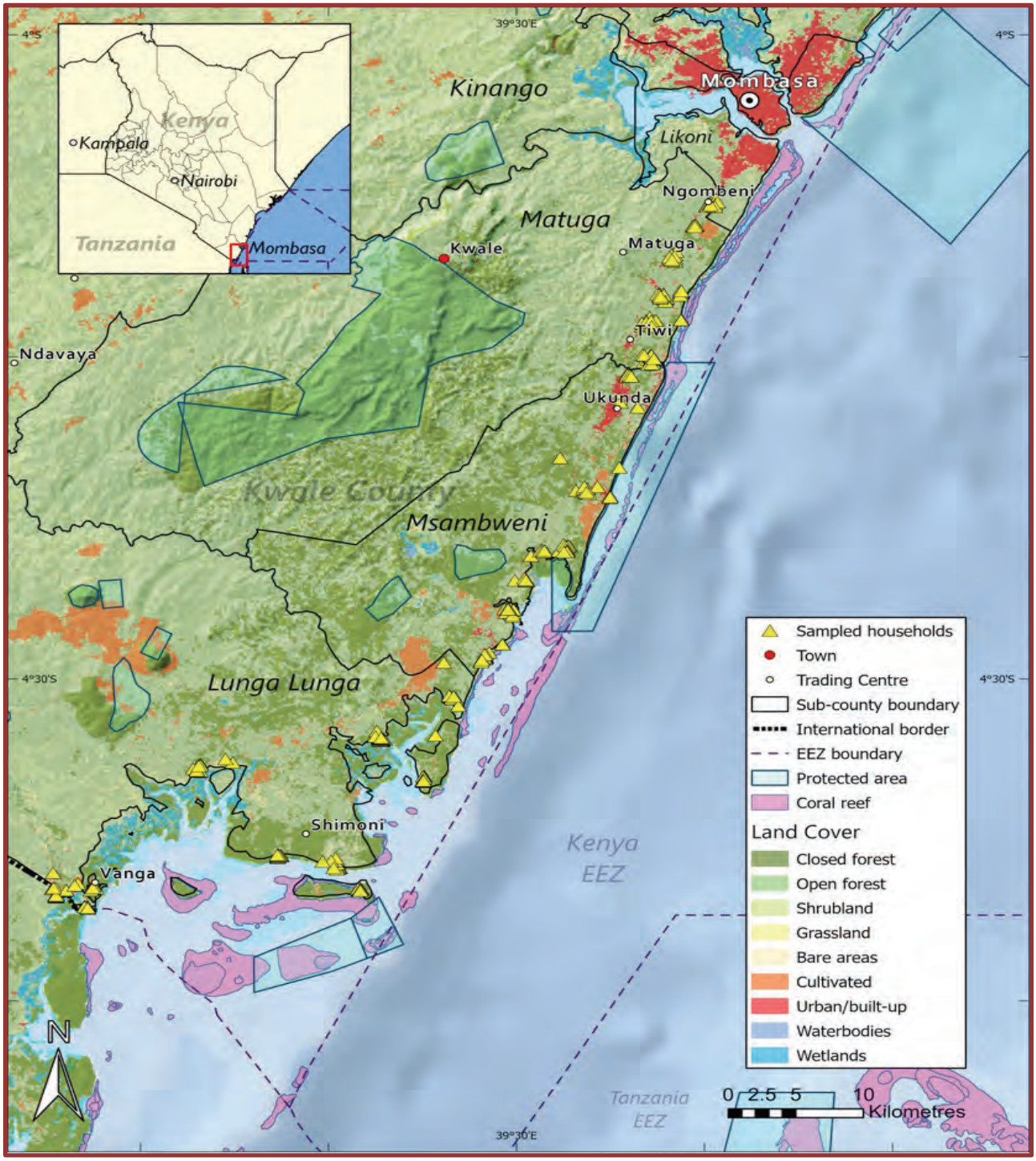


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Figure 5 below is a map study's area, showing the three coastal sub-counties of Matuga, Msambweni and Lunga Lunga. The land cover, location of mangrove forests, coral reefs and marine protected areas are also shown, and the location of households sampled in this study.

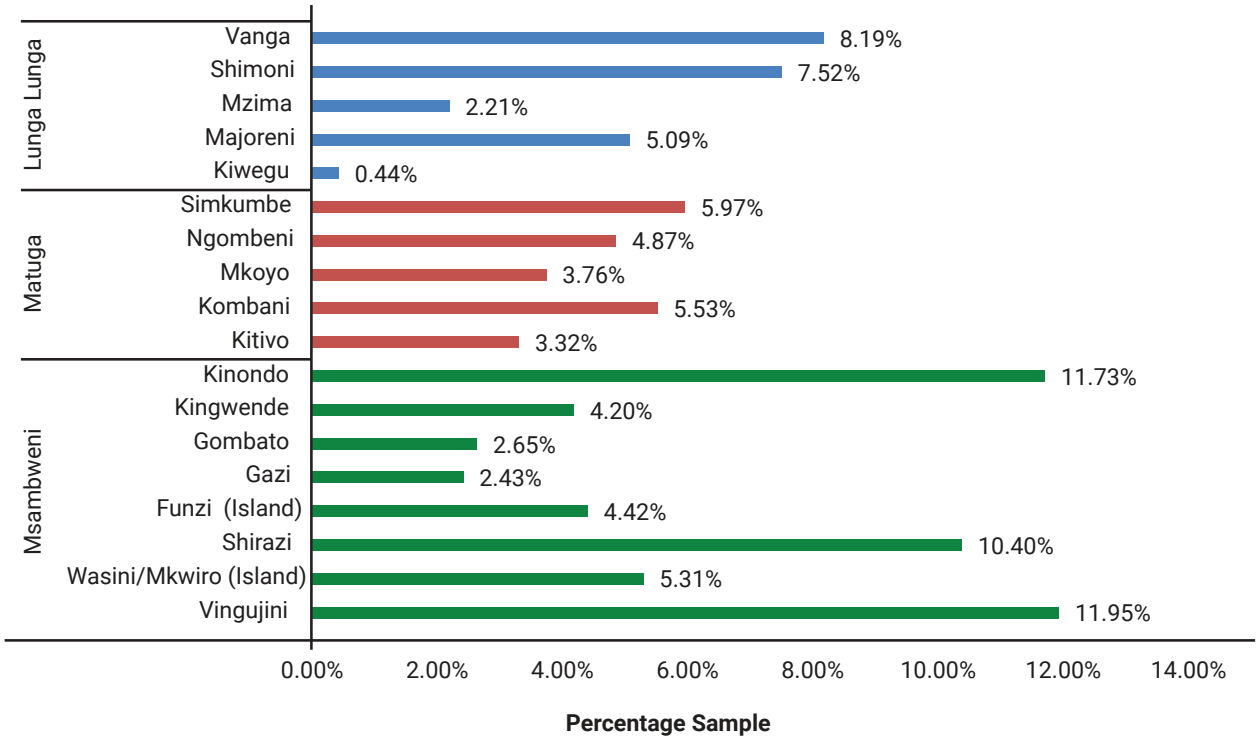
In the nine locations, 18 sub-locations in the mainland and others on islands of Funzi and Wasini/Mkwiro were selected for sampling. Vingujini sub-location had the highest number of households, accounting for 54 (11.95%), while Kiwegu sub-location had the least number of households interviewed, 2 (0.44%) as shown in Figure 6.

Figure 5: Map of sample distribution



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Figure 6: Sample Distribution by sub-location



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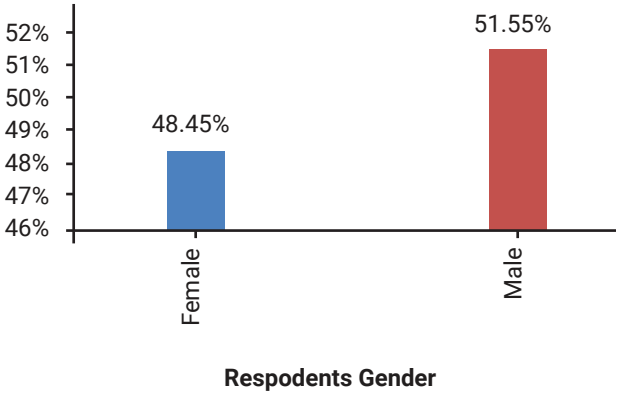
The division of the sample into male and female enabled to discuss extraction and utilization of coastal resources from a gender perspective as envisioned in the study. Thus, the survey targeted views and experiences of both men and women alike. Although many fishers are men, women also participate in fishing, especially inshore fishing, and play a crucial role in subsequent stages of the marine resources value chain such as fish processing.

Therefore, the gender aspect of access to marine resources is key to ensuring equitable sharing of the benefits from marine resources. In this regard, out of the 452 respondents who participated in the survey, 233 (51.55%) were males, while 219 (48.45%) were females, thus reflecting a good balance in representation of both women and men in the sample.



Plate: 6 Fish monger processing fish at the landing site ©UNESCO-IOC

Figure 7: Gender of the Survey Respondents

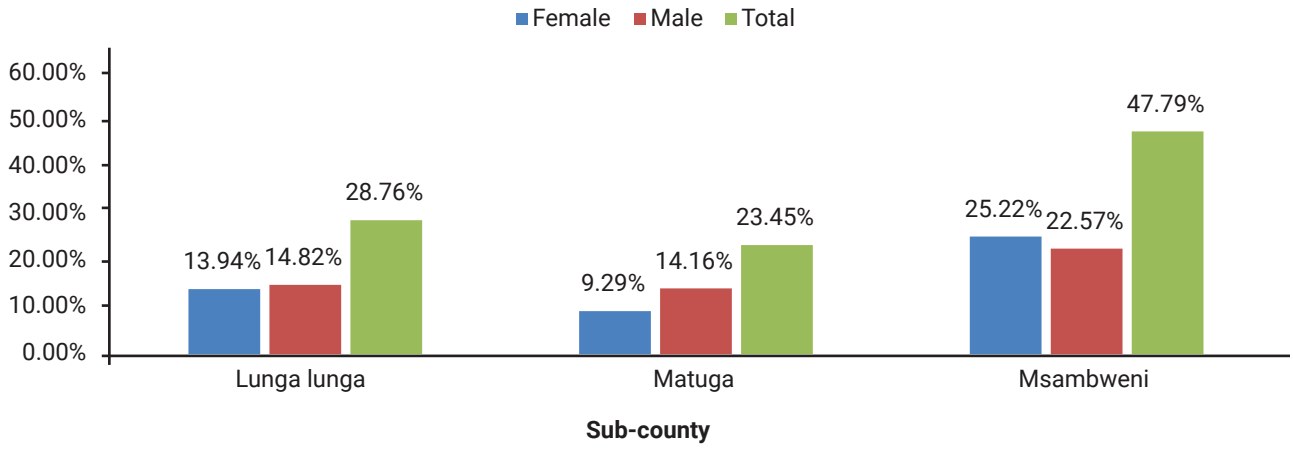


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The distribution of the male and female respondents across the three sub-counties shows that, out of the 28.76% interviewed in Lunga Lunga, 14.82% were males while 13.94 were females; the 23.45% from Matuga constituted 9.29% females and 14.16% males, while in Msambweni sub-county, out of the 47.79% of the households interviewed, 25.22% were women while 22.57% were men. We can therefore conclude that there is no significant disparity between the male and female numbers, and the two gender are fairly represented in each sub-county. Gender analysis as county and sub-county levels is therefore balanced.

Besides the gender of the respondents, we also determined the distribution of households on the gender of the household head. From our analysis, most of the interviewed households were male-headed, 348 (77.16%), with female-headed households accounting for only 103 (22.84%).

Figure 8: Respondents' gender distribution by sub-County

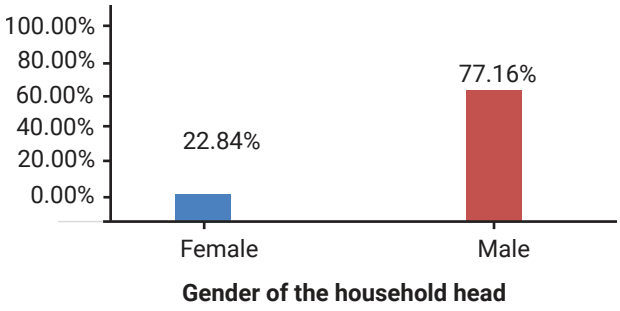


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The domination of the male-headed household is also seen across sub-counties covered by the survey. For example, in Lunga Lunga, female household-headed families account for only 6.87%, while male-headed households account for 21.98% of the 28.82% sampled. In Matuga sub-county, out of the 23.28% sampled households, female-headed and male-headed households accounted for 5.10% and 18.18%, respectively. In contrast, in the Msambweni sub-county, female and male-headed households accounted for 10.86% and 37.03%, respectively out of the 47.89%.

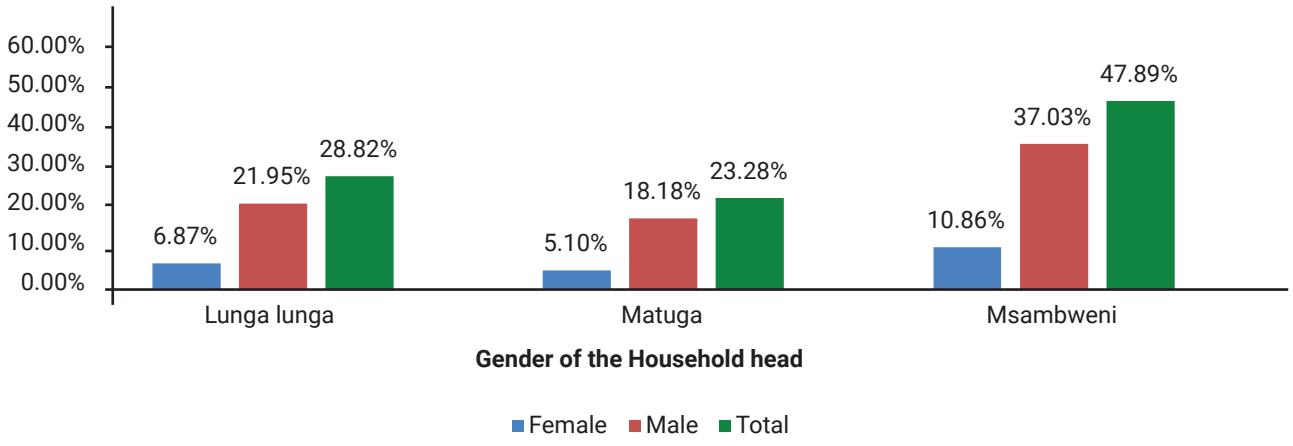
The household head's age distribution showed that the youngest was 19 years old while the oldest was 92 years old. The average household head age was 51, indicating that most heads were in their mid-ages. There was no case of a household head below the legal age in Kenya. A majority (76.17%) of the surveyed household heads were married, while the single (never married) respondents were 23 (5.12%). Those who were either divorced or widowed accounted for 8.46% and 10.24%, respectively.

Figure 9: Gender of the Household head



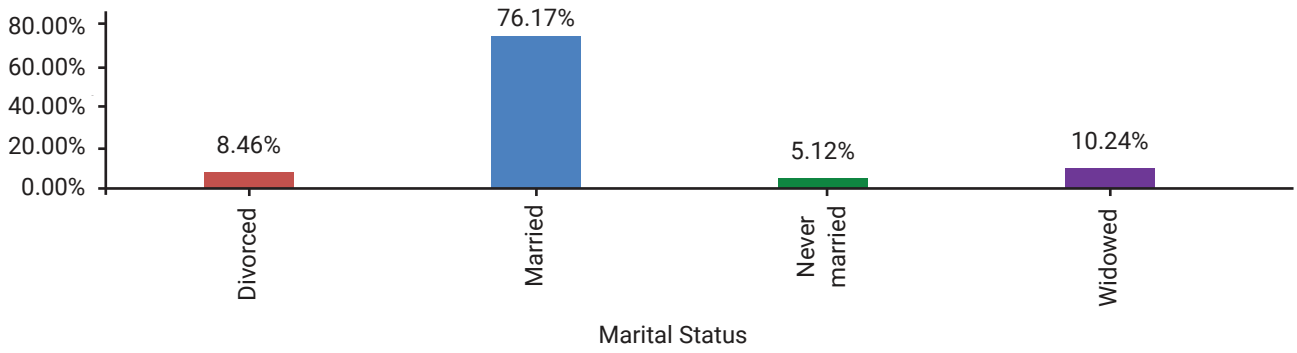
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Figure 10: Gender of the Household by sub-county



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Figure 11: Marital Status of the Household Heads

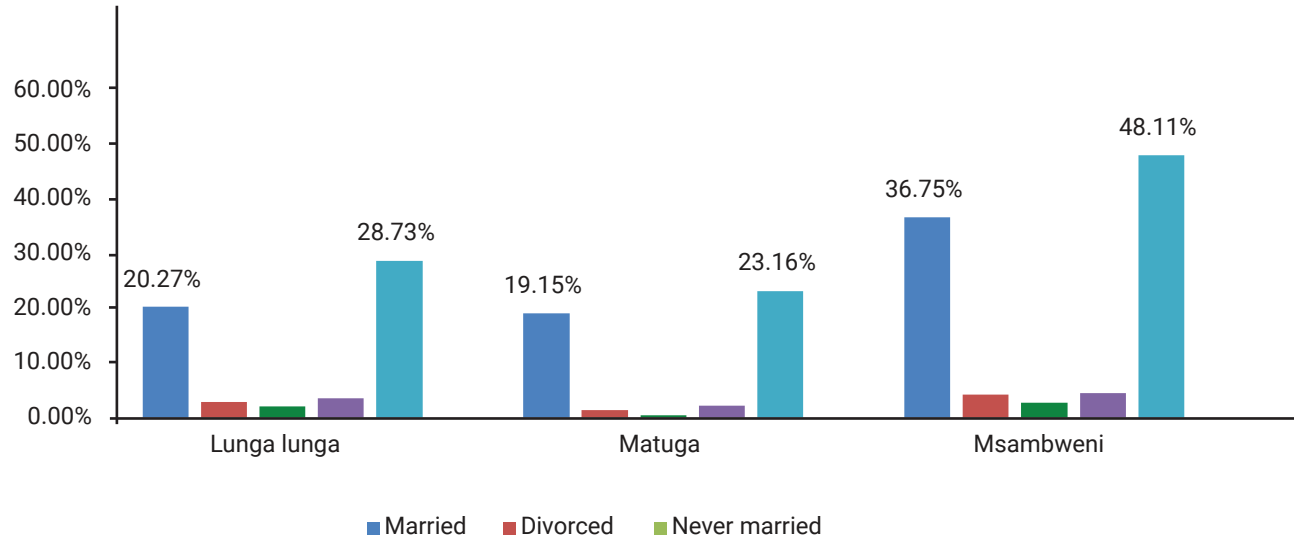


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Marital status distribution across the three sub-counties showed that Msambweni had the highest number of married household heads (36.75%), followed by Lunga Lunga and the Matuga at 20.27% and 19.15%, respectively. This distribution is repeated for the divorced, never married, and widowed categories.

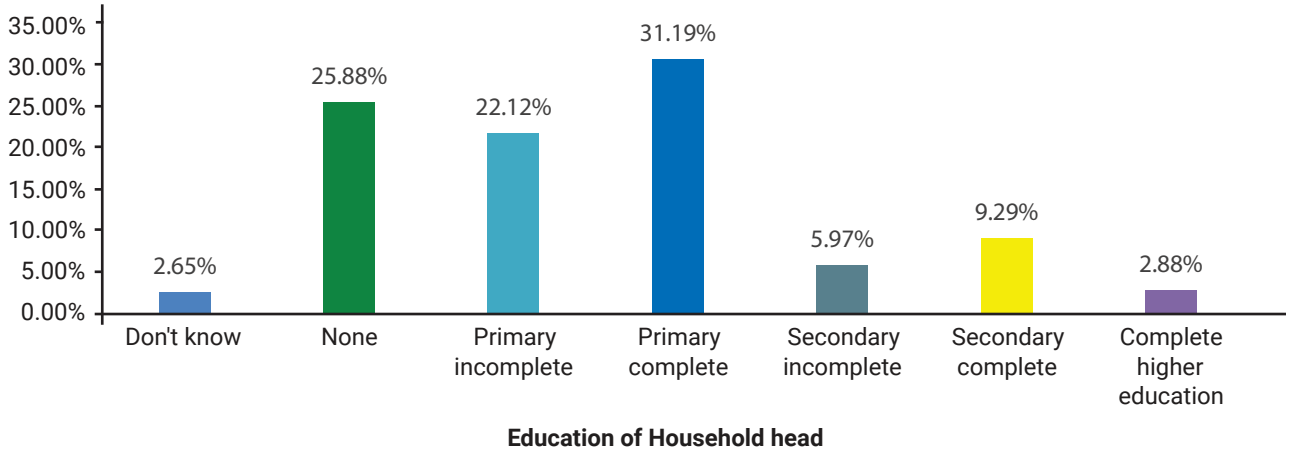
The survey also sought to establish the general level of education, especially for the household heads, by asking the respondents about the highest level of education attained by the heads of the households. The results show most 141 (31.19%) had completed primary education, 117 (25.88%) had not attended any formal schooling, 100 (22.12%) had at least attended primary school but did not complete, while 13 (2.88%) had completed higher/tertiary education. A further 12 (2.65%) did not know the level of education of the household heads in their households.

Figure 12: Household head Marital Status Distribution by sub-county



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Figure 13: Education level of the Household Head



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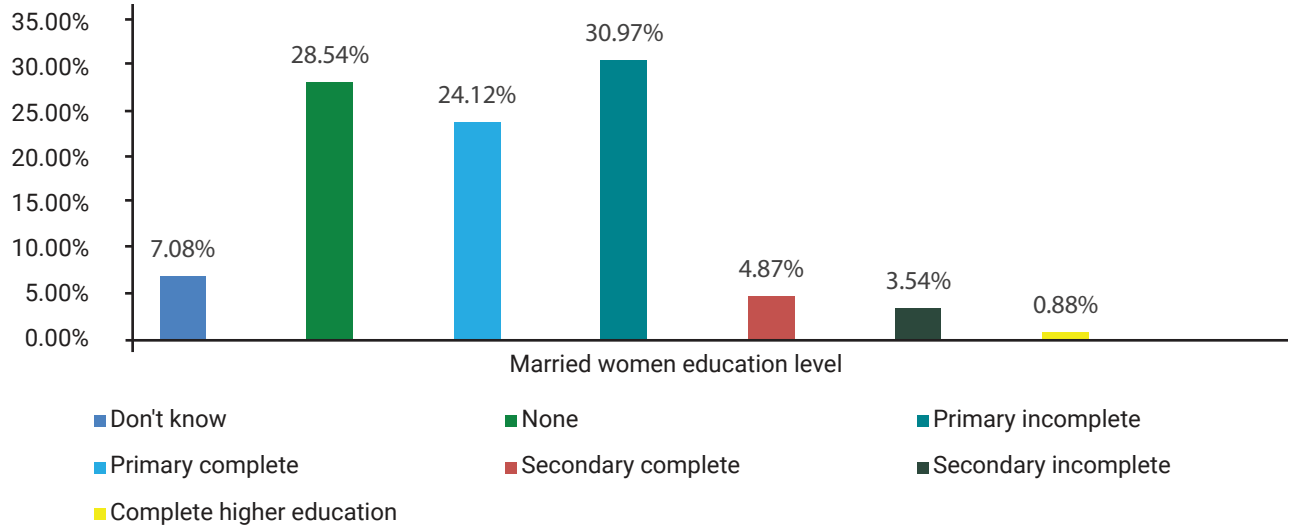
Across the three sub-counties, there were more household heads with incomplete primary education in Msambweni (25.46%) compared to the other sub-counties. The highest level of completed primary education is achieved in Lunga Lunga (35.38%), followed by Msambweni (30.09%) and Matuga (11.32%).

The age of the women (either married or household heads) in the sampled households ranged from 18 to 76 years, with a mean age of 40 years which was lower than that of men (51 years). Decision-making, in some cases involved both women and men in the household. Women's level of education is a key determinant of decision making in the household, and could influence critical decisions such as the number of children, etc. The survey thus sought to establish the general level of education among the married women in the sample. Results show that women who had completed primary education were 140 (30.97%), followed by those who never acquired any formal education at 129 (28.54%), while 109 (24.12%) attended primary but never completed. Only 4 (0.88%) reported having attained higher/ tertiary education, and 32 (7.08%) of respondents reported having no knowledge of the education level of the married women in their households. These figures indicate very low education levels, with over 83% having primary level education and below, or none.

Table 1: Level of education of the household head by sub-County

	Education of household head							
Sub county	Don't know	None	Primary incomplete	Primary complete	Secondary complete	Secondary incomplete	Complete higher education	Total
Lunga Lunga	3.08	30.77	17.69	35.38	7.69	5.38	0.00	100.00
Matuga	1.89	25.47	20.75	28.30	11.32	8.49	3.77	100.00
Msambweni	2.78	23.15	25.46	30.09	9.26	5.09	4.17	100.00
Total	2.65	25.88	22.12	31.19	9.29	5.97	2.88	100.00

Figure 14: Women's education level in households



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Married women education level in the households visited across the three sub-counties shows that about 38% of the sample taken in Lunga Lunga had completed primary education, 28.30% in Matuga, and 28.24% in Msambweni. These figures, however, cannot be compared as the sample sizes varied in the sub-counties. Similarly, most of those that did not attend formal schooling were 32% in Matuga, followed by Lunga Lunga (28%) and then Msambweni (27%).

The average household in the area consisted of over six people, with the smallest household having just one person, and the largest consisting of 28 members. Household size seems to be similar across sub-counties. Religion is closely related to culture. Both affect household decision-making processes and outcomes, e.g., the decision on how many children a household should have and who makes such decisions. In the three sub-counties, Islam is the dominant religion accounting for 444 (98.23%) of the respondents, followed by Protestant Christianity accounting for 7 (1.55%), while only 1 (0.22%) person was none religious/atheist or agnostic.

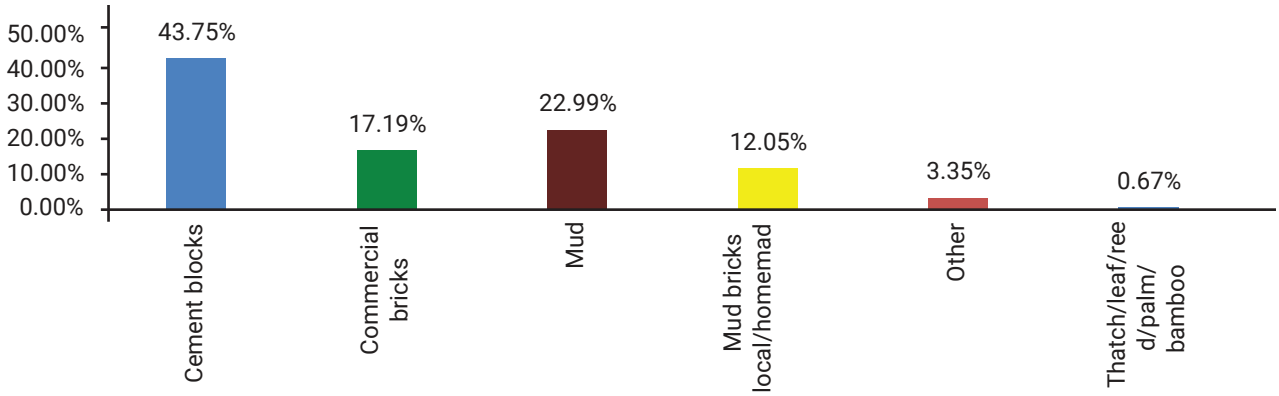
4.1.2 Residence and neighborhood characteristics

On average, the number of years respondents have resided in their respective villages was 36 years, with the newest household having lived there for one year and the oldest 92 years. This indicates that many households are originally from Kwale County, with few having migrated from other areas. This could mean that most of the members of the households

Table 2: Educational level of wives across sub counties

Sub county	Married women education level							
	Don't know	None	Primary incomplete	primary complete	secondary incomplete	secondary complete	complete higher education	Total
Lunga Lunga	4.62	28.46	26.15	37.69	0.77	1.54	0.77	100.00
Matuga	4.72	32.08	19.81	28.30	5.66	7.55	1.89	100.00
Msambweni	9.72	26.85	25.00	28.24	4.17	5.56	0.46	100.00
Total	7.08	28.54	24.12	30.97	3.54	4.87	0.88	100.00

Figure 15: Main house wall material



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understand the dynamics of the area's economic and social activities.

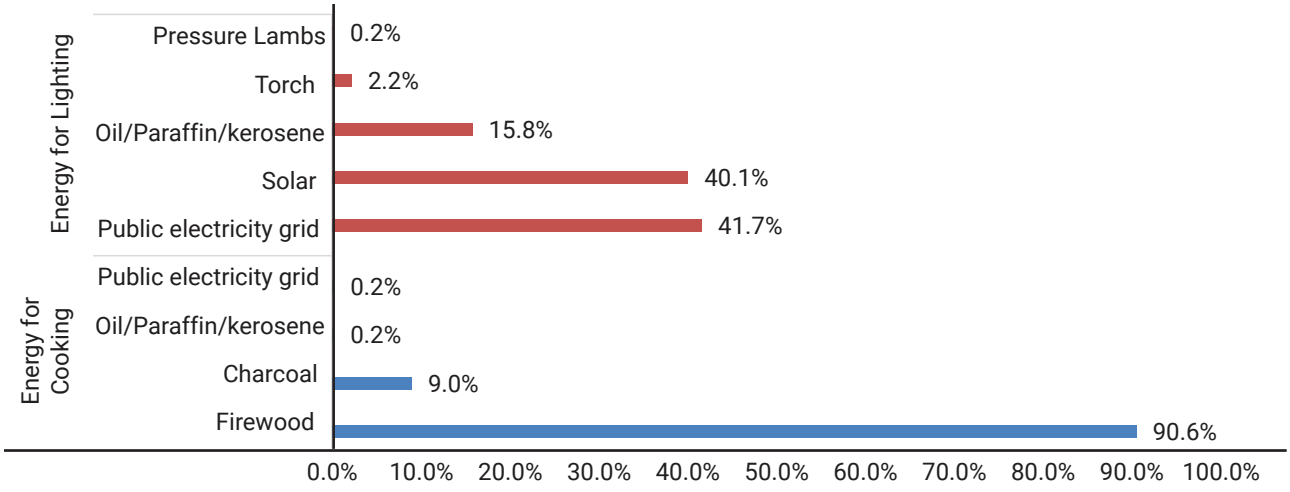
The type of materials used to construct the walls and the roofing could, among other things, be an indicator of households' well-being and status. In Kwale county, most people owned houses made of cement blocks, 196 (43.75%), followed by 103 (22.99%) with mud-walled houses while houses made from commercial bricks were reported in 77 (17.19%) households. Finally, households with walls from homemade mud bricks accounted for 12.05% of the wall building materials among the surveyed households.

Most (53.67%) of the houses used corrugated iron sheets for roofing, while the rest were roofed using plant materials (thatch/leaf/reed/palm/bamboo), majorly palm leaves (Makuti) accounting for (46.33%).

The use of wood biomass for cooking, firewood, and charcoal is prevalent in rural areas, especially for poor households. The use of firewood as the main energy source for cooking was every day in over 90% of the families, followed by charcoal with 9% of users. The two sources accounted for over 99% of household cooking energy. Use of clean energy source has not gained traction among the locals in the three sub-counties as a source of cooking fuel. For lighting, the survey findings indicate that 41.7% of the households used the electricity from the national grid, while 40% of the sampled households used solar. The two are renewable sources of energy for lighting since over 85% of Kenya's electricity is from geothermal and hydro, thus, the area scores highly in adoption and use of renewable energy sources for lighting compared to cooking.

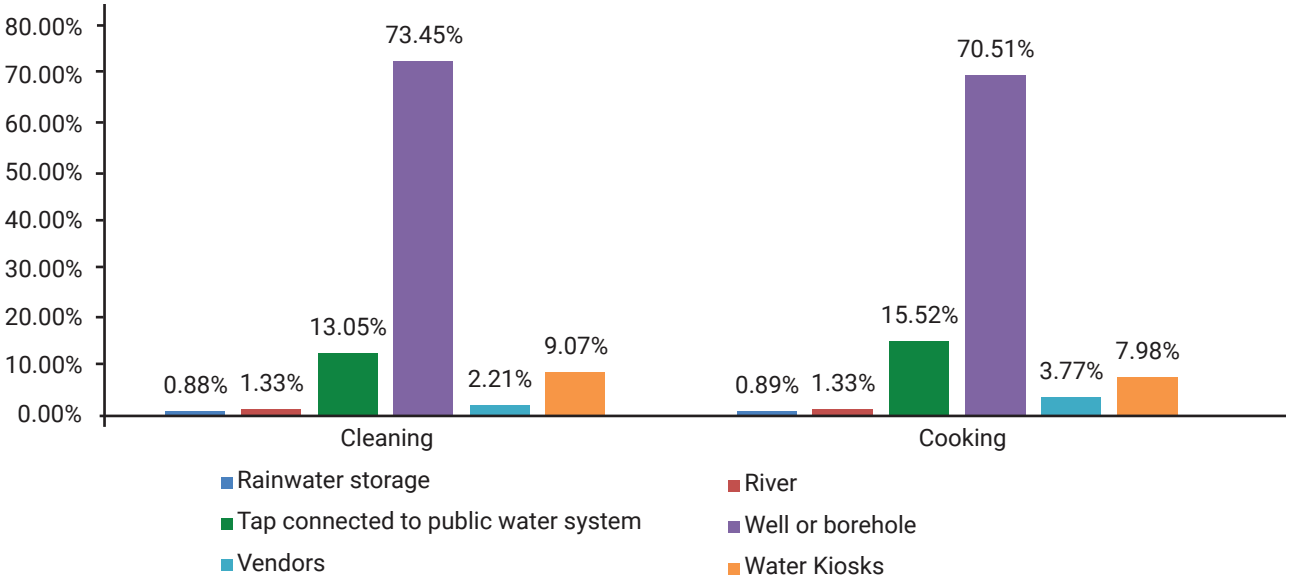
Freshwater resources are scarce in the coastal region as the proximity to the sea affects underground water tables. Saltwater intrusion affects the freshwater aquifers, exacerbating the freshwater scarcity. The survey results show that a majority of the households i.e., 73.45% and 70.51% use well or borehole water for cleaning and cooking, respectively. The second important source of cooking and cleaning water is tap water from a public access accounting for 13.05% and 15.52% for cleaning and cooking, respectively. Rainwater storage is the least used water source for cleaning and cooking, accounting for less than 1% in each category.

Figure 16: Main Sources of Cooking and Lighting Energy



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Figure 17: Main sources of water for cleaning and cooking (

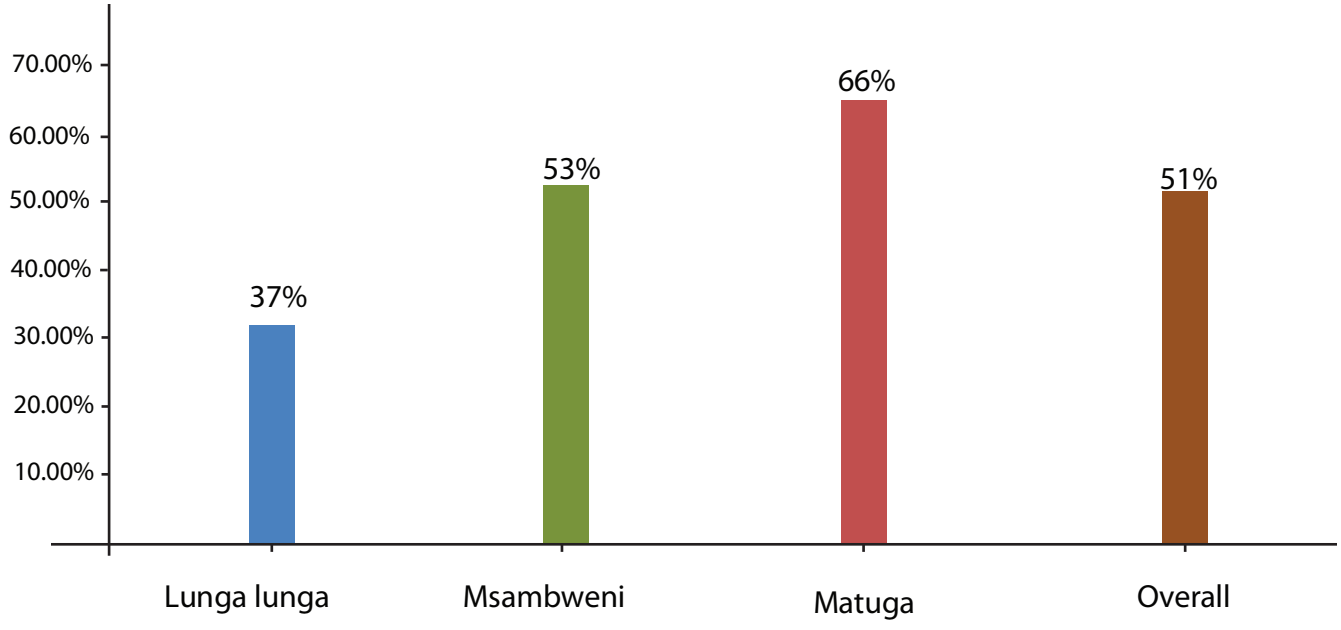


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4.2 How and why are communities Poor?

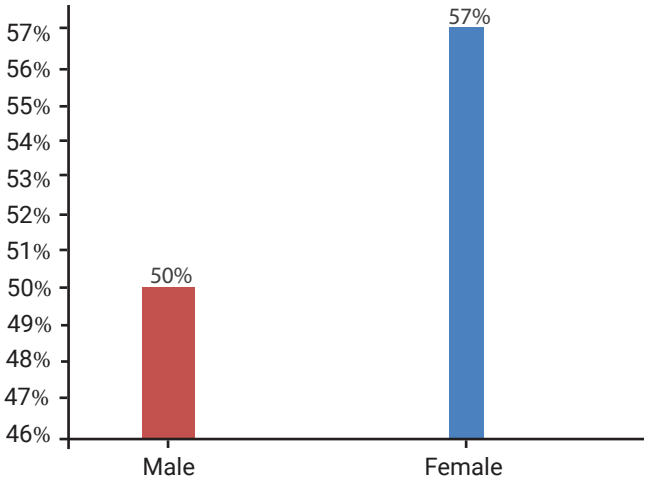
According the Sida MDPA framework, the first question to answer is, who is poor, and how and why are they poor? This question will consider both men and women but can also disaggregate the two. First however, it is important to highlight the poverty levels in Kwale county. One of the questions we paused to the respondents was their monthly level of income, followed by a similar one on their expenditure patterns. The aim was to establish their annual income directly from stated amounts, or indirectly by summing their expenditures. These would then be used to estimate the population below the poverty line. Results in Figure 18 and 19 show the poverty rates across sub-counties, and for men and women. The overall poverty rate was estimated at 51%, slightly above the 45% reported in Kwale County CIDP. Matuga sub-county reported the highest poverty rate of 66%, Msambweni had 53%, while Lunga Lunga had the least i.e. 37%. The

Figure 18: Poverty rates across sub counties



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Figure 19: Poverty rates for men and women in all sub counties



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poverty rate was decomposed between males and females, and results show that 56% of the females were poor compared to 50% of men. It was answered by considering access to resources, power and voice, opportunity and choice, and human security.

4.2.1 Access to Resources

The shared resources available in Kwale County include: a) marine resources e.g., open waters, beaches, corals, seagrasses, and mangroves; and, b) coastal resources, e.g., farmlands, forests, settlements, minerals, urban areas, etc. The common economic activities in the county include formal employment, tourism, fishing and fisheries related activities, crop and animal farming, small and peasantry trade, and conservation, among others. These resources and economic activities, alongside other determinants of poverty as described in the Sida MDPA framework have influenced the evolution of poverty and gender roles, which are critical for proposed marine spatial planning activities in the county. This section describes the different livelihood and income activities and their probable path of evolution in after introduction of MSP.

In Gazi sub-location, the main economic activities for men are fish mongering or trading; maize, cassava, and pineapple farming; mangrove conservation for carbon credits; while some households members are formally employed by Base Titanium Company. The main economic activities for women are shrimp sourcing, mangrove conservation for carbon credit, seaweed farming, ecotourism through boardwalks, farming of cassava, maize, coconut, and mangoes, and keeping of cows and goats.



Plate: 7 Mangrove conservation efforts in Vanga village ©UNESCO-IOC

In Makongeni sub-location, the main economic activities for men are fishing, farming, petty trading e.g., selling farm produce, operating village shops/ kiosks, quarrying, transportation using motorcycles (bodaboda), and cutting mangroves (when bans are lifted). The women in this area are involved in fish mongering, selling firewood, selling tree seedlings, and fish farming (in mariculture ponds). In Chale sub-location, men harvest mangroves (when bans are lifted), operate stone quarries, farm coconut, bananas, maize, and cashew nuts. They are also involved in tour guiding and fishing. Women in Chale are engaged in making makuti (palm leaves), farming coconut, bananas, pawpaw, collecting of firewood, and operating small businesses such as selling samosa. In Kibuyuni sub-location, both men and women are involved in seaweed farming; farming of maize, bananas, cowpeas; keeping of livestock e.g., goats and chicken; and operating small businesses e.g., selling fried fish and chapati.

In Shimoni sub-location, men are involved in fishing, operating boats, selling fish, farming of cassava, bananas, watermelon, and papaya, brokering fish, renting houses and tourism. They also offer transport services using bodaboda or other means. The women in this sub-location are involved in fishing, tourism, small businesses e.g., operating small hotels, transport services to Zanzibar, fish frying and farming of tomato, kales, traditional vegetables, and offering laundry services.

In Vanga sub-location, men are involved in beekeeping, planting woodlots (e.g., Casuarina and Blue gum), and farming of sorghum, bananas, maize, beans, and tomatoes; while women fry and boil sardines, farm food crops, and are involved in fish trading/dealing. In Tiwi sub-location, men are engaged in carpentry, masonry, fishing, small scale farming of maize, cassava, and fish trading. The women in the area do coconut farming, fruit farming e.g., mangoes and cashew nuts and fishing. In Bigamtaginzeni sub-location, the women are involved in tailoring, making makuti from coconut tree leaves, tourism, selling clothes at the beach, tattooing tourists, midwifing, fish frying, and other small businesses.

The discussion shows that all the communities in sampled sub-locations are heavily dependent on natural resources, and economic activities connected to the marine ecosystem for their livelihoods. The state of these resources was dwindling due to extensive harvests according to some communities, while others thought their availability had fluctuated over time. Some other communities indicated that resources were being depleted due to changing climatic patterns, unsustainable fishing e.g., use of ring nets, ineffective enforcement of restrictions, cutting down of trees along the river to pave way for farming etc., while other communities indicated that fishing was improving in their respective areas. The communities also indicated that they do not pay any money to access the resources, as the access was open and accessible. In some cases, however, the communities said that the access to the resources was governed by laws and regulations such as fishing regulations.

Since the property rights to access of resources are more of open access in nature and accessible, their dependence has increased over time and has even attracted other users from outside of the communities. The community in Gazi, for instance, reported that their fishing resources even attracted people from Pemba Island, which had increased

their exploitation. There is also no discrimination of access and utilization of resources in all areas of Kwale, although some respondents reported that men were more industrious than women and had a significantly bigger share of the resources. With the increase in population and family sizes in the region as shown in the household survey, it is expected that exploitation of the resources will increase in future.

The utilization of resources to earn a livelihood varied in different communities with men in Gazi sub-location using the mangroves to access carbon credit financing through conservation while the women sold fish for an income. In Makongeni, both men and women sold fish and farm crops and livestock for income. In Chale, Kibuyuni, and Shimoni, land is used for crop farming, seaweed farming, mining of construction stones etc.

In absence of the marine and coastal resources, the communities indicated that they would seek alternative sources of incomes such as farming, investment e.g., in table banking/Merry-go-round, small businesses, planting of trees, bodaboda business, apiculture within mangroves, mariculture, irrigation farming, livestock and poultry farming, migration to other areas, and goat farming etc.

To ensure sustainability of marine and coastal resources and ensure posterity for future generations, the communities indicated that they would continue planting mangroves for the benefits they get through carbon financing/trading; create awareness on importance of these resources to their children; develop partnerships with different resource user groups in resources conservation e.g., BMUs, Mikoko Pamoja Project, Base Titanium Company; and engage government agencies and private organizations (NGOs) in conservation. They also indicated the need to avoid pollution of the resources, investing in security of resources by employing rangers, shunning away from the use of unsustainable resource exploitation, for instance, fishing gears e.g., spearguns; and having a community conserved area. Other interventions include regulating unsustainable fishing methods, restoring coral in Shimoni, Wasini, Mkwiro, and diversification into mariculture.

The communities also revealed that they were working with government agencies, NGOs and private sector to conserve the environment. These organizations include WWF, KEFRI, KMFRI, KWS, Kenya Forest Service (KFS), County government of Kwale, Base Titanium Company, Kiscol, CORDIO, the Kenya Navy, Coast guard, UNDP, Nature Conservancy, community forest associations (CFAs), State Department for Fisheries, Aquaculture and The Blue Economy, FAO, Plan international, RECOMAP, etc. Others are COMRED, REEFolution, The Kenya Police (Shimoni), County Fisheries, Kesho Kenya, Collaborative Center for Gender Development (CCGD), The Hijab mentorship, KOMAZA, Blue marine etc.

The efforts of the government in conservation regulation of resources access were lauded by the community members. Some of the highlighted government conservation interventions included: enforcement of the gazettement of Diani waters as a marine park; provision of motorized boats for offshore/deep sea fishing; building community resilience towards climate change; regulating unsustainable fishing methods e.g., use of spearguns; and ensuring each BMU had a police force. Other government initiatives were the blue economy initiative which is expected to provide means to access offshore fishing, a port, cement factory in Kibuyuni, plastic recycling company, oil, and gas mining; and provision of alternative means to relieve pressure on ocean resources e.g., boreholes for irrigation farming.

The communities were also asked on the development changes they want to see in the area to enhance availability of the resources. Men in Gazi sublocation wanted to see more awareness creation on the importance and use of resources, increase in livestock grazing areas, reviving historic site at Gazi, and the benefit resource sharing model that ensured those near the resource benefit more. The women in the area wanted an increase in acreage under Mikoko Pamoja project, revival of their shrine by Kenya National Museums, and increased in beehives and seaweed farming. In Makongeni sub-location, both men and women wanted more cooperation among community members in reviving collapsed income generating projects e.g., mariculture, and a reduced theft of fishing gears. In Chale sub-location, men wanted access of motorized boats to explore offshore fisheries, while women wanted Kenya Wildlife Service (KWS) to control animals feeding on their crops.

In Kibuyuni sub-location, men wanted the steel making industry to either conduct its activities in a sustainable way or cease operation; the County government of Kwale to deliver on motorized boats to enable offshore fishing; availing of seaweed seeds and a permanent market for seaweed and its products; increased investment in education; increased awareness to the youth about seaweed farming; and enhanced awareness and funding for mangrove conservation. The women in the area indicated that they needed to see protection of their resources e.g., mangrove nurseries and increased awareness by government and partner organizations about the community resources.

In Shimoni sublocation, the men wanted to see enforcement of regulations and every resource user getting his or her right without discrimination; and public/stakeholder engagement to ensure the community is involved in decision making and their views taken seriously. The women said that they wanted cooperation among community members in resource conservation e.g., planting of mangroves; involvement of their community by government and other partner organizations in making decisions that involved their resources; increased awareness of importance and utilization of resources by the government and partner organizations; extension of community conservation area; and a boost to seaweed farming.

In Vanga sub-location, men expressed the need to have a patrol boat for offshore monitoring and rescue operations, while women expressed the need to improve bee keeping initiative; the government to support sorghum farming, an increased awareness creation on mangroves planting; and stakeholder engagement to ensure communities are involved in government's decision making on matters concerning their resources.

4.2.1.1 Employment and Income

There are various sources of income for households in Kwale County, including employment. Most (58%) households in the County had no income from formal or informal employment. In the sub-counties, households that reported an income from employment, formal or informal, were 15%, 67% and 45% in Lunga Lunga, Matuga and Msambweni, respectively, with the average monthly household income from this source being Ksh. 16,677 (USD 146.87[1]) in Matuga, Ksh. 16,128 (USD 142.03) in Lunga Lunga, and Ksh. 12,847 (USD 113.14) in Msambweni.

In Lunga Lunga sub-county, fishing is the critical source of income and contributes to 44% of the total monthly income, followed by employment (26%) and farming (25%). In the Matuga sub-county, employment contributed an average of 54% of households' income followed by fishing (22%) and farming (20%). Pensions and remittances contributed less than 1% and around 3% of the household income, respectively in the sub-county.

In the Msambweni sub-county, employment contributed 42% of mean household monthly income, followed by fishing (38%) and farming (14%). Remittances contributed about 4%, while pensions and welfare did not contribute any significant income to the resident. There does not seem to be a difference between female and male headed households on income from the different sources. In both households, income from employment contributed approximately 43% to 46% of monthly income followed by 32% from fishing for both households, while the proportion of farming to total income was slightly higher for female headed households (19.5%) compared to male headed households (16.9%).

Although employment is an integral part of household income, the residents in Kwale County also engage in many other activities that also contribute to their livelihoods as hereunder discussed.

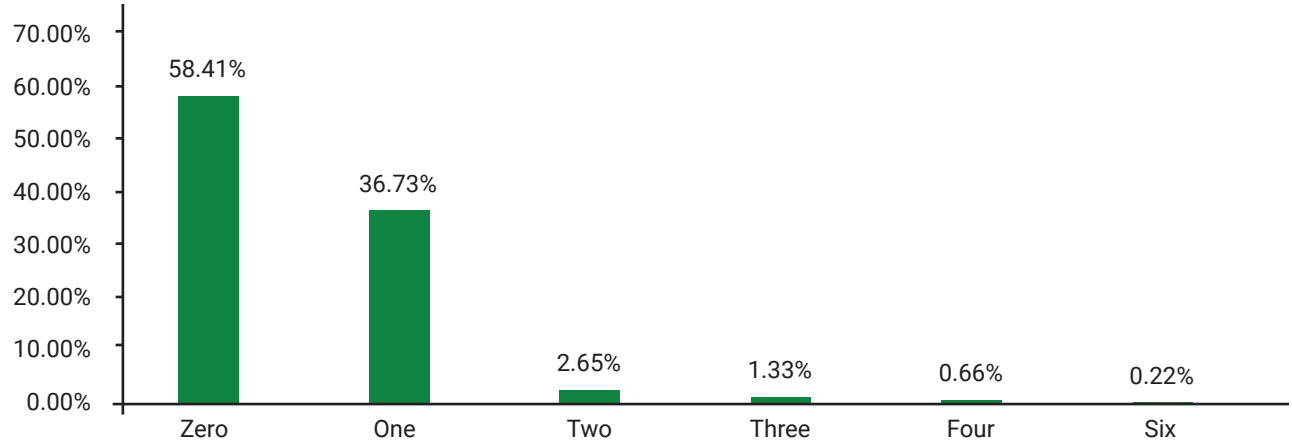
4.2.1.2 Fish harvesting and trading

i. Offshore Fishing

Fishing in the region is either done nearshore or offshore and depends on the seasons. Both types of fishing are done mainly by men. Out of the total household sample of 452 households, 58.41% of respondents indicated that no man in their household went offshore fishing in the last 12 months, 36.73% reported that only a single man from their household went out to the sea for fishing, while 2.66% indicated that two men engaged in a sea boat fishing in the last 12 months. A further 2.21% said that three or

1 Exchange rate as at December 2021, 1 USD =Ksh 113.55)

Figure 20: Men who went boat fishing in past 12 Months



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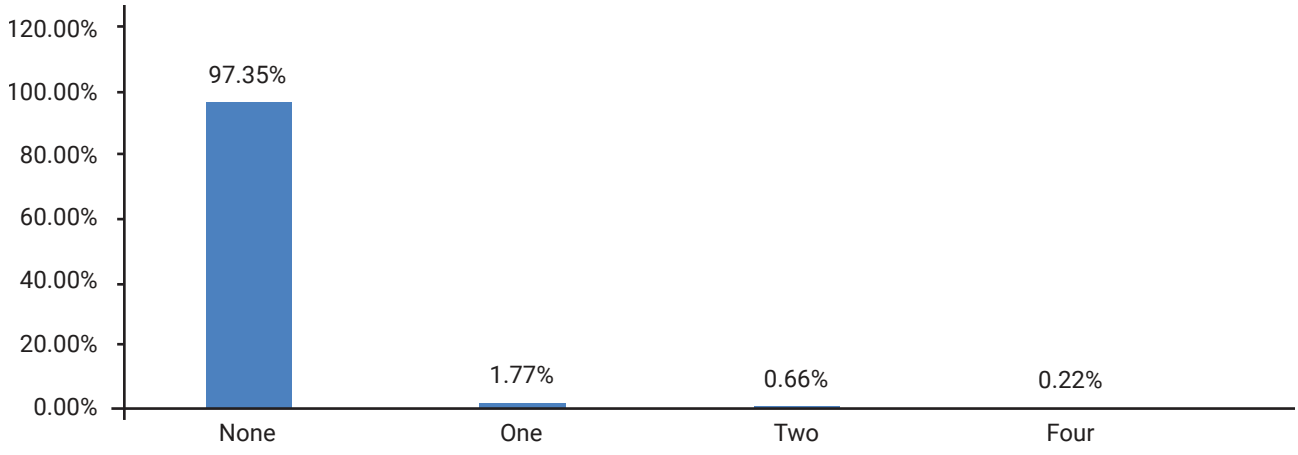
more men from their household ventured out to sea with boats for fishing. This shows that not all coastal communities depend on fishing as their main source of livelihood. Households in the region also depend heavily on fish as a source of food security, either through fishing or purchase from fish vendors.

Offshore fishing is predominantly a male affair in Kwale County. Results show that over 97% of the households did not have a single woman engaging in offshore fishery using boats, while less than 3% of the households reported that a woman was engaged in offshore fishing over the last year. This could be largely attributed to the culture in the region which has ascribed the role of fishing and other hard manual work to men, while women are largely homemakers.

Most of the sampled households (69.27%) with members venturing in the sea for offshore fishing reported that they concentrated in areas not far from their villages, with 18.23% reportedly venturing further to the north of their village, while 9% ventured further to the south of their villages.

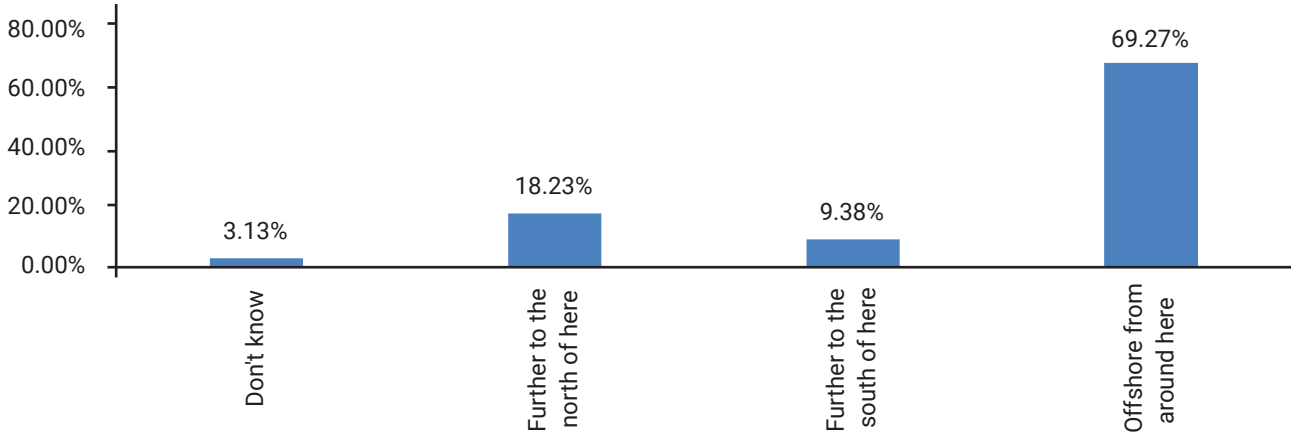
A comparison across the three sub-counties shows that most offshore fishing was in areas around the villages in all the three sub-counties, with Lunga Lunga sub-county having more people fishing further offshore towards the South and North off their villages. In Msambweni, most people fish offshore from their villages. In Matuga, a large percentage of people (37.5%) fish further to the north of their village. The popular offshore fishing areas for most

Figure 21: Women engaged in offshore fishing in last 12 Months



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Figure 22: Areas of Offshore Fishing



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fisherfolk (63.54%) was in the open sea, with 21.88% preferred fishing around the reefs, while 12.50% fished offshore but around islands.

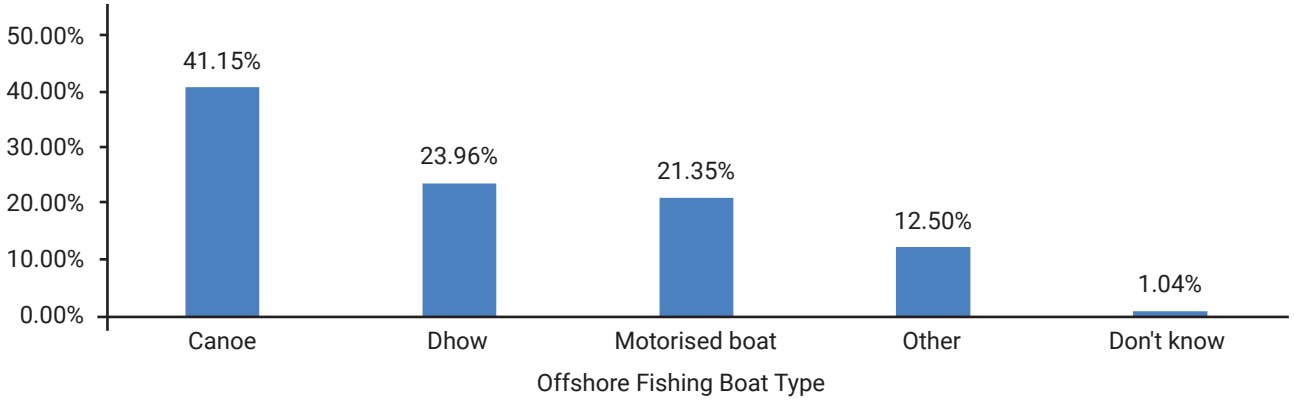
ii. Fishing vessels

The distance that fisherfolk ventured into the offshore depended partly on the type of boat used. Based on the survey results, the most (41.15%) of the sampled 192 offshore fisherfolk used canoes, 23.96% used dhows, and 21.35% used motorized boats. A further 12.50% employed other types of boats to venture into the sea.

The distribution of the type of boats used by offshore fisherfolk across the three sub-counties shows that canoes and dhows are popular in Msambweni and Lunga Lunga, respectively.

Motorized boats fore used by 40% of the total (192) households using boats in the three sub-counties, and are used for offshore fishing, with most of the offshore fishing done in Lunga Lunga and Msambweni sub-counties. Most (66.15%) of the boats used by offshore fisherfolk are owned by third parties. These fisherfolk hire the boats at a fee that they must pay to the owners either in cash or in kind using their catch after fishing. Households that

Figure 23: Offshore fishing boat type



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Plate: 8 Traditional and motorized boats at the villages ©UNESCO-IOC

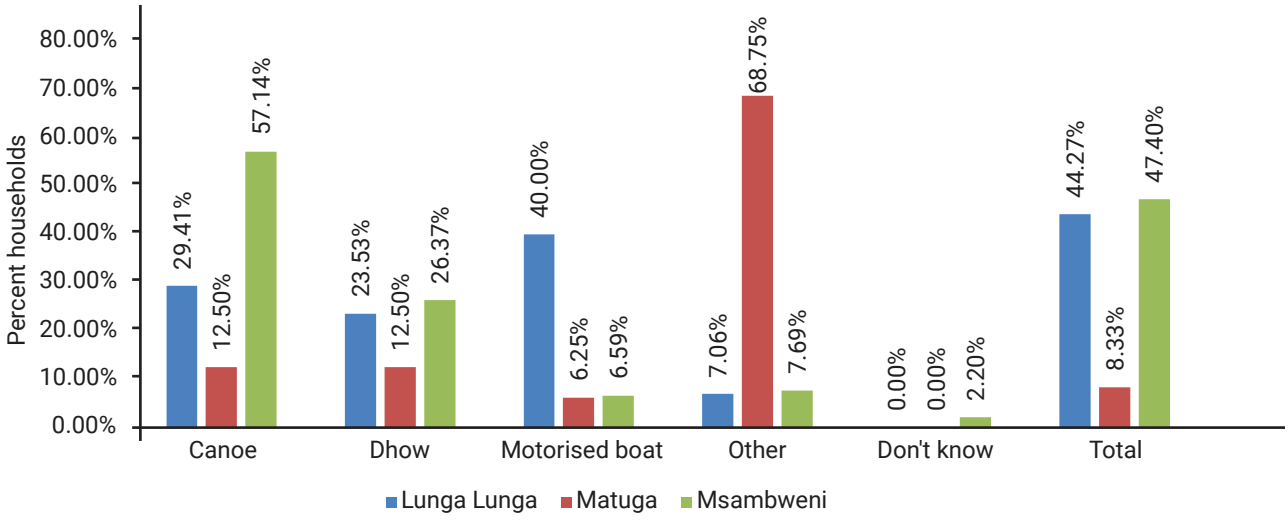
owned a boat comprised 28.13%, while 5.73% had shared ownership. More households in Lunga Lunga (34.12%) own their boats compared to Msambweni (25.27%) and Matuga (12.5%).

The respondents from the 192 fishing households were asked to state the first choice of fish caught by offshore fishers. Results indicate that the first choice for a third of the fishing households (32.29%) was primarily small pelagic followed by large pelagic as stated by 29.69% of the respondents, while demersal fish were first choice for 27.08% of the respondents.

The second popular choice of catch by offshore fisherfolk was small pelagics as reported by 44.27% of the fishers, demersal fish by 25%, and large pelagics by 18.75% of the fishing households.

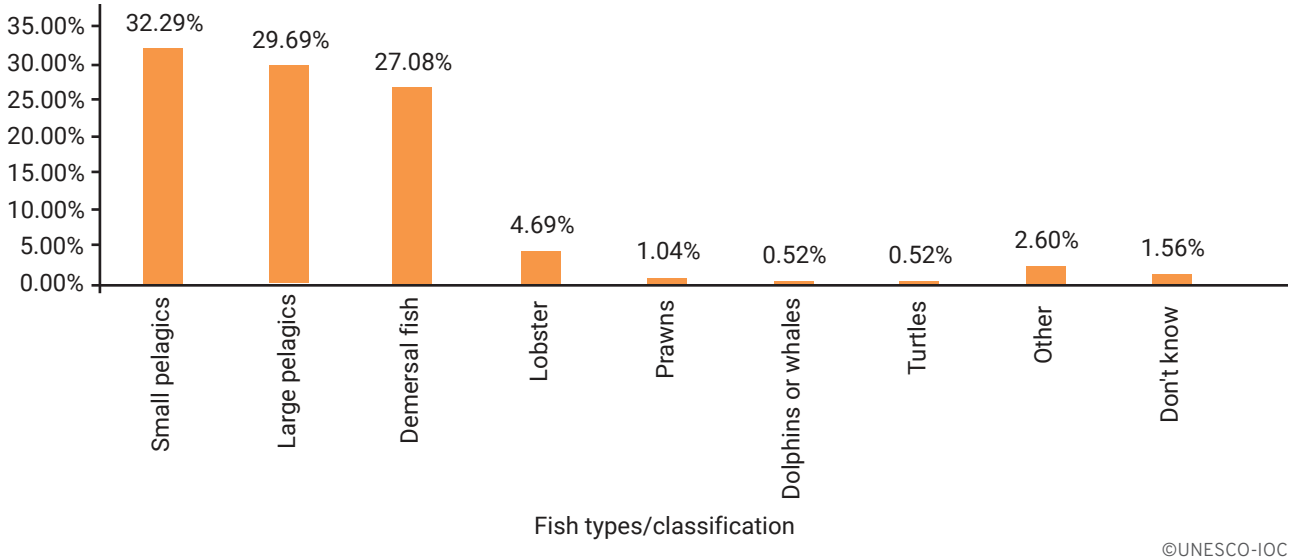
The third popular choice from offshore fishing were demersals and small pelagics as reported by 23.44% of the households followed by large pelagics (19.27%), lobsters (11.46%), and others.

Figure 24: Type of boats used for offshore Fishing



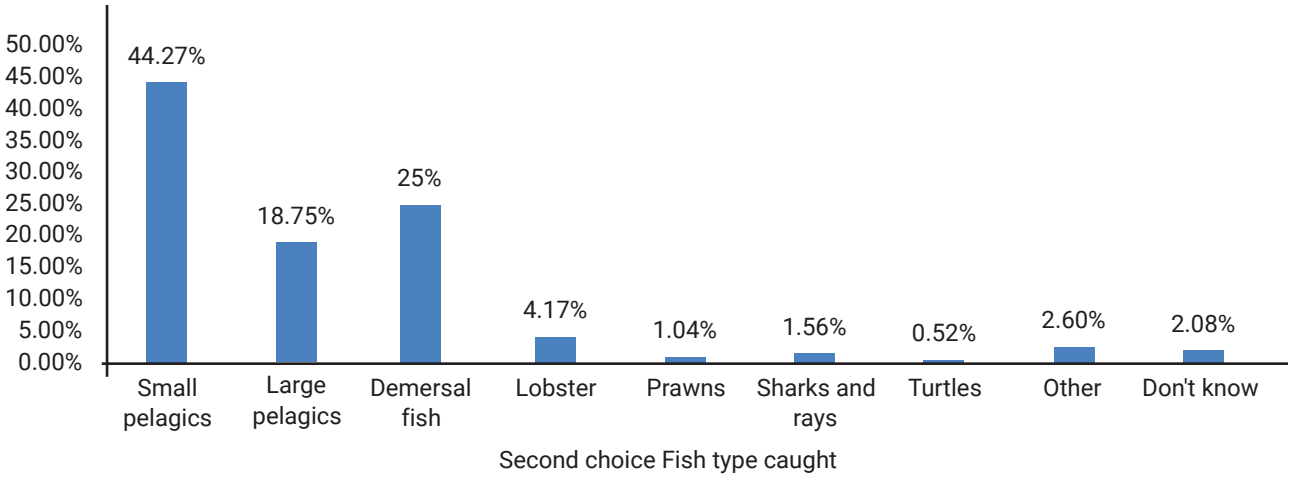
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Figure 25:The first choice of fish caught offshore



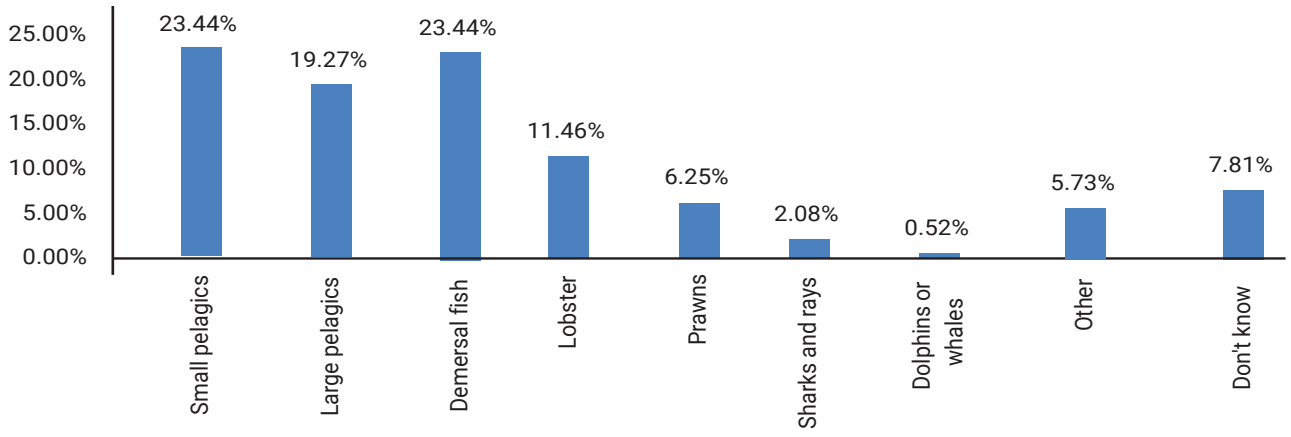
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Figure 26: The second choice of fish caught offshore



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Figure 27: The third choice of fish caught offshore



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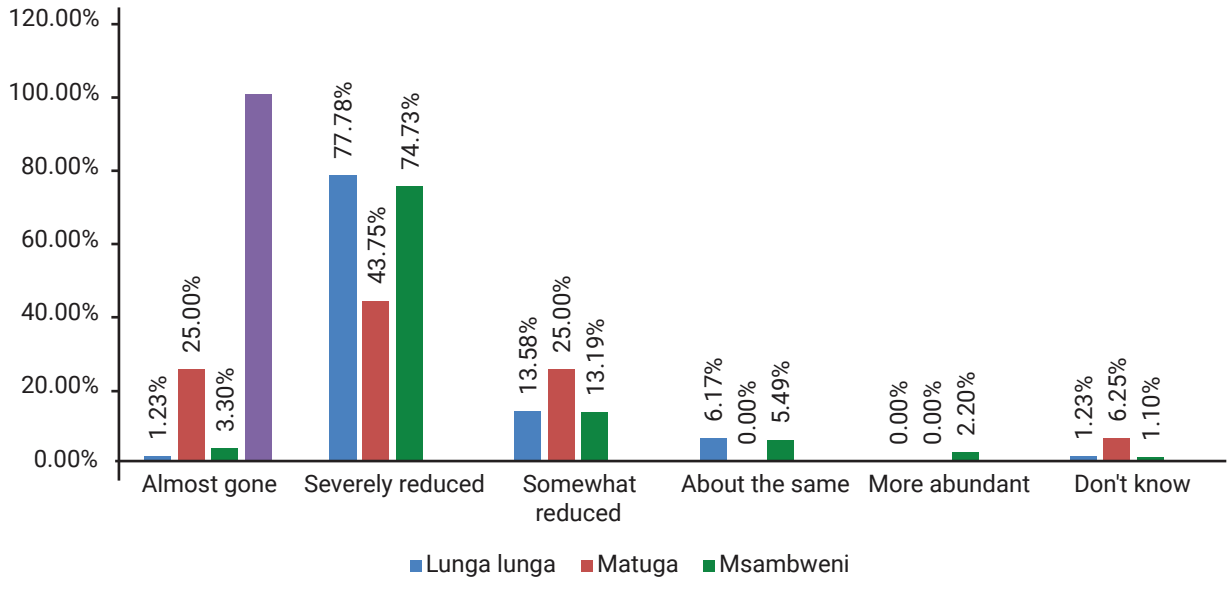


Plate: 9 Drying of anchovies in Vanga- Jimbo ©UNESCO-IOC

Offshore fishing is done predominantly for sale as reported by 96% of the fishing households in Lunga Lunga and Msambweni sub-counties, with only 4.17% consuming it at home in both sub-counties. In Matuga sub-county, however, 25% of respondents reported that their catch is for household consumption.

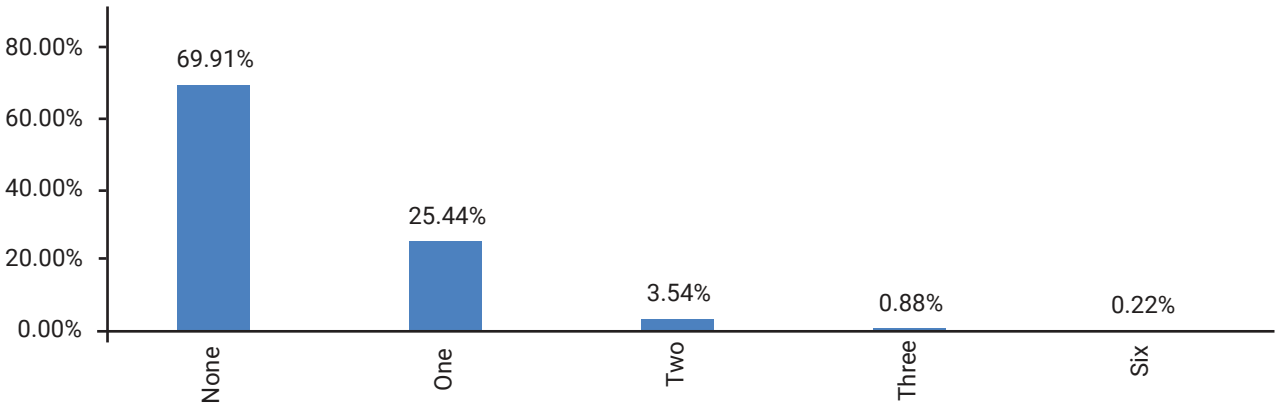
The average monthly income from offshore fishing for interviewed households was Ksh. 25,166 (about US$ 222), while the mean annual offshore income was Ksh. 279,427 (about US$ 2,460). The offshore yearly household income is a combination of two fishing seasons, the kazikazi (North monsoon winds) and kusi (South monsoon winds). While almost all caught fish is sold in both Lunga Lunga and Msambweni (around 96%), the average income earned from offshore fishing in the past one year varied substantially across the two sub-counties. The average annual income from offshore fish was KSh. 281,494 (about US$ 2,479) in Lunga Lunga and KSh. 185,364 (about US$ 1,632) in Msambweni.

Figure 28: Abundance of offshore fish stocks by sub-county



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Figure 29: Percentage of male fishers on inshore fishing



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The general feeling of the fishing households was that, compared to historical levels, the abundance of fish stocks had severely reduced as reported by 73.40% of the respondents, while 14.36% felt the fish levels had somewhat diminished. A further 5.3% reported that fish stocks have stayed the same. A cross comparison among the three sub counties show that fishers in Msambweni and Lunga Lunga strongly felt that fish stocks have severely reduced.

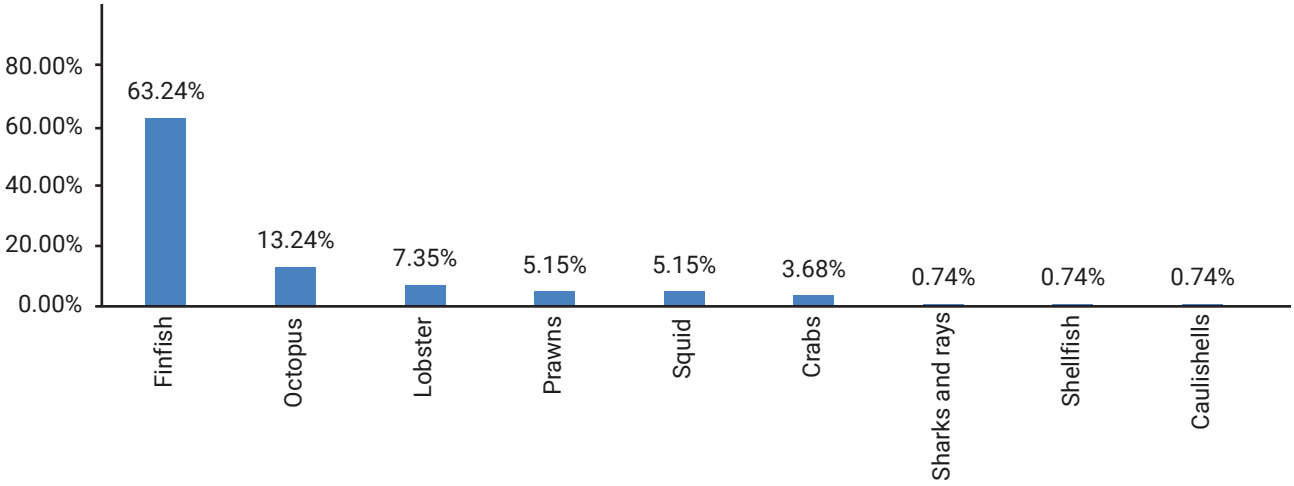
iii. Inshore Fishing

Inshore fishing is mainly done during times of low tide when the water recedes. Out of a total 136 fishing households involved in the inshore fishing, about 30% in the three sub-counties had men engaged in inshore fishing for the last 12 months. Most of these households reported having only one member of their households involved in the inshore fishing.



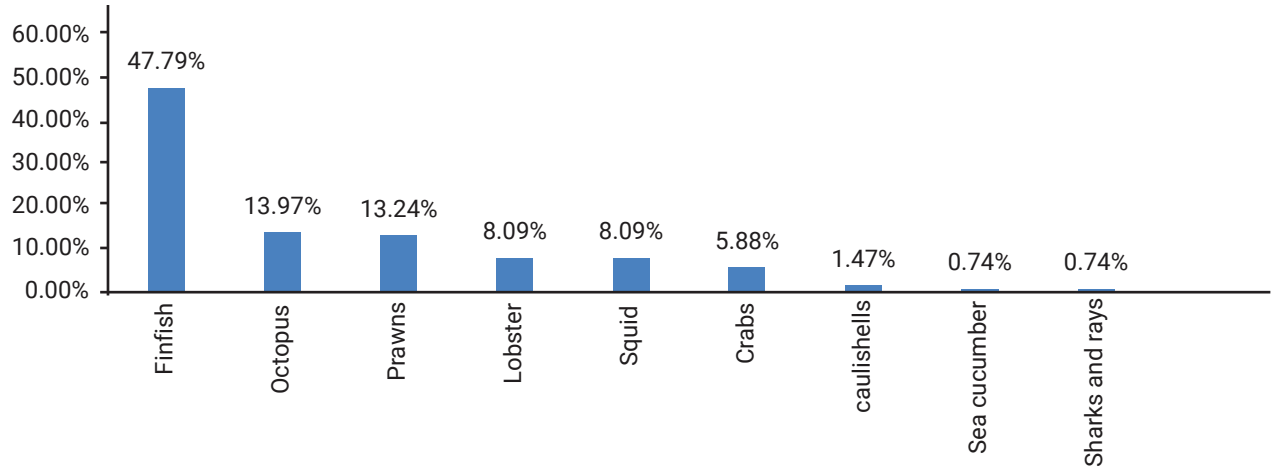
Plate: 10 Some of the landings from the fishery in the South Coast ©UNESCO-IOC

Figure 30: Male fishers' first choice of catch



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Figure 31: Male fishers' second choice of catch



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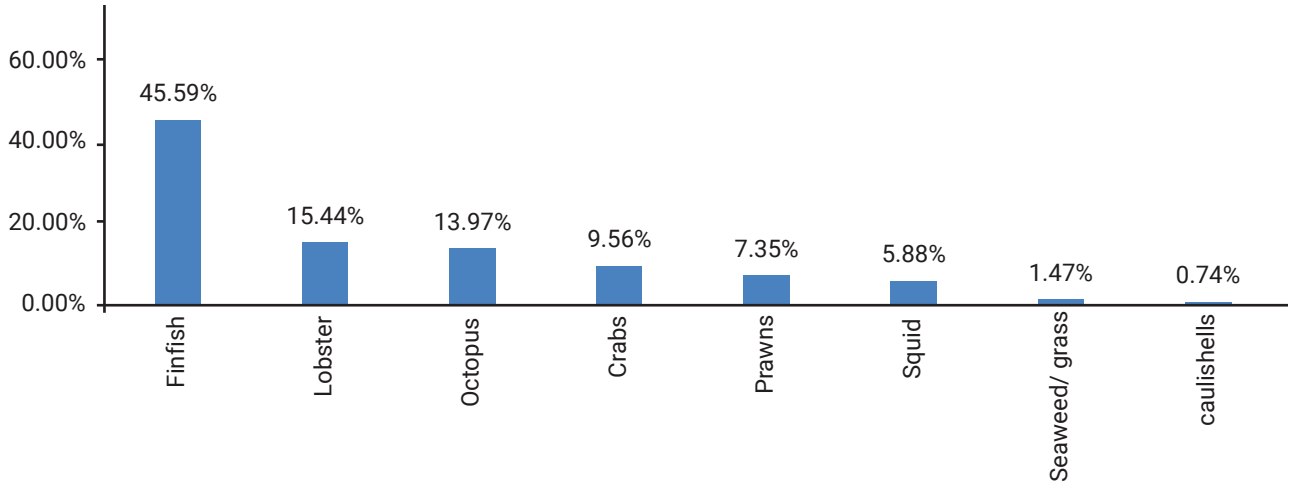
The household male members engaged in the inshore fishing had finfish as the first choice catch as reported by 63.24% of the households, followed by octopus (13.24%), lobsters (7.35%), prawns, crabs, and others.

The respondents also reported on the second choice of the male inshore fishers as finfish as reported by 47.79% of the respondents, octopus by 13.97%, and prawns 13.24%. Lobsters and squids were also an important second choice among inshore fishers.

The third choice of male inshore fishers was dominated by finfish as reported by 45.59% followed by lobsters 15.44%, and octopus 13.97%. Prawns and squids were also popular third choice catches among male fishers.

The fishing areas for inshore fishing varied with most (54.41%) fishing being done off the beach from their villages, 21.32% fishing around the reefs, and 13.24% around mangrove creeks. This kind of fishing is done during low tidal periods. A comparison across the sub-counties shows that most of the inshore fishing in Lunga Lunga is done off the beach and on mangrove creeks. In Msambweni and Matuga, most of the inshore fishing is off beach and on reefs.

Figure 32: Male fishers' third choice of catch



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According to most (72.1%) of male inshore fishers, inshore catch has severely reduced over the years, while 13.97% believe that it has decreased somewhat. Over 5% of the fishers reported that the catch has remained relatively the same, with close to 6% reporting that it is almost gone.

The same pattern is repeated in the sub-county analysis with 72.6% of the inshore fishers in Msambweni indicating that the catch has severely reduced overtime, while 80.9% in Lunga Lunga and 55.6% in Matuga reporting similar results. The reduction is therefore observed across the board from all the sub-counties.

Women in the sampled households also undertook inshore fishing during low tides. This was however reported only in 21 households (4.66%). Ten (45.45%) of these households chose octopus as their most popular first choice of catch, followed by shellfish and lobsters (18.2%), and the rest (finfish, prawns and sea cucumbers) at 4.6% respectively.

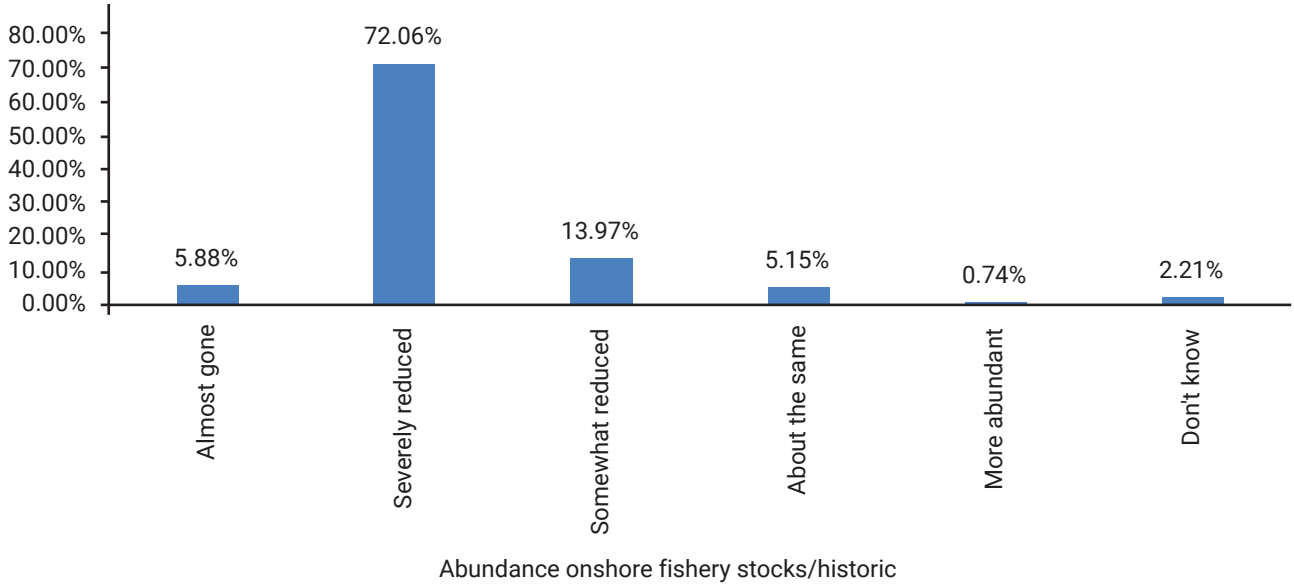
The second popular choice of catch for women inshore fishers was shellfish 9 (40.91%), then lobsters 5 (22.73%), and octopus 3 (13.64%).

The third choice of catch for inshore women fishers was octopus as reported by 36.4% of women fishers, followed by shellfish, prawns and lobsters each accounting for 13.64%. On the locations of inshore fishing for most of the respondents reported that women preferred areas around the reefs (45.5%) followed by sand or mudflat areas (31.8%) and off the beach (18.18%).

Table 3: Inshore fishing areas across Sub-counties

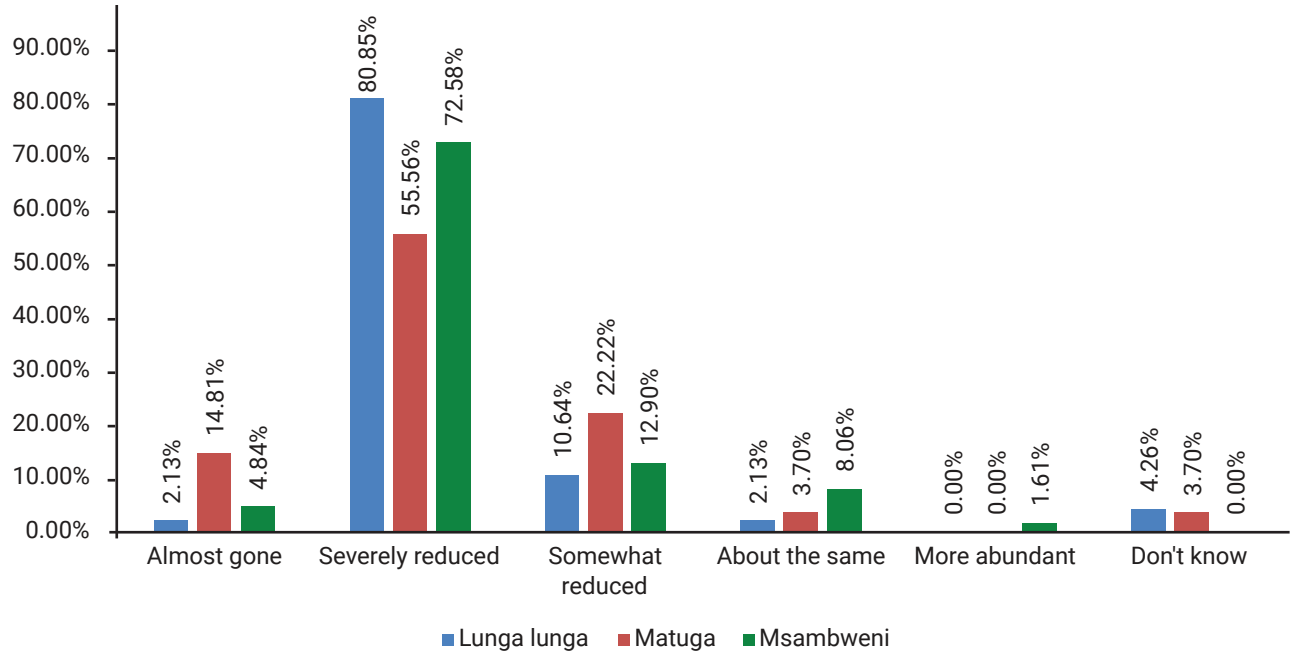
Where Fishing is done	Lunga Lunga (%)	Matuga (%)	Msambweni (%)	Total (%)
Don't know	0.00	0.00	1.61	0.74
Mangrove creeks	34.04	0.00	3.23	13.24
Off the beach	46.81	44.44	64.52	54.41
Reef	8.51	44.44	20.97	21.32
River or estuary	2.13	0.00	0.00	0.74
Sand or mudflat areas	4.26	7.41	0.00	2.94
Seagrass areas	4.26	3.70	9.68	6.62
Total (%)	100.00	100.00	100.00	100.00

Figure 33: Abundance inshore fishery stocks over time



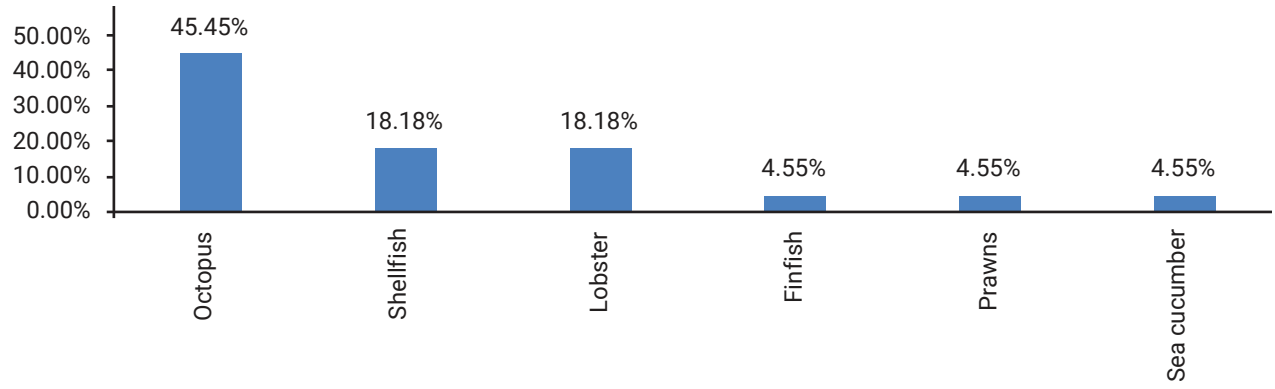
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Figure 34: Perception on inshore fish stocks reduction by male fishers



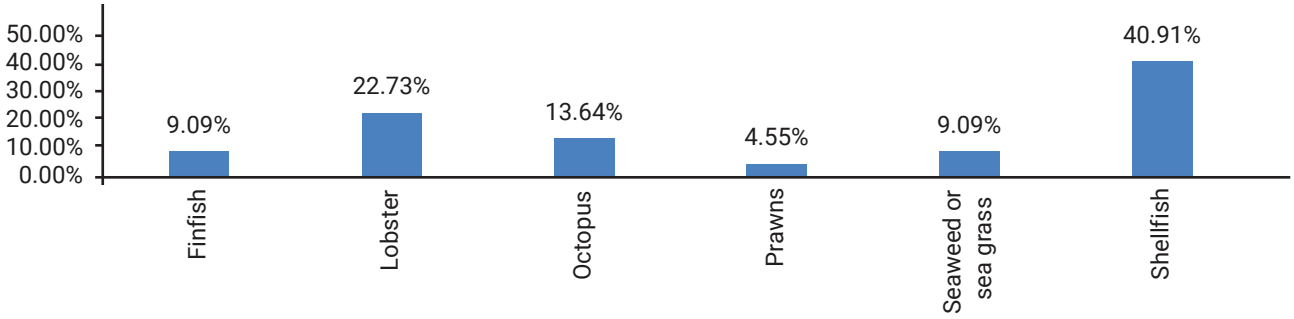
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Figure 35: Women first choice of inshore catch



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Figure 36: Women second choice of inshore catch

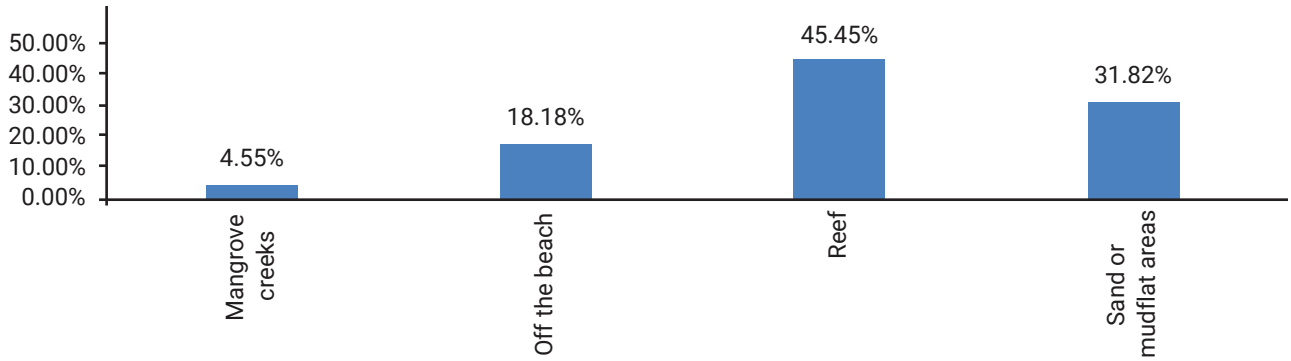


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The perception of inshore women fishers is that fishing stocks have severely reduced according to 81.82% of the respondents, while 18.18% said the stocks have somewhat reduced as compared to their historical levels. About 84% of the inshore women fishers sold their catch over the Kaskazi fishing season, while in the southern monsoon seasons (locally known as Kusi), 79% of inshore women fishers sold of their catch. This indicates that many of the women inshore fishers do it predominantly for sale. Furthermore, during the Kaskazi fishing season, the household mean annual income from inshore fishing for women was KSh. 25,892 (about US$ 2,400), while mean Kusi income was KSh. 20,973 (about US$ 1,900).

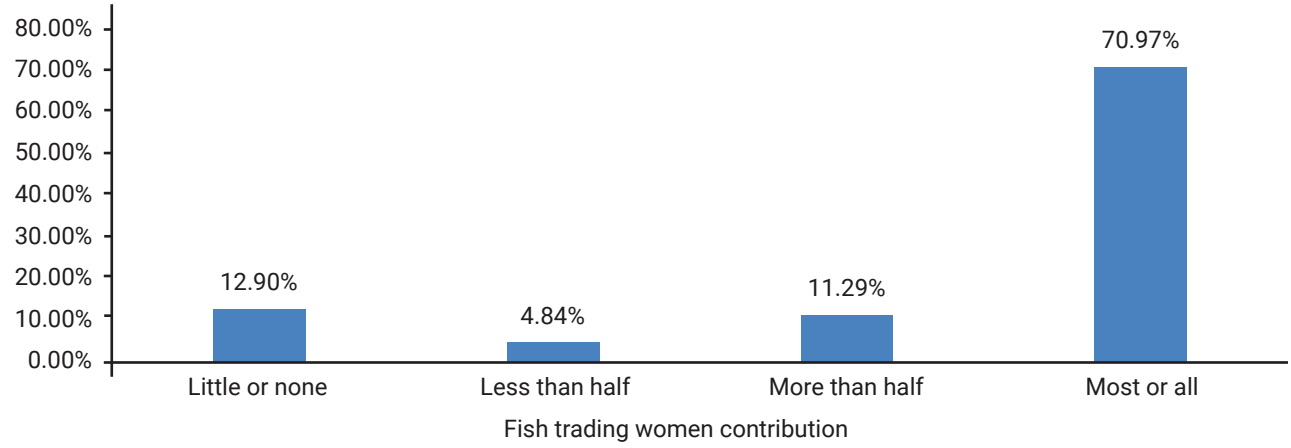
Most of the fish trading e.g., fish buying, frying, etc. is done by women, as reported by 70.97% of the 124 households engaged in fish trading. A further 11.29% felt that women did more than half of the fish trading business. The mean monthly income from fish trading activities was KSh. 23,924 (about US$ 220) with an annual average of KSh. 299,748 (about US$ 2,800). The mean annual income from fish trading is much lower in Matuga (KSh. 98,691) compared to Lunga Lunga (KSh. 175,468) and Msambweni (KSh. 146,898).

Figure 37: Areas most fished by women inshore fishers



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Figure 38: Participation of women on fish trading



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4.2.1.3 Mariculture

In mariculture, aquatic organisms, plants, and animals, are cultured in a confined environment in the aquatic medium, which may be wholly marine or marine mixed to various degrees with freshwater in the brackish water areas. The survey findings show that 12.61% of the total sampled households practiced mariculture. The popular mariculture activity was seaweed farming undertaken 87.72% of the 57 mariculture farming households, followed in a distant second by fish farming which accounted for 8.77%. The average land size under mariculture farming was 2.269 acres.

According to the survey results, women do most of the mariculture work according to 61.40% of households involved in mariculture farming, with 28.07% reporting that more than half of the work is done by women, while 5.3% felt that women did less than half of the mariculture work. The monthly average income that residents derived from mariculture was estimated at Ksh. 8,977 (US$ 79), which translated to an estimated annual average income of Ksh. 107,724 (US$ 949). This income varied greatly between sub-counties with Lunga Lunga having the highest average monthly income of Ksh. 38,471 (US$ 339) while Msambweni had the lowest income of Ksh. 9,510 (US$ 84).

4.2.1.4 Tourism

The coastal towns and surrounding areas are popular tourism destinations. Consequently, we expected to have a substantial number of households that depend on tourism and associated activities for livelihood in the surveyed communities. However, against expectations, the survey results show that

only 9.29% of the 452 surveyed households reported having a member of their household engaging in tourism activities for the past 12 months. The low numbers could be associated with the dwindling levels of tourism activities due to Covid-19 pandemic and ensuing restrictions. As a result, the average monthly household income from tourism activities was KSh. 9,126 (US$ 80) for the households involved in tourism activities, while annual household income from the same was estimated at KSh. 111,526 (US$ 986). Lunga Lunga households earned most income from tourism averaging KSh. 150,857 (US$ 1329) per annum. Women's income contribution from tourism was low, with surveyed households reporting that the contributions of women were less than half (9.5%) and little/none (85.7%). However, the earnings would have been higher without the Covid-19 pandemic, as households estimated their annual income would have averaged KSh. 265,071 (US$ 2334) per year prior the pandemic.

4.2.1.5 Timber and poles

Harvesting of timber or poles was regularly done by only 6.43% of the total 451 respondents. About a third (31.03%) of the respondents who harvested timber or poles reported that they had harvested it only once in the last year. The mean number of poles harvested in the year was 231 poles, with the majority (82%) of those involved in harvesting not selling the poles. Those who sold the harvested poles, fetched an average price of KSh. 121.5 (US$ 1.1) per pole and an average annual income of KSh. 1,958 (US$ 17). About 14% of the harvested timber/poles came from mangrove forests. Most of the timber harvesters did not sell their harvest.

4.2.1.6 Charcoal

Nearly all (95%) respondents indicated that they do not regularly make charcoal from mangroves or other forests. The remaining few households who make charcoal from mangroves or other forests made less than six bags per year and sold a bag at KSh. 1,043 (US$ 9.2) making an average income of KSh. 5,931 (US$ 52) per year. This trend was similar across the three sub-counties.

4.2.1.7 Firewood

A majority (80%) of the Kwale county residents collected firewood twice a week, a job that was primarily done by female members of the households with Msambweni sub-county leading in number of households that collect firewood. Majority (96%) of the residents collected 12 headloads of firewood weekly for their use. However, nearly all (94%) of the respondents collected little to no firewood from mangroves.

4.2.1.8 Wild food and medicines

Most (63%) of the residents across the three sub-counties did not regularly collect wild vegetables, fruits, or traditional medicines from the forests. A majority (70%) of those who collected wild vegetables, fruits or medicines were female members of the household and used it for own consumption as opposed to selling it.

4.2.1.9 Hunting

Almost (96%) of households in Msambweni, Matuga, and Lunga Lunga sub-counties did not regularly hunt for bushmeat or wild harvest honey. Of those who hunted, a majority hunted forest animals and birds (61%), forest and mangrove honey (38%), and coastal and mangrove birds for their consumption. Those who hunted for sale made an average annual income of KSh. 5,500 (US$ 48).

Table 4: Firewood collection across Sub-counties

Household regularly collected firewood	Lunga Lunga (%)	Matuga (%)	Msambweni (%)	Total (%)
No	22.31	20.75	18.52	20.13
Yes	77.69	79.25	81.48	79.87
Total	100.00	100.00	100.00	100.00

Table 5: Collection of wild vegetables, fruits, or medicine across sub-counties

Household regularly collected wild vegetables, fruits or medicine	Lunga Lunga (%)	Matuga (%)	Msambweni (%)	Total (%)
Don't know	0.77	0.00	0.00	0.22
No	57.69	49.06	73.61	63.27
Yes	41.54	50.94	26.39	36.50
Total	100.00	100.00	100.00	100.00

4.2.1.10 Raw materials from plants

About 35% of the respondents indicated that they had harvested reeds, sedges, grasses, or palm leaves in the past year. A majority (85%) of reeds, sedges, grasses, or palm leaves harvesting was done by female household members for their use. Lunga Lunga had a slightly higher percentage of households that harvested reeds, sedges, grasses, or palm leaves than Msambweni and Matuga.

4.2.1.11 Mining

Majority (90%) of the households indicated that they do not regularly mine either sand or coral stones. The respondents involved in mining harvested 0.6 tonnes of sand and about 75 pieces of corals stones for sale in a month. Mining of sand and corals was male dominated with female members of the household rarely involved in mining. Households that mined sand and corals earned an average annual income of KSh. 91,539 (US$ 806), with those in Msambweni sub-county earning the highest average annual income of KSh. 122,550 (US$ 1079) followed Matuga and finally Lunga Lunga sub-counties.

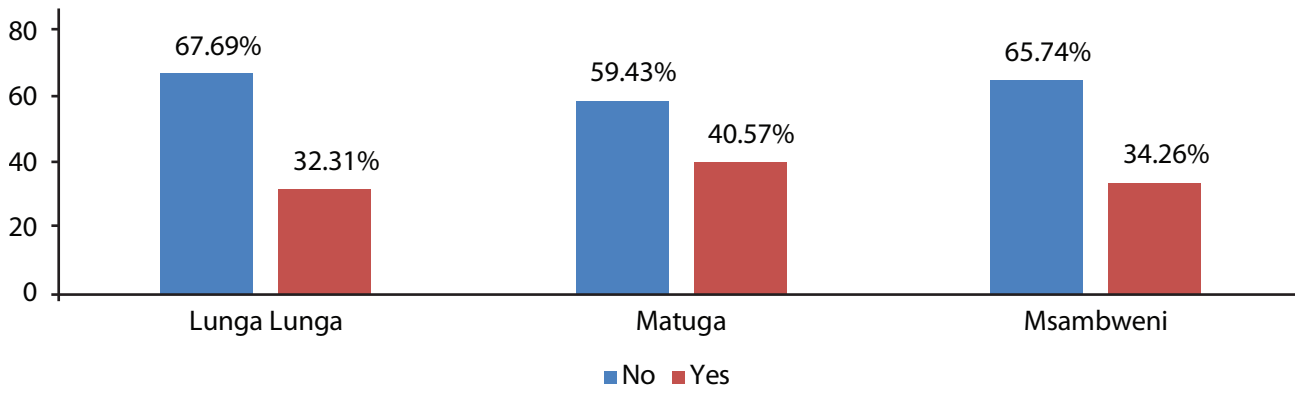
4.2.1.12 Making products for sale

Majority of the households did not prepare food, drinks, or handcrafts for sale regularly in the past one year. Those who sold food, drinks and handcrafts earned an average income of KSh. 656 (US$ 5.8), KSh. 3,857 (US$ 34) and KSh. 5,788 (US$ 51) per day in Lunga Lunga, Matuga and Msambweni, respectively. Majority (85%) of the respondents indicated that they did not earn any income from making products for tourists.

4.2.1.13 Crop production

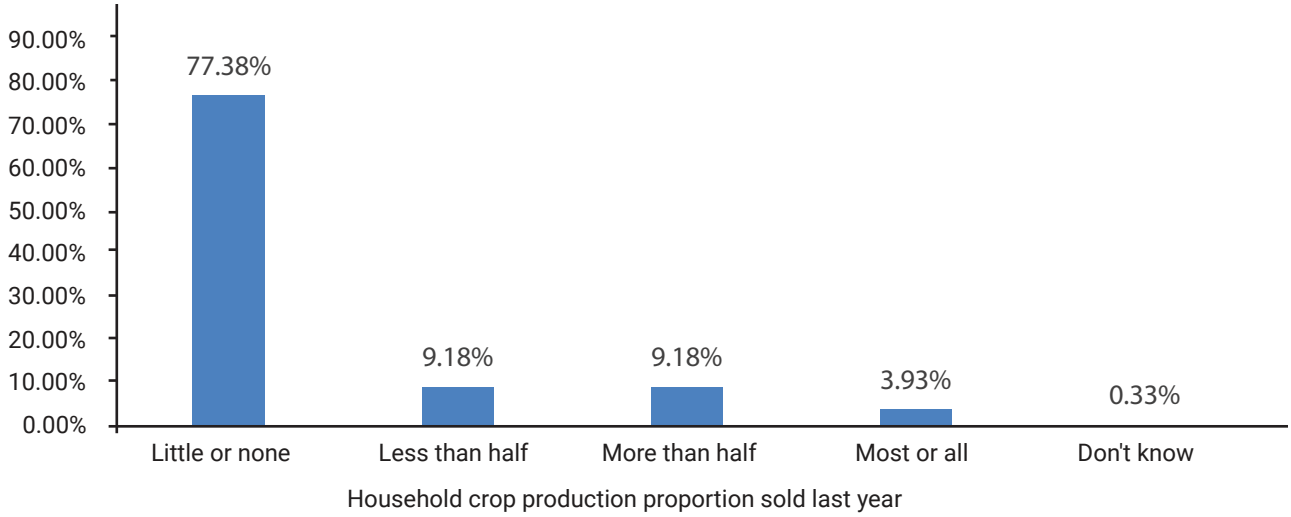
Crop production as a means of livelihood was practiced by 67.5% of the surveyed households. The average area of cultivated land was 2.28 acres implying that most farmers are small scale

Figure 39: Households harvesting reeds, sedges, grasses or palm leaves



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Figure 40: Household crop production proportion sold last year



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producers. Maize production is done by 71.80% of the farmers, 63.28% plant potatoes and cassava, 47.87% produce fruits and nuts, while vegetables production is done by 43.61% of the households. In addition, there are other crops grown by fewer households such as rice (12.79%), beans and other legumes (12.46%), cowpeas (33.77%), pigeon peas (15.41%) and green grams (39.67%). About 11.2% of the farming households grew other crops. On average, households own 15 banana trees, 17 coconut trees, and 10 other fruit and nut trees. According 58% of the respondents, more than half of the crop farming work is done by women.

Crop production is either done for sale or household subsistence. More than 92% of the households sold little/none or less than half of the household production in a month. Similarly, over 86% of the households indicated that they sold little/none or less than half of the household production in the past year.

4.2.1.14 Livestock production

Most (58%) of the households in the three sub-counties kept livestock, with Matuga leading with the highest percentage of households with livestock (81%), followed by Msambweni (52%) and Lunga Lunga (48%). On average, households have two sheep/goats and two cattle. The respondents reported that households earned about KSh. 11,716 (US$ 103) annually from the sale of livestock.

4.2.2 Opportunity and Choice

Availability of opportunities, and the ability to choose from available opportunities influences poverty levels in a community. In Gazi, men indicated that they have the same opportunities as women, but women conflicted the assertion as they felt limited by cultural and traditional norms. The opportunities available for men include honey harvesting, fishing, and harvesting of mangroves (when bans are lifted) while women have shrimp sourcing and bee keeping (except honey harvesting). Opportunities available for both genders include fish trading, seaweed farming and crop/livestock. Men, women, and youth are hindered from choosing any livelihood activity they would want to undertake by delayed gratification/ lack of instant benefit, culture/traditions, and ability to undertake a particular livelihood activity that requires physical strength and is more adequate for male members of the community.

In Makongeni men and women indicated to having similar and equal opportunities in the community but women pointed to not being as proactive in some activities as men. The opportunities available for men were quarrying, fishing, bodaboda/tuktuk transport business, carpentry, masonry, and coconut brewing (pombe ya mnazi), while for women are involved in frying fish (karanga), Making mahamri, making makuti (used for house roofing) and frying samosa. Both women and men are engaged in farming (crop and livestock) and fish farming/mariculture.

Nothing would prevent men, women, and youth from choosing any livelihood activity they would want to undertake in this community.

In Chale, men indicated that women have ben availed the same opportunities in the community, but they do not contest for leadership positions. Women, on the other hand, argued that they do not have the same capacity as men. The opportunities available for men in the area were knitting fishing nets, fishing, mangrove harvesting (when bans are lifted), quarrying, and tour guiding. The opportunities for women were firewood collection, making makuti (from palm leaves), arranging stones in quarry, petty trading e.g. cooking for fisherfolk, and frying samosa and mahamri. Both women and men were involved in fish frying and farming. Culture and traditions e.g. women not allowed to go to the sea and traditional expectations that men are expected to lead prevent men, women, and youth from choosing any livelihood activity they would want to undertake.

In Kibuyuni, Shimoni and Vanga, men and women agreed that they have similar opportunities in the community. In Kibuyuni, the opportunities available for men were fishing, bodaboda transport business, and fish frying, while women fried fish, made mahamri, and were involved in cowrie shells collection. Both genders were involved in farming both farm produce and seaweed, but culture and traditions limited men, women, and youth from choosing any livelihood activity they would want to undertake.

In Shimoni, the opportunities available for men were loading transport vehicles, bodaboda riding, fishing and tour guiding, while women did cooked meals for selling, fishing, collection of cowrie shells at the seashore. Both were involved in selling fish, farming, small scale businesses such as hotel and transport of goods to Zanzibar. Lack of capital (e.g., fish dealer business may require as much as KSh 20,000 (US$ 176) to KSh 30,000 (US$ 264) to start) and culture and traditions (e.g., the view that women are commonly responsible for household chores) inhibited men, women, and youth from choosing any livelihood activity they wanted to undertake.

In Vanga the opportunities available for men were fishing, masonry, carpentry, and motor mechanics, while were involved in frying fish, making food (mahamri, and chapatti) for selling. Both were involved in farming and fish trading, and culture and traditions prevent men, women, and youth from choosing livelihood activities of their choice. Women too shunned away from group responsibilities where men are involved.

In Kibwaga women reported that they are undermined and could not undertake some activities such as fishing hence they do not have same opportunities in the community as men. The opportunities available for men were fishing, tour guiding, bodaboda, and charcoal burning using mango trees. Women made makuti (from coconut leaves) and fried fish, while both genders were involved in quarrying and farming (maize, cassava, pegion peas, mango and coconut).

Men in Bigamtangizeni indicated that they had the same opportunities in the community as women, but that women like positions with few roles and responsibilities. On the other hand, women indicated



Plate: 11 Local production of basket traps in Vanga village ©UNESCO-IOC

that they do not have the same opportunities in the community as men. The opportunities available for men in the area were fishing and masonry, while women fried fish, and sold mahamri and chapatti. Both women and men were involved in farming (cassava, beans, mangoes, African leafy vegetables e.g., mchicha) and masonry. Culture and traditions and women preference of positions with fewer responsibilities prevented men, women, and youth from choosing livelihood activity they would want to embark on.

To access better opportunities and a variety of choices, men in Tiwi insisted that they should benefit more from resources by getting at least 60% of the proceeds of resource extracted in the area. They also requested for public participation before any developments take place in the area, and for fishers to have a landing site plus public access to the beach. On the other hand, the women in the area wanted to see a revival of the community Shrine (Kaya Tiwi), provision of title deeds, provision of means to access offshore fishing zones e.g., commercial fishing boats, revamping of tourism, and provision of water for irrigation and the associated equipment, e.g., pumps.

In Bigamtagizeni, the men demanded that the government should act to control unsustainable fishing by the fishers from Pemba Island, provide the means to access the deep sea, facilitate irrigation farming, and construct a fruit and coconut factory for value addition. On the other hand, the women wanted funding for their small businesses, a market for their products, the government to deal with the rampant youth drug users who disrupt security, and a factory for their farm products, e.g., fruits.

The communities were asked about the changes they were afraid of if MSP was to be effected, and most indicated that they feared land grabbing and evacuation due to proposed new developments, pollution, uncertainties of benefits when changes occur, and fear of the shrine being taken over by the National Museums of Kenya once it is revived. Others feared the destruction of seagrass by fishers, unemployment and poverty due to the lack of industries and fishing boats that can access offshore, and enforcement of the gazettement of Diani area as a marine park which will take away their fishing area. There were also fears of deterioration or degradation of seaweed farms, increase in depth of fishing are due to dredging making fishing harder to catch, and a skewed permit system especially to modern investors, e.g., Huawen fish processing factory was licensed to use ring nets for anchovies whereas local fishers are not allowed to use the same.

The communities were asked where they think oil and gas exploration and exploitation were likely to occur. Most indicated that Chale was a good candidate, while others said Kibuyuni, Shimoni, Funzi, Vanga-Kwasi, and Kongo River. According to the communities, the likely implications of oil and gas mining would be pollution of the ocean through oil spillage as well as air pollution that would further exacerbate the effects of climate change; decline in fishing and livelihoods of those who depend on it; coral death due to sedimentation; damage of fishing activities, migration of fish to other areas, etc. The communities also indicated that they were aware of the proposed port and shipping activities in the Shimoni area.

4.2.3 Power and Voice

Power and voice are essential in determining whether individuals or groups in a community can voice their concerns and have power over their destiny. When asked if there were any resource user associations in the community, residents from Gazi reported in the affirmative. Some of the resource user associations are in the area are Beach Management Units (BMUs) that deal with marine resources such as fisheries, conservation groups such as Mikoko Pamoja project, which mainly deals with conservation, rehabilitation, and propagation of mangroves, and community forest associations (CFAs) that deal with forest conservation using community involvement and inclusion. In Makongeni and Chale villages, the study found resource user associations to exist in the form of environmental conservation groups and beach management groups.

In Kibuyuni village, in addition to conservation groups and beach management units, residents had formed a seaweed farming cooperative comprised of seaweed farming and value addition to produce soap, lotion, shampoo, and other products.

In Shimoni, the FGD discussions brought out the existence of turtle watch conservation groups working to protect turtle nesting grounds, young mothers' associations, and child rights activists defending human and children's rights in the



Plate: 12 Seaweed farming in Kibuyuni village ©UNESCO-IOC

community. In the Vanga area, several associations including conservation groups such as Mwambiwege conservation group (for mangroves), Vanjiki, and Bahari yetu that generally protect the ocean, and CFAs such Vanjiki, Jitihada, Mchongo, among others were reported. There were also farmers' association in the Tiwi area, while in Bigamtangizeni, associations such as boat operator groups, BMUs, and Village Savings and Loan Association (VSLAs) were also reported.

The resource user associations comprised both men and women. However, in Vanga, the FGD participants reported that some groups comprised of both genders e.g., Mwagugu (under Vanjiki), with the number of women or men would varying from group to group, while others were purely for women, e.g., Mwambiwege. In nearly all, the group members selected the groups' leadership either through nomination or election process. In Gazi village, a women group reported that they had incorporated gender and tribe balance in the leadership representation during the election. In all groups, the respondents agreed unanimously that women had been given leadership roles. In some notable cases e.g., in Makongeni, women led most resource user groups, while in Chale the VSLA comprised more women than men.

When asked whether women are well represented in associations, all groups reported that women were well represented, and that all elective posts were open to both men and women. In Chale, men reported that though women were well represented, they did not take on leadership positions on most occasions. Their female counterparts, however, felt that women were only represented in VSLAs, but they were not well represented in BMU leadership. Finally, in Vanga, female FGD participants felt that women are well represented in the associations' leadership despite their low numbers in BMUs. In decision-making, FGDs participants felt that women's opinions were listened to, respected, and seriously taken to account.

It was essential to ascertain whether the same kind of representation witnessed in the resource user associations was replicated in the elective and government administration in the community. The results were mixed, with some groups reporting the presence of women in national and county government administration while others reported that women were not in such positions. For instance, in Gazi, men reported that the deputy governor, County Executive Committee (CEC) Member for Agriculture in Kwale County, and a nominated MP from the community were women; while in Chale, one Member of County Assembly (MCA) was a woman.

In Vanga, an MCA and a Senator, both women, were from their local community, while in Bigamtangizeni one Member of Parliament was a woman. In contrast, we found no women representation in county or national government from Makongeni, Shimoni, and Kibuyuni.

4.2.4 Peace and conflict

This section sought to establish social cohesion, trust, conflict resolution mechanisms, justice etc. in the local communities. In the three sub-counties, several resource-user groups had existed for long periods of time. These include turtle watch conservation group, BMUs in different localities, mangrove conservation groups e.g., Mikoko Pamoja etc. According to the communities, some are cohesive and working together to achieve their goals while others are not.

The level of trust between the groups also varies with some indicating that they trust each other while some, especially those with both men and women indicated that women do not trust men. Some of the areas of conflict include failure to submit work plans by resource user groups under CFA, and BMU conflicts when fishers fish in areas beyond their fishing jurisdiction in Gazi. In Makongeni, women reported theft of fish from common project catch, while in Chale there were conflicts between fishers and fish traders over prices, and conflicts between members and their leaders due to a lack of confidence on their leaders. In Kibuyuni, during recording on fish at landing sites, some fishers evade and fail to declare their catch.

In Shimoni, there were conflicts between boat operators and hoteliers when boat operators ferry tourists belonging to hoteliers without the consent of the hoteliers. There are also land conflicts arising from land sales without consent. The women in Shimoni decried of corrupt practices in the groups with elections taking long to be conducted and leaders not involving community members in times of decision.

In Vanga, the men indicated that conflicts arose from removal of buoys serving as boundaries to CCA (community conserved area) by fishers against the consent, and transboundary conflict e.g. when the fishers from Pemba island unknowingly fish in the CCA areas. There are also conflicts between the community and institutions such as coast guard and Kenya Marine Authority (KMA) over the fishing sites. The women also complained of colleagues who feigned sickness during mangrove planting while others shun away from planting. In Tiwi, there were conflicts arising from funds misappropriation/ embezzlement and lack of transparency significantly overpricing of commodities during marketing.

The frequency of conflicts in these communities varied considerable with those of Women in Makongeni and Men in Chale occurring more frequently, while the rest take longer time to arise. The communities have devised different ways of resolving conflicts including seeking assistance of county fisheries department to resolve BMU disputes, using internal group dispute resolution mechanisms, use of court processes for land issues, suspending problematic members from associations, and addressing issues through local administration e.g., Chiefs. In most of the highlighted cases the groups reported that justice was served after a resolution was sought, but in some cases in Makongeni, Shimoni, and Bigamtangizeni, the communities indicated that justice was not achieved. Overall, it can be said that the communities live in peace, and conflicts over resources are often resolved in most of the cases.

4.3 Other Determinants of Poverty

After explaining who, how and why people are poor, it is also important to discuss other factors that would compound the poverty levels for both men and women in Kwale County. These are discussed hereunder.

4.3.1 Political and institutional context

The political and institutional contexts originate with rules and regulations governing different community aspects such as extraction of resources. Our findings show that all the participants were aware of the rules and regulations that govern resource use and extraction in their areas, except those in Tiwi. For example, in Gazi, men knew about the old Fisheries Act Cap 378, of 1989, and Fisheries Management and Development Act 2016. In Makongeni, men understood preserving mangroves while their women counterparts only reported knowing that establishment of fishponds required consent from the government. Men in Chale said they knew that turtles were endangered, should not be fished, and anyone violating this risked imprisoned. Their women

counterparts understood that one should plant a tree when they cut one and were aware of Fisheries laws on sustainable fishing gears. In Kibuyuni, men reported that government/national laws guide BMUs, while women reported understanding that there are Fishery regulation laws.

In Shimoni, men groups were aware that one required a licence to take part in ocean-related activities, e.g., fishing, boat operation (tourism). At the same time, women were aware that they needed to shun away from unsustainable fishing methods, e.g., use of diatomite, and that every fisher must be registered under BMU to undertake fishing. In Vanga, men were aware that they must undertake fishing using sustainable methods and gears and must have a license and safety equipment before being allowed to fish. The women counterparts in Vanga understood that they have a right to be heard on marine resource use and conservation as a community. Finally, in Bigamtangizeni, the men understood that regulations give them the right to information and specify license requirements before extracting marine resources, while the women understood that resources are controlled, and one must be granted access to use them.

The rules and regulations discussed above were enforced according to a majority of the FGD participants. However, in Vanga, men felt that there was laxity in enforcing resource use and extraction rules and regulations while the women believed the rules were partially enforced.

Majority of the FGD participants confirmed the presence of local arrangements besides the formal ones by the government in governing the exploitation of the resource by the community. For instance, in Gazi, members of Mikoko Pamoja conservation groups had identification documents that gave them some rights, such as their kids schooling for free. In Makongeni, men had made local arrangements to patrol and protect the mangrove forest from illegal extractors. The women also reported that they had an arrangement where any activities in the village had to be done through the village chairman, and every community member had a right to benefit from the proceeds accruing from the joint community projects. In Chale, men had an arrangement which dictated that fishers could not move from one BMU area to another without consent of the BMUs, while the women reported that they had to know every visitors' motive in their locality. In Kibuyuni, the women said that the fishers from other BMUs had to strictly adhere to the community BMU by-laws if they wanted to fish from the area.

According to women in the Shimoni, boat operators could not work without uniforms and badges for identification purposes and had to pay KSh 200 (US$ 1.8) for trips made to Kisite and Wasini. The male counterparts reported that BMUs had to be informed of any activities taking place at the beach, e.g., beach cleanup, etc. In addition, fishers from other BMUs had to pay a docking fee before fishing within BMU governed areas, and leaders could not take up responsibilities meant for other leaders unless it was an emergency. In the Vanga area, the local arrangement dictated that all BMU licenses be vetted for all BMU members who plan to engage in marine activities according. At the same time, the women in the area reported that every new boat/canoe should pay a docking fee to BMU to be allowed to fish, anyone joining a resource user group should be from the area or village, should be of sound mind, and should have an identification card.

In Bigamtangizeni, men reported that a boat operator group is meant for the village members and no outsider was permitted, and that one could not shift roles, e.g., from a fisher to a boat operator unless due procedures as spelled out in BMU by-laws had been followed. According to the groups, majority of the participants believed some people respected the rules and regulations set by the group, while others felt that they were fully respected by all the people in the group. Moreover, all the participants were aware of their fundamental human rights as spelled in the Constitution of Kenya 2010, Bill of rights, e.g., in Chale and Tiwi, men and women reported that they have a right to work without being oppressed provided they have the license, while in Shimoni, men reported that they have right to education. The women reported that they have a right to information, right to security of their resources, right to access resources, right to be given a license to access resources, but did not have the capacity to fight for their rights.

In Vanga, men said they knew their rights, although not everyone understood them. The women alluded to understanding the right to be heard and the right to opportunities for women-empowerment. Finally, in Bigamtangizeni, the men said that they have a right to information. There were mixed reactions

on whether the local authorities e.g., Chiefs, ward representatives, MCAs, respect the rights; with a slight majority believing that the local authorities respect their rights. However, those who felt that their rights were not respected cited issues like corruption in Shimoni. Finally, when asked whether government agencies respect human rights in protecting resources, the majority felt that the government had at least some respect for human rights.

4.3.2 Violence and Insecurity

All communities indicated that resource user groups or community associations comprise members from different villages, sub locations, and tribes and that there are conflicts among the different resource users. Though there are different types of conflicts, rarely do these conflicts result into violence amongst individuals or groups. Nearly all communities indicated that they feel secure extracting resources. However, those who felt insecure extracting resources feared the following: seaweed farming ropes being removed and used by fishers in suspending buoys attached to basket traps, theft of resources such as pumping equipment, and many youths who are into drugs and disrupt the security and steal resources.

In Gazi, the main types of conflicts amongst resource users were: conflicts between BMUs and some fishers from outside their BMU regulated areas leading to conflicts in terms of regulation; when money collected from the weighing of fish does not match the records; conflicts arise when resource user groups fail to submit their work plans CFAs as well as conflicts between members with their leaders; and, conflicts due to project violence, i.e., when projects are not implemented as they should or the choice of a project is a challenge e.g. in Mikoko pamoja. These conflicts are resolved through a letter to CFA that initiates conflict resolution talks with the relevant user groups. In case the concerns are not addressed by CFA, they are passed on to KFS. Fishers complains are addressed via BMU chairperson and sub-county fisheries department.

In Makongeni, the main types of conflicts amongst resource users were leadership wrangles and theft of resources (fish) at night by men. These conflicts are resolved through negotiations by coming together as a resource user group. In Chale, the main types of conflicts amongst resource users were conflicts arising from lack of confidence on their leaders especially during contributions; conflicts between fisherfolk and traders due to lack of agreement on fish prices; and boundary issues from visitors when they buy land in the region. These conflicts are resolved through internal dispute resolution and involving KFS.

In Kibuyuni, the main types of conflicts amongst resource users were land conflicts e.g., some lands sold without owner's consent, BMU leaders verses fisherfolk, fishing within the community conserved area at night, lack of market for seaweed and its products, seaweed farmers mistaking their produce with those of their counterparts during drying, removal of seaweed farming ropes by fisherfolk to use them as buoys suspenders for their basket traps, lack of trust and transparency of BMU leaders to their member, fisherfolk docking their vessels on seaweed farms and sometimes fish on those farms. These conflicts are resolved through land patrols, negotiations, labelling of the seaweed racks, buying of seaweed produce from farmers through Kibuyuni seaweed society to cushion farmers, carrying seaweed farming ropes home, awareness creation by BMU to fisherfolk, internal dispute resolution mechanisms, seaweed farms patrol and awareness creation in seminars.

In Shimoni, the main types of conflicts amongst resource users were fisherfolk removing other fisherfolk buoys used to suspend basket trap, BMUs and fisherfolk fishing in conserved areas of BMU or in areas that are not theirs, and boat operators transporting tourists without knowledge of the hoteliers. Others are land conflicts from land grabbing or forceful evictions, community verses employers when job opportunities are not given to the locals. These conflicts are resolved through negotiations among fisherfolk or between concerned BMUs and by involving KFS

In Vanga, the main types of conflicts amongst resource users were some fisherfolk fishing in a community conserved area in fear that it will eventually be converted to a park, removal of buoys that mark the CCA boundaries, fishing in CCA by Pemba fisherfolk due to lack of knowhow on the existence of a CCA, conflict between the community and institutions such KMA, KFS which issue conflicting regulations, and conflicts when some members shun away from activities of the resource group. These conflicts

are resolved through awareness creation on the importance of a CCA and the role of BMU, BMU committee for conflict resolution, involving KFS, village elders and the Kenya police. Members who shun away from group activities do not benefit from group activities proceeds.

In Kibwaga, the main types of conflicts amongst resource users were embezzlement of resource user group funds, lack of transparency e.g., overpricing of goods during marketing. These conflicts are resolved through Saccos that control prices and avoid fund embezzlement. In Bigamtangizeni, the main types of conflicts amongst resource users were some boat operators not reporting to work and defaulting on loans. These conflicts are resolved through negotiations, gentleman's agreement, and addressing matters to area Chief.

To further address violence and insecurity in the community, the following measures should be taken into consideration: a) regulate unsustainable fishing by fishers from Pemba Island; b) the government should empower communities through provision of funds to enable resource maintenance and conservation; c) communities involved in conservation should benefit from revenues generated from the project; d) ensure stricter enforcement of regulations to control unsustainable fishing and use of illegal fishing gears e.g. spear guns and monofilaments; e) Kenya Wildlife Service to control or contain wild animals (for example monkeys) since they disrupt/destroy farms; f) BMUs to provide security at landing sites; g) create awareness on resource use; and, h) ensure communities concerns to be captured in Blue Economy discussions.

4.3.3 The economic and social context

All communities indicated that the prices and cost of extraction of the resources had been increasing, with the high cost of extraction of resources attributed to: scarcity of resources, change in technology e.g., use of motorized boats, changing rainfall patterns due to climate change, destruction of fishing habitats, and, competition from more people accessing the resources. In Kibwaga, there has been destruction of the shrine (Kaya Tiwi) and drilling that affected fish habitats such as corals and caused fish to migrate offshore. All communities said that there is some form of taxation either by county or national government on resources extracted but there were no extraction fees enforced at the community level in Gazi and Makongeni. However, communities in Chale, Kibuyuni, Shimoni, Vanga, Bigamtangizeni indicated that they were charged extraction fees at the community level. Access to education opportunities is limited as primary and secondary schools were insufficient. Similarly, health centers are inadequate as, for instance, only one dispensary served the residents in Gazi. In Makongeni, the primary and secondary schools were insufficient with only one primary school, one nursery school, and no secondary school, and the health centers were not functional; hence the community got health services at Gazi which had only one functional dispensary. In Chale, access to education opportunities was a challenge as primary and secondary schools were insufficient. There was only one primary school, two nursery schools, and no secondary school existed to serve the locals, and no health facilities too. The community members therefore accessed health services at Kinondo, Msambweni, or Gazi. Kibuyuni had only one primary school and no health facility, and the community consequently accessed health services from Fikirini. Shimoni had four nursery schools, three primary schools, and one secondary school, the rest were privately owned, indicating that public primary and secondary schools were insufficient. Additionally, there was only one government dispensary, and the rest are privately owned. Vanga had only one nursery school (ECDE), one secondary school and one primary school, and only one government dispensary. Bigamtangizeni has two nursery schools, one primary school, and one government dispensary serving the residents. The lack of education and health facilities notwithstanding, the county government of Kwale had subsidized school fees and cost of health for the communities, thus little or no household income was used to support health and education.

The main markets for extracted resources in Gazi were the following: Mombasa; hotels in Diani which purchased fish; Britain for carbon credits; and the Philippines for seaweed. In Makongeni, the main markets for extracted resources were the local markets in Ukunda. In Chale, resources were sold in Ukunda, Mombasa, Kona ya Chale, Makongeni, and Pavi Cooperative (a Base Titanium Company initiative). In Kibuyuni, the communities sold extracted resources at Kibuyuni shopping center and in Tanzania. In Shimoni, the main markets for extracted resources were Msambweni, Tiwi, Ukunda,

Likoni, Shimoni hotels, Shimoni center and Kilifi, while in Vanga, the main markets for extracted resources were Ukunda, Mombasa, Vanga, Kinango, and markets out of the country which purchased mainly octopus. In Kibwaga, the main markets were local hotels and cottages, while the community in Bigamtangizeni sold their resources in Kongowea, local hotels, cottages, and in Tanzania.

4.3.4 Environmental Context

Most of the communities think about the future of the resources as they extract them, indicating that they are conscious of environmental sustainability. The communities believe that the extraction of the resources does not affect the existence of the resources in the environment. However, this may not be true as the resources are interdependent and extracting one resource will influence the availability of another resource. Asked on whether the communities have programs to ensure sustainability and restoration of the resources, the communities in Gazi and Makongeni indicated that they have mangrove planting and restoration programs such as Mikoko Pamoja.

The community in Chale indicated that they were restricting the harvesting of trees near shrines and reporting rogue resource users. In Shimoni, they had coral restoration in Wasini, Shimoni, and Mkwiro, and regulated unsustainable fishing methods, e.g., patrols to counter spearguns (used for shooting fish). The blood from fish harvested using this method scares other fish, and they migrate further to other areas. At the current rate of resource extraction, the communities felt that the resources will be depleted while others felt that they will still be available in 20 years to come provided the right harvesting methods and tools are used, and everyone including the young ones is involved in conservation.

The communities were asked the actions to be taken to ensure sustainable extraction. Some suggested improved mangrove planting for ecosystem restoration and carbon credit, seagrass conservation, and planting of alternative trees such as Casuarina. In Makongeni and Chale, the communities suggested embracing alternatives, e.g., apiculture and mariculture. The groups in Kibuyuni advocated for implementing government-set regulations on resource use, regulation of unwanted fishing gears, e.g., spearguns, and having motorized boats to fish in the offshore and allow replenishment of the inshore waters. In Vanga, the communities argued for awareness creation, community policing/ enforcement, and adhering to set regulations, e.g., a ban on cutting mangroves.

On the source of pollution for their resources, the community in Gazi indicated that the company Base Titanium had created a dam along the river Mkurumudzi for cooling of plant. The polluted water is released back into the river and drains to the ocean. There were also cases of plastic pollution, as noted by most communities, air pollution from factories, forest fires, etc. Some of the approaches used to control pollution have been collecting plastic for recycling, awareness creation, involvement of children in cleaning the environment, community policing, and complaints to the relevant government authorities and industries.

All the groups had heard about climate change which had caused unpredictable weather patterns, low rainfall, drying of rivers and streams thus affecting shrimp and livestock farming, and low fish catches. To tackle the adverse effects of climate change, some groups had resulted in planting and conservation of mangroves by BMUs and CFAs; adopting alternative livelihood sources, e.g., shifting from fishing to tour guiding; seasonal dependence on the ocean; joining merry-go-rounds; adopting irrigation farming and sorghum farming; and resulting to prayers in Kayas (traditional shrines for religious ceremonies and other rituals).



Plate: 13 Mangrove watch tower for conservation in Gazi village ©UNESCO-IOC



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5. Conclusion

This study sought to understand poverty and gender perspectives in coastal Kenya in order to contribute to the implementation of marine spatial planning. The shared resources available in Kwale county included: marine resources e.g., open waters, beaches, corals, seagrasses, and mangroves; and coastal resources e.g. farmlands, forests, settlements, minerals and urban areas among others. The common economic activities in the county include formal employment, tourism, fishing and fisheries related activities, crop and animal farming, small and peasantry trade, conservation, among others. These resources and economic activities alongside other determinants of poverty as described in the Sida MDPA framework have influenced the evolution of poverty and gender roles in the county, which are critical for proposed marine spatial planning activities in the county. Across Kwale County, gender differences in access and use of resources are prevalent.

On the prevalence of the natural resources that the communities depend on for their livelihoods, there were mixed reactions with some communities indicating that the resources were dwindling due to extensive harvests, while some communities indicated that there were fluctuations on the availability of the resources overtime. Some communities indicated that resources are being depleted due to changing climatic patterns, unsustainable fishing e.g., use of ring nets, ineffective enforcement, cutting down of trees along the river to pave way for farming etc., while other communities indicated that fishing was improving in the area. The communities also indicated that they do not pay any money to access the resources, as the access was open and accessible. In some cases, however, the communities said that the access to the resources was governed by fishing laws.

In absence of the marine and coastal resources, the communities indicated that they would seek alternative sources of incomes such as: farming, investment e.g., table banking/merry-go-round, small businesses, planting of trees, bodaboda business, apiculture within mangroves, mariculture, irrigation farming, livestock and poultry farming, migration to other areas, goat farming etc.

To ensure sustainability of marine and coastal resources and posterity for future generations, the communities indicated that they would continue planting of mangroves for carbon credits; create awareness to their children to improve conservation; develop partnerships with different resource user groups in resources conservation. They also indicated the need to avoid pollution of the resources, investing in security of resources by employing rangers, shunning away from the use of unsustainable fishing gears e.g., spearguns; and having a community conserved area. Other interventions included regulating unsustainable fishing methods, restoring coral in Shimoni, Wasini, Mkwiro, and diversification into mariculture.

There were mixed reactions on whether women had same opportunities in the community as men. Most men indicated that they had same opportunities as women, but women refuted the claim and said that they experience cultural and traditional barriers. Additionally, the opportunities available for men were in most cases different from the ones available for women

The communities identified several issues that would prevent men, women and youth from choosing any livelihood activity they would want to undertake. Some of these issues included delayed gratification or lack of instant benefit from use of resources, culture and traditions, inability to undertake a certain livelihood activity, lack of capital to start business enterprises, women shunning away from group responsibilities where men were involved.

The communities were asked on the changes they were afraid of in the marine and coastal spaces were to be developed. They indicated a fear for land grabbing and evacuation due to proposed new developments, pollution, uncertainties of benefits when changes take place, and fear of the shrine being taken over by National Museum of Kenya once revived. Others feared destruction of seagrass by fisherfolk, enforcement of the gazettement of Diani area as a marine park which will take away their fishing are, and unemployment and poverty due to lack of industries or fishing boats that can access offshore. There were also fears on deterioration or degradation of seaweed farms, increase in depth of the ocean due to dredging making fishing harder, and skewed permits system in favour of modern investors e.g., Huawen fish processing factory is licensed to use ring net for anchovies whereas local fishers are not allowed to use the same.

The communities were asked on where they think oil and gas exploration and exploitation was likely to take place, and most indicated that Chale was a good candidate.. According to the communities, the likely implications of oil and gas mining would be pollution of the ocean through oil spillage as well as air pollution that would further exacerbate the effects of climate change; decline in fishing and livelihoods of those who depend on it; coral death due to sedimentation; damage of fishing activities and migration to fish to other areas etc. The communities also indicated that they were aware of proposed port and shipping activities in Shimoni area.

The communities in Kwale County have variety of resource user associations which comprise of both women and men. In nearly all the resource user associations, women were given leadership positions, and the communities felt that women's opinions were listened to, respected, and considered in decision-making matters. However, there were mixed reactions regarding women representation at national and county government administrations.

Communities also indicated that there are several challenges facing resource user associations such as mistrust between members of the groups or associations, between women and men, and between fishers fishing beyond their jurisdictions. The common conflicts reported included theft of fish from common project catch, fisherfolk and fish traders over pricing, recording of fish at landing sites, some fisherfolk evading and failing to declare their catch, and boat operators ferrying tourists belonging to hoteliers without the consent of the hoteliers. Others were sale of land without consent, corrupt practices in the groups with elections taking long to be conducted, leaders not involving community members in times of decision, removal of buoys serving as boundaries to Community Conserved Area (CCA) by fisherfolk against the consent, and misappropriation or embezzlement funds.

The frequency of conflicts in these communities varied with those of women in Makongeni and men in Chale occurring more frequently, while the rest took a longer time to arise. The communities had devised different ways of resolving conflicts including seeking assistance of county fisheries department for BMUs, using internal group dispute resolution mechanisms, use of court processes for land issues, suspending problematic members from association, and addressing issues through local administration e.g. chief. In most cases, group justice was served after a resolution was sought, but in some cases in Makongeni, Shimoni, and Bigamtangizeni, the communities indicated that justice was not achieved.

Most members of the communities in Kwale County were aware of the rules and regulations that govern resource use and extraction. The communities felt that there was laxity in enforcement of these rules and regulations. Communities indicated that there are local arrangements besides the formal ones by the government in the community governing the exploitation of the resource such as identification documents that gave them some rights, and patrolling and protecting the mangrove forest from illegal extractors. Most people indicated that they knew their rights but there were mixed reactions on whether the local authorities e.g., chiefs, ward representatives, MCAs respect the rights.

All communities said that there are different types of conflicts amongst resource users but rarely do the conflicts result into violence amongst individuals or groups. Nearly all communities indicated that they feel secure extracting resources. All communities indicated that the resources' prices and cost of extraction have been increasing. The high cost of extraction of resources was attributed to scarcity of resources, changes in technology, e.g., the use of motorized boats for fishing, changing rainfall patterns, climate change, destruction of fishing

habitats, and competition as more people access the resources. In Kibwaga, the Kaya Tiwi shrine's destruction and drilling has affected fish habitats such as corals and caused fish to migrate offshore. All communities said there was a form of taxation by the County or national government on resources extracted. They also indicated that the county government subsidizes education and health hence they do not spend a significant part of their income on school fees and health.

Most communities think about the future of the resources as they extract them, indicating their consciousness about the sustainability of the environment. They also believe that extraction of the resources does not affect the existence of the resources in the environment. However, this may not be true as the resources are interdependent and extracting one resource will influence the availability of another. They also felt that the resources would still be available in 20 years, provided the proper harvesting methods and tools are used, and everyone, including the young ones, are involved in conservation. To ensure sustainable extraction, communities indicated mangrove planting for carbon credit, seagrass conservation, and planting of alternative trees such as Casuarina were important. They also suggested embracing alternatives, e.g., apiculture and mariculture; implementation of government-set regulations on resource use; regulation of unwanted fishing gears, e.g. spearguns, and having motorized boats to fish in the deep sea and allowing replenishment of the inshore waters.

On pollution, the communities indicated that water for cooling plants of a mineral sands operator are released back into the river, which eventually drained into the ocean. There were also cases of plastic pollution, noted by most communities, while some reported air pollution from factories and forest fires etc. Some of the approaches used to control pollution have been collecting plastic for recycling, awareness creation, involvement of children in cleaning the environment, community policing, and complaints to the relevant government authorities and industries for action. All the groups had heard about climate change and indicated that it had caused impacts on the resources. To tackle the adverse effects of climate change, some groups have resulted in planting and conservation of mangroves by BMUs and CFAs as well as adopted alternative livelihood sources.

It is believed that the issues represented by the coastal communities in coastal Kwale are representative of those of other communities in the country. MSP planners need to consult the communities before deciding on the demarcation and allocation of seascape to avoid conflicts with the communities.

More often than not community voices and aspirations have been neglected in design and implementation of marine spatial plans, often resulting to conflicts from communities who feel left out in the process. This study has provided some critical information on the available resources and resource use by communities along the coastal area of Kwale County. As the country progresses towards development and implementation of a marine spatial plan, it is important to use this information and include the views of the community in the MSP.


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APPENDICES

A1: Household Survey Questionnaire

MSPPG

Greetings. My name is XXXX. We are doing a survey on behalf of the government to inform the future management of marine and coastal resources in this area through a process called Marine Spatial Planning. We would like to ask you about how your household derives its income and the way in which you benefit from coastal activities, and we would like your opinion on how future developments might affect your household. We need about 45 minutes of your time. Our questions relate to the whole household, so we need to talk to at least one senior decision maker in the household, but it will be even better if we could jointly interview both a man and a woman of the household. Your answers are confidential, and our report will not identify individuals. I will only record your name and contact details so that my supervisor can verify the interview. Would your household consent to being interviewed?

◯ Yes ◯ No

DEMOGRAPHIC AND SOCIO-ECONOMIC BACKGROUND

Please could you give the following details about the household head?

_____

What gender is the household head?

◯ Male ◯ Female ◯ Other

◯ Prefer not to say

What age is the household head?

_____

Marital status

◯ Never married
◯ Married
◯ Previously married
◯ Other
◯ Don't know

Level of education completed:

◯ None
◯ Some schooling but no level completed
◯ Primary
◯ Secondary
◯ Higher education
◯ Don't know

How many members are there in this household in the following age groups?

_____

Adults (age 60+)

_____

Adults (age 18-59)

_____

Youth (age 13-17)

_____

Children (age 0-12)

_____

To which religious group does this household belong?

- ◯ None/Atheist or Agnostic
- ◯ Roman Catholic Christianity
- ◯ Islam
- ◯ Zionist
- ◯ Protestant Christianity
- ◯ Traditional
- ◯ Other
- ◯ Don't know

How long have you been resident in this village / area (in years)?

_____

Where did you move here from?

- ◯ Another village in this county
- ◯ Another county
- ◯ Another country

RESIDENCE AND NEIGHBOURHOOD CHARACTERISTICS

What are the main house's walls made of?

- ◯ Mud
- ◯ Mud bricks – local/homemade
- ◯ Thatch/leaf/reed/palm/ bamboo
- ◯ Commercial bricks
- ◯ Cement blocks
- ◯ Other
- ◯ Don't know

What is the roof made of?

- ◯ Thatch/leaf/reed/palm/ bamboo
- ◯ Corrugated iron
- ◯ Mud
- ◯ Cement/concrete
- ◯ Other
- ◯ Don't know

What is the household's main source of energy for cooking and lighting?

- ◯ Firewood
- ◯ Batteries
- ◯ Solar panel
- ◯ Public electricity grid
- ◯ Oil/Paraffin/kerosene
- ◯ Candles
- ◯ Other
- ◯ Don't know

What is the household's main source of water?

River | Well or borehole | Tap connected to public water system | Rainwater storage | Other | Don't know

Does this household own any of the following?

Bicycle | Motorbike | Car | Phone | Radio | TV | Fridge | Mobile phone

Canoe or rowing boat | Dhow (sailboat) | Motorboat | Tuktuk | Minibus | Truck | House

Farmland | Don't know

About how long would it take to get from your home to the nearest school if you walked?

- ◯ 10 minutes or less
- ◯ 11-20 minutes
- ◯ 21-30 minutes
- ◯ More than 30 minutes
- ◯ Don't know

About how long would it take to get from your home to the nearest market if you walked?

- ◯ 10 minutes or less
- ◯ 11-20 minutes
- ◯ 21-30 minutes
- ◯ More than 30 minutes
- ◯ Don't know

About how long would it take to get from your home to the nearest clinic by motorized transport?

- ◯ 10 minutes or less
- ◯ 11-20 minutes
- ◯ 21-30 minutes
- ◯ More than 30 minutes
- ◯ Don't know

EMPLOYMENT AND INCOME

Has anyone in this household earned income from formal or casual employment here in this area in the last 3 years?

◯ Yes ◯ No ◯ Don't know

» Household member's details

1

Please give details for each of these household members:

*** Gender**

◯ Male ◯ Female ◯ Other

*** Type of occupation**

- ◯ Self-employed/ informal trade
- ◯ Formally registered business
- ◯ Employed in community
- ◯ Employed outside of community

*** Economic sector related to occupation**

- ◯ None
- ◯ Farming livestock
- ◯ Farming crops
- ◯ Aquaculture
- ◯ Fishing
- ◯ Fish processing
- ◯ Forest extraction
- ◯ Oil / gas
- ◯ Salt
- ◯ Mineral extraction
- ◯ Manufacturing
- ◯ Transport
- ◯ Tourism
- ◯ Buying/selling goods
- ◯ Service industry
- ◯ Health and education
- ◯ Other

When was their last month of paid employment (year and month)?

_____

*** Year**

- ◯ 2021
- ◯ 2020
- ◯ 2019
- ◯ 2018
- ◯ before 2018

*** Month**

- ◯ January
- ◯ February
- ◯ March
- ◯ April
- ◯ May
- ◯ June
- ◯ July
- ◯ August
- ◯ September
- ◯ October
- ◯ November
- ◯ December

*** What is or was their monthly income (before tax)?**

Please divide these 20 beans to show how much the following contribute to your household's monetary income in a typical month.

Employment

Please count the number of beans and enter here:

Own fishing or other livelihood activities involving coastal and marine resources or coastal tourists

Please count the number of beans and enter here:

Own farming or livelihood activities involving upland resources

Please count the number of beans and enter here:

Pensions and welfare

Please count the number of beans and enter here:

Remittances

Please count the number of beans and enter here:

_____

LIVELIHOOD ACTIVITIES AND INCOME

» Fishing by boat

I am going to ask separately about fishing by boat and fishing on the shore. Let's start with boat-based fishing. How many men in this household have regularly gone fishing out to sea (by motorised boat, dhow or canoe) in the last 12 months?

_____

And how many women?

_____

» » Boat-based fishing details

Where off the coast did most of this fishing take place?

- ◯ Offshore from around here
- ◯ Further to the north of here
- ◯ Further to the south of here
- ◯ Don't know

Where do you do most of this fishing?

- ◯ Offshore islands
- ◯ Offshore reefs
- ◯ Open sea
- ◯ Don't know

What type of boat is used for this?

- ◯ Dhow
- ◯ Motorised boat
- ◯ Canoe
- ◯ Other
- ◯ Don't know

Does this household own the boat?

- ◯ Yes
- ◯ No
- ◯ Shared ownership
- ◯ Don't know

What were the main types of species caught? (up to 3)

_____

1st choice

- Demersal fish
- Small pelagics
- Large pelagics
- Turtles
- Dolphins or whales
- Prawns
- Lobster
- Sharks and rays
- Other
- Don't know

2nd choice

- Demersal fish
- Small pelagics
- Large pelagics
- Turtles
- Dolphins or whales
- Prawns
- Lobster
- Sharks and rays
- Other
- Don't know

3rd choice

- Demersal fish
- Small pelagics
- Large pelagics
- Turtles
- Dolphins or whales
- Prawns
- Lobster
- Sharks and rays
- Other
- Don't know

Was this fishing mainly for household consumption or for sale?

- ◯ Household consumption
- ◯ Sale
- ◯ Don't know

Approximately what percentage of the catch was sold?

_____

Approximately how much income (in Ksh) was earned from offshore fishing in the last month?

_____

Approximately how much income (in Ksh) was earned from offshore fishing in the last 12 months?

_____

How do you rate the abundance of offshore fishery stocks relative to their historical levels?

- ◯ Almost gone
- ◯ Severely reduced
- ◯ Somewhat reduced
- ◯ About the same
- ◯ More abundant
- ◯ Don't know

» Men onshore fishing

How many men in the household have regularly gone fishing from the shore (in tidal or shallow areas) in the last 12 months?

_____

» » Men onshore fishing details

What were the 3 main types of species caught or collected at the shore, in order of importance?

1st choice

Finfish	Prawns	Lobster
Sharks and rays	Crabs	Octopus
Squid	Turtles	Sea cucumber
Shellfish	Seaweed or sea grass	

2nd choice

Finfish	Prawns	Lobster
Sharks and rays	Crabs	Octopus
Squid	Turtles	Sea cucumber
Shellfish	Seaweed or sea grass	

3rd choice

Finfish	Prawns	Lobster
Sharks and rays	Crabs	Octopus
Squid	Turtles	Sea cucumber
Shellfish	Seaweed or sea grass	

Where do you do most of this fishing?

- ◯ River or estuary
- ◯ Reef
- ◯ Mangrove creeks
- ◯ Seagrass areas
- ◯ Sand or mudflat areas
- ◯ Off the beach
- ◯ Don't know

How do you rate the abundance of these fishery stocks relative to their historical levels?

- ◯ Almost gone
- ◯ Severely reduced
- ◯ Somewhat reduced
- ◯ About the same
- ◯ More abundant
- ◯ Don't know

Approximately what percentage of these catches were sold?

_____

Approximately how much income (in Ksh) did this earn in the last month?

_____

Approximately how much income (in Ksh) did this earn in the last 12 months?

_____

» Women onshore fishing

How many women in the household have regularly gone fishing at the shore in the last 12 months?

_____

» » Women inshore fishing details

What were the 3 main types of species caught or collected at the shore, in order of importance?

_____

1st choice

- Finfish
- Sharks and rays
- Squid
- Shellfish
- Prawns
- Crabs
- Turtles
- Seaweed or sea grass
- Lobster
- Octopus
- Sea cucumber

2nd choice

- Finfish
- Sharks and rays
- Squid
- Shellfish
- Prawns
- Crabs
- Turtles
- Seaweed or sea grass
- Lobster
- Octopus
- Sea cucumber

3rd choice

- Finfish
- Sharks and rays
- Squid
- Shellfish
- Prawns
- Crabs
- Turtles
- Seaweed or sea grass
- Lobster
- Octopus
- Sea cucumber

Where do you do most of this fishing?

- ◯ River or estuary
- ◯ Reef
- ◯ Mangrove creeks
- ◯ Seagrass areas
- ◯ Sand or mudflat areas
- ◯ Off the beach
- ◯ Don't know

How do you rate the abundance of these fishery stocks relative to their historical levels?

- ◯ Almost gone
- ◯ Severely reduced
- ◯ Somewhat reduced
- ◯ About the same
- ◯ More abundant
- ◯ Don't know

Approximately what percentage of these catches were sold?

_____

Approximately how much income (in Ksh) did this earn in the last month?

_____

Approximately how much income (in Ksh) did this earn in the last 12 months?

_____

» Fish processing and trading

Have any members of the household been regularly involved in buying fish or other sealife from fishers to process and sell?

- ◯ Yes
- ◯ No
- ◯ Don't know

» » Fish trade details

How much of this work was by female members of the household?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

Approximately how much income (in Ksh) did this earn in the last month?

_____

Approximately how much income (in Ksh) did this earn in the last 12 months?

_____

» Salt

Has anyone in this household been regularly involved in salt making in the past 12 months?

- ◯ Yes
- ◯ No
- ◯ Don't know

» » Salt details

How much of this work was by female members of the household?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

How much income (in Ksh) did your household earn from this in the last month?

_____

And approximately how much income (in Ksh) was earned in the last year?

» Mariculture

Does this household undertake any mariculture (farming fish, prawns or seaweed) as a business?

◯ Yes ◯ No ◯ Don't know

» » Mariculture details

What type of mariculture?

☐ Fish
☐ Prawns
☐ Seaweed
☐ Don't know

What size area do you have for mariculture? (acres)

_____

How much of the mariculture work is done by female members of the household?

◯ Most or all
◯ More than half
◯ Less than half
◯ Little or none
◯ Don't know

How much income (in Ksh) did your household earn from this in the last month?

_____

And approximately how much income (in Ksh) was earned in the last year?

_____

» Tourism

Has anyone in this household regularly provided guiding or other services to tourists in the last 3 years?

◯ Yes
◯ No
◯ Don't know

» » Tourism details

How much income (in Ksh) was earned from this in the last month?

_____

And in the last 12 months (in Ksh)?

_____

How much of this was earned by female members of the household?

- ☐ Most or all
- ☐ More than half
- ☐ Less than half
- ☐ Little or none
- ☐ Don't know

How much would have been earned in a year before the pandemic?

_____

» Timber & poles

Has anyone in this household regularly cut timber or poles from mangroves or other forests in the last year?

◯ Yes ◯ No ◯ Don't know

» » Timber & poles details

Approximately how many logs were cut for timber in the last two months?

_____

Approximately how many of these were from mangroves?

_____

How much income (in Ksh) was earned from timber in the last two months?

_____

And approximately how much in the last year (in Ksh)?

_____

Approximately how many scores of poles were harvested in the last two months?

_____

Approximately how many of these were from mangroves?

_____

How much income (in Ksh) was earned from poles in the last two months?

_____

And approximately how much in the last year (in Ksh)?

_____

» Charcoal

Has anyone in this household regularly made charcoal from mangroves or other forests in the last year?

- ◯ Yes
- ◯ No
- ◯ Don't know

» » Charcoal details

Approximately how many bags of charcoal were produced in the last two months?

_____

Approximately how many of these were from mangroves?

_____

How much income (in Ksh) was earned from selling charcoal in the last two months?

_____

And approximately how much in the last year (in Ksh)?

_____

» Firewood

Does this household regularly collect firewood?

- ◯ Yes
- ◯ No
- ◯ Don't know

How much of the firewood collecting is done by female members of the household?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

How many headloads were collected in the last month?

_____

How much of the firewood collected comes from mangroves?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

What percentage of firewood collected is sold?

_____

» Wild food and medicines

Has anyone in the household regularly collected wild vegetables, fruits or medicines in the past year?

- ◯ Yes
- ◯ No
- ◯ Don't know

» » Wild food & medicine details

How much of this work was done by female members of the household?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

What proportion of the food collected was sold?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

How much was earned from this in the last month (in Ksh)?

_____

Approximately how much was earned from this in the last year (in Ksh)?

_____

» Hunting

Has anyone in the household regularly hunted for bush meat or wild honey in the past year?

- ◯ Yes
- ◯ No
- ◯ Don't know

» » Hunting details

Which of these do they hunt for the most? (top 3)

_____

1st choice

- ◯ Mangrove honey
- ◯ Forest honey
- ◯ Forest animals and birds
- ◯ Coastal and mangrove birds
- ◯ Don't know

2nd choice

- ◯ Mangrove honey
- ◯ Forest honey
- ◯ Forest animals and birds
- ◯ Coastal and mangrove birds
- ◯ Don't know

3rd choice

- ◯ Mangrove honey
- ◯ Forest honey
- ◯ Forest animals and birds
- ◯ Coastal and mangrove birds
- ◯ Don't know

What proportion of this was sold?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

How much was earned from this in the last month (in Ksh)?

_____

Approximately how much was earned in the last year (in Ksh)?

_____

» Plant raw materials

Has anyone in the household harvested reeds, sedges, grasses or palm leaves in the last year?

- ◯ Yes
- ◯ No
- ◯ Don't know

» » Plant raw materials details

How much of this work was done by female members of the household?

- Most or all
- More than half
- Less than half
- Little or none
- Don't know

What proportion of the amount collected was sold?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

How much was earned from this in the last month (in Ksh)?

_____

Approximately how much was earned in the last year (in Ksh)?

_____

» Mining

Has anyone in the household regularly mined for sand or minerals in the last year?

- ◯ Yes
- ◯ No
- ◯ Don't know

» » MIning details

How much of this work was done by female members of the household?

- Most or all
- More than half
- Less than half
- Little or none
- Don't know

What proportion of the amount collected was sold?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

How much was earned from this in the last month (in Ksh)?

_____

Approximately how much was earned in the last year (in Ksh)?

_____

» Making products for sale

Has anyone in the household regularly prepared food, drinks or hand-made items for sale in the past 12 months?

- ◯ Yes
- ◯ No
- ◯ Don't know

» » Making products - details

Approximately how much was earned from this in the last month (in Ksh)?

_____

Approximately how much was earned in the last year (in Ksh)?

_____

How much of this income was generated by female members of the household?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

Approximately what proportion of the income was from sales to tourists?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

» Crops

Does this household engage in growing crops, fruits, nuts or coconuts?

- ◯ Yes
- ◯ No
- ◯ Don't know

» » Crops details

How many banana plants do you have?

_____

How many coconut palms?

_____

How many fruit or nut trees?

_____

What area of land do you cultivate (acres)?

_____

What are your main crops grown?

- [ ] Rice
- [ ] Maize
- [ ] Potatoes or cassava
- [ ] Fruit
- [ ] Beans or other legumes
- [ ] Vegetables
- [ ] Other
- [ ] Don't know

Approximately what proportion of this work was done by female members of the household?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

What proportion of the household's production was sold in the last year?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

What proportion of your production was sold?

- ◯ Most or all
- ◯ More than half
- ◯ Less than half
- ◯ Little or none
- ◯ Don't know

How much income was generated in the last year (in Ksh)?

_____

» Livestock

Do you keep poultry?

- ◯ Yes
- ◯ No
- ◯ Don't know

Does this household have any other livestock?

- ◯ Yes
- ◯ No
- ◯ Don't know

» » Livestock details

How many pigs do you have?

_____

How many goats or sheep do you have?

_____

How many cattle do you have?

_____

How many horses or donkeys?

_____

How much income was generated from poultry and livestock in the last month (in Ksh)?

_____

And in the last year (in Ksh)?

_____

SECURITY AND VOICE

Please rate the following on a scale from 1 = strongly disagree to 7 = strongly agree:	1	2	3	4	5	6	7
My family functions well for all members.	◯	◯	◯	◯	◯	◯	◯
My family's day to day interactions are peaceful.	◯	◯	◯	◯	◯	◯	◯
Family members accommodate each other.	◯	◯	◯	◯	◯	◯	◯
Please rate the following on a scale from 1 = strongly disagree to 7 = strongly agree:	1	2	3	4	5	6	7

Our community is harmonious.	◯	◯	◯	◯	◯	◯	◯
Life in this area is very peaceful.	◯	◯	◯	◯	◯	◯	◯
There is conflict over access to resources in this area.	◯	◯	◯	◯	◯	◯	◯
Local government officials are trustworthy.	◯	◯	◯	◯	◯	◯	◯
Households are able to voice their concerns about the use and management of our coastal and marine areas through organisational structures.	◯	◯	◯	◯	◯	◯	◯
I feel that our concerns about marine and coastal management are heard.	◯	◯	◯	◯	◯	◯	◯

Are any men in the household part of any community organisations? Please select:

- ◯ Church, mosque or other local religious group
- ◯ Fishing association or co-operative
- ◯ Farming association or co-operative
- ◯ Business association or cooperative
- ◯ Political organisation
- ◯ Neighbourhood security group
- ◯ Environmental or conservation association
- ◯ Educational, developmental or social welfare association
- ◯ Don't know

Are any women in the household part of any community organisations? Please select:

- ◯ Church, mosque or other local religious group
- ◯ Fishing association or co-operative
- ◯ Farming association or co-operative
- ◯ Business association or cooperative
- ◯ Political organisation
- ◯ Neighbourhood security group
- ◯ Environmental or conservation association
- ◯ Educational, developmental or social welfare association
- ◯ Don't know

To what extent are women involved in decision-making in the house, on:	Seldom or Not at all	Sometimes	Often	Mostly or Always
How the household earns an income	◯	◯	◯	◯
How the household spends its money	◯	◯	◯	◯
Where the household lives	◯	◯	◯	◯
Children's schooling	◯	◯	◯	◯

Having children	○	○	○	○
Women's occupations and activities	○	○	○	○

Please say how much you agree with the following, based on a scale from 1 = strongly disagree to 7 = strongly agree

The coastal and marine life around here is healthy, diverse and productive.

○—○—○—○—○—○—○

Strongly disagree | Disagree | Somewhat disagree | Neutral | Somewhat agree | Agree | Strongly agree

It is important to ensure that inshore fishing areas are not impacted by other developments.

○—○—○—○—○—○—○

Strongly disagree | Disagree | Somewhat disagree | Neutral | Somewhat agree | Agree | Strongly agree

There are too many restrictions on fishing in this area, like closed areas, closed seasons or permits.

○—○—○—○—○—○—○

Strongly disagree | Disagree | Somewhat disagree | Neutral | Somewhat agree | Agree | Strongly agree

Fishing regulations in this area are well enforced.

○—○—○—○—○—○—○

Strongly disagree | Disagree | Somewhat disagree | Neutral | Somewhat agree | Agree | Strongly agree

Anyone should be able to fish or harvest resources in this area.

○—○—○—○—○—○—○

Strongly disagree | Disagree | Somewhat disagree | Neutral | Somewhat agree | Agree | Strongly agree

Ecotourism is an important source of income in this area.

○—○—○—○—○—○—○

Strongly disagree | Disagree | Somewhat disagree | Neutral | Somewhat agree | Agree | Strongly agree

Small-scale fishing is threatening the marine life in the area.

○—○—○—○—○—○—○

Strongly disagree | Disagree | Somewhat disagree | Neutral | Somewhat agree | Agree | Strongly agree

An increase in industrial activities along this coast will increase the risk to our marine life.

○—○—○—○—○—○—○

Strongly disagree | Disagree | Somewhat disagree | Neutral | Somewhat agree | Agree | Strongly agree

Our household supports marine wildlife conservation.

Strongly disagree | Disagree | Somewhat disagree | Neutral | Somewhat agree | Agree | Strongly agree

There is a good balance between protection and use of marine resources in this area.

Strongly disagree | Disagree | Somewhat disagree | Neutral | Somewhat agree | Agree | Strongly agree

If the government gets more taxes from big business, it will deliver better services in our area.

Strongly disagree | Disagree | Somewhat disagree | Neutral | Somewhat agree | Agree | Strongly agree

How do you rate the overall level of government services in your local area, including the quality of public roads and recreational spaces?

Very poor | Poor | Below average | Average | Good | Very good | Excellent | Don't know

Which of these marine sectors is a key source of formal employment in your community?

- ◯ Coastal tourism
- ◯ Oil and gas
- ◯ Fish processing
- ◯ Shipbuilding
- ◯ Marine fisheries
- ◯ Ports
- ◯ Aquaculture
- ◯ Transport
- ◯ Marine renewables
- ◯ Desalination
- ◯ Coastal protection
- ◯ Marine biotechnology
- ◯ Don't know

How would you rate the general availability of marine sector formal jobs for men, women and youth in your community? (on a scale of 1 (not available) to 7 (abundant))

_____

For men

1 | 2 | 3 | 4 | 5 | 6 | 7

For women

1 2 3 4 5 6 7

For youth

1 2 3 4 5 6 7

Which types of development in this area would provide this household with the best opportunities for income? Rank in order of preference

_____

1st choice

- ◯ Coastal tourism
- ◯ Shipbuilding
- ◯ Aquaculture
- ◯ Desalination
- ◯ Don't know
- ◯ Oil and gas
- ◯ Marine fisheries
- ◯ Transport
- ◯ Coastal protection
- ◯ Fish processing
- ◯ Ports
- ◯ Marine renewables
- ◯ Marine biotechnology

2nd choice

- ◯ Coastal tourism
- ◯ Shipbuilding
- ◯ Aquaculture
- ◯ Desalination
- ◯ Don't know
- ◯ Oil and gas
- ◯ Marine fisheries
- ◯ Transport
- ◯ Coastal protection
- ◯ Fish processing
- ◯ Ports
- ◯ Marine renewables
- ◯ Marine biotechnology

3rd choice

- ◯ Coastal tourism
- ◯ Shipbuilding
- ◯ Aquaculture
- ◯ Desalination
- ◯ Don't know
- ◯ Oil and gas
- ◯ Marine fisheries
- ◯ Transport
- ◯ Coastal protection
- ◯ Fish processing
- ◯ Ports
- ◯ Marine renewables
- ◯ Marine biotechnology

Would you say that your community is fairly represented in blue sector formal jobs in this area?

- ◯ Yes
- ◯ No
- ◯ Don't know

Would you vote for a situation where job opportunities are increased if it meant loss of access to small scale fishing?

- ◯ Probably
- ◯ Probably not
- ◯ Don't know

And if it only meant loss of access to the marine resources that are collected from the shore at low tide?

- ◯ Probably
- ◯ Probably not
- ◯ Don't know

CHOICE QUESTION

Now I would like to ask you about how you feel about potential future development decisions regarding the use of the coastal and marine areas in this county. The government of Kenya is embarking on the process of Marine Spatial Planning. One of the outcomes of this process will be decisions on the zonation of the coastal and ocean areas for different types of uses, and whether and how this might change from what we have today. Decisions will need to be made about what areas to set aside for protection and tourism, for different types of fishing or aquaculture, for ports and shipping, or for oil and gas exploitation, or other activities. The government will also need to decide how to find a balance between high value activities that generate jobs and taxes to pay for government services, and the status of natural resources from which households derive material and non-material benefits. Depending on how different types of developments or activities are prioritized for this area, it might affect your household in the following ways. Firstly, household income from formal or casual employment could change. It might go up if the area undergoes development in different sectors, or it could even go down if some activities are moved away from this area. Secondly, it might affect the amount of marine resources that you would have access to in inshore and onshore areas. This could change as a result of changing the area available for fishing and/or the impacts from other sectors. Thirdly, it will also affect the level of protection of coastal and marine ecosystems and wildlife, and the capacity of these systems to generate benefits such as recreation or protection from storms, or helping to reduce climate change. This would be determined by how much area is set aside in reserves, as well as how ecosystems might be impacted by other types of developments. In this exercise I am going to show you the potential outcomes of three possible marine spatial planning scenarios, and then I am going to ask you to choose which one you would vote for if you had the choice. We'll do this four times. Before we start, I need to mention the COVID pandemic. We realise that the world has changed a lot during the COVID pandemic. We'd like you to consider the situation before the pandemic, as being the business as usual situation that we expect to return to in the near future. We are comparing everything against this baseline..

---

randomly selected value is: 4

Choice Task 1

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	5,000 Ksh more	25,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	25% less	20% more
Onshore fishing stocks that households have access to	Same as 2019	Same as 2019	50% less
Level of coastal and marine ecosystems protection	Same as 2019	50% more	20% more

- Business as usual
- Option 1
- Option 2

Choice Task 2

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	1,000 Ksh more	5,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	50% less	As in 2019
Onshore fishing stocks that households have access to	Same as 2019	25% less	50% less
Level of coastal and marine ecosystems protection	Same as 2019	25% less	50% more

- Business as usual
- Option 1
- Option 2

Choice Task 3

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	1,000 Ksh more	Same as 2019
Boat-based fishing stocks that households have access to	Same as 2019	20% more	25% less
Onshore fishing stocks that households have access to	Same as 2019	25% less	Same as 2019
Level of coastal and marine ecosystems protection	Same as 2019	20% more	Same as 2019

- Business as usual
- Option 1
- Option 2

Choice Task 4

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	Same as 2019	25,000 Khs more
Boat-based fishing stocks that households have access to	Same as 2019	50% less	Same as 2019
Onshore fishing stocks that households have access to	Same as 2019	20% more	20% more
Level of coastal and marine ecosystems protection	Same as 2019	Same as 2019	25% less

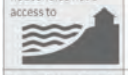
- Business as usual
- Option 1
- Option 2

Choice Task 5

Attribute	Business as usual	Option 1	Option 2
Household income from employment 	Same as 2019 	1,000 Ksh more 	25,000 Ksh more 
Boat-based fishing stocks that households have access to 	Same as 2019	50% less	20% more 
Onshore fishing stocks that households have access to 	Same as 2019	25% less	Same as 2019
Level of coastal and marine ecosystems protection 	Same as 2019	20% more 	Same as 2019

- Business as usual
- Option 1
- Option 2

Choice Task 6

Attribute	Business as usual	Option 1	Option 2
Household income from employment 	Same as 2019 	25,000 Ksh more 	1,000 Ksh more 
Boat-based fishing stocks that households have access to 	Same as 2019	50% less	Same as 2019
Onshore fishing stocks that households have access to 	Same as 2019	50% less	Same as 2019
Level of coastal and marine ecosystems protection 	Same as 2019	25% less	50% more 

- Business as usual
- Option 1
- Option 2

Choice Task 7

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	Same as 2019	5,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	25% less	Same as 2019
Onshore fishing stocks that households have access to	Same as 2019	50% less	25% less
Level of coastal and marine ecosystems protection	Same as 2019	20% more	Same as 2019

- Business as usual
- Option 1
- Option 2

Choice Task 8

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	5,000 Ksh more	25,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	20% more	25% less
Onshore fishing stocks that households have access to	Same as 2019	20% more	20% more
Level of coastal and marine ecosystems protection	Same as 2019	25% less	50% more

- Business as usual
- Option 1
- Option 2

Choice Task 9

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	5,000 Ksh more	Same as 2019
Boat-based fishing stocks that households have access to	Same as 2019	50% less	25% less
Onshore fishing stocks that households have access to	Same as 2019	20% more	50% less
Level of coastal and marine ecosystems protection	Same as 2019	20% more	Same as 2019

- Business as usual
- Option 1
- Option 2

Choice Task 10

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	25,000 Ksh more	Same as 2019
Boat-based fishing stocks that households have access to	Same as 2019	Same as 2019	Same as 2019
Onshore fishing stocks that households have access to	Same as 2019	25% less	Same as 2019
Level of coastal and marine ecosystems protection	Same as 2019	20% more	25% less

- Business as usual
- Option 1
- Option 2

Choice Task 11

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	1,000 Ksh more	25,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	25% less	20% more
Onshore fishing stocks that households have access to	Same as 2019	20% more	50% less
Level of coastal and marine ecosystems protection	Same as 2019	50% more	25% less

- Business as usual
- Option 1
- Option 2

Choice Task 12

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	1,000 Ksh more	5,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	20% more	50% less
Onshore fishing stocks that households have access to	Same as 2019	Same as 2019	25% less
Level of coastal and marine ecosystems protection	Same as 2019	50% more	Same as 2019

- Business as usual
- Option 1
- Option 2

Choice Task 13

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	5,000 Ksh more	1,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	25% less	25% less
Onshore fishing stocks that households have access to	Same as 2019	50% less	20% more
Level of coastal and marine ecosystems protection	Same as 2019	25% less	20% more

- ◯ Business as usual
- ◯ Option 1
- ◯ Option 2

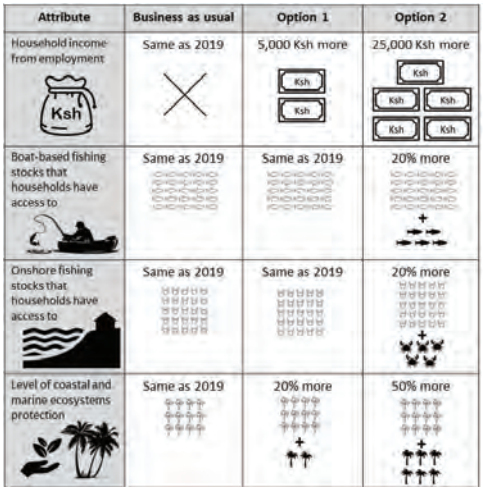
Choice Task 14

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	Same as 2019	1,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	20% more	Same as 2019
Onshore fishing stocks that households have access to	Same as 2019	25% less	50% less
Level of coastal and marine ecosystems protection	Same as 2019	Same as 2019	Same as 2019

- ◯ Business as usual
- ◯ Option 1
- ◯ Option 2

Choice Task 15

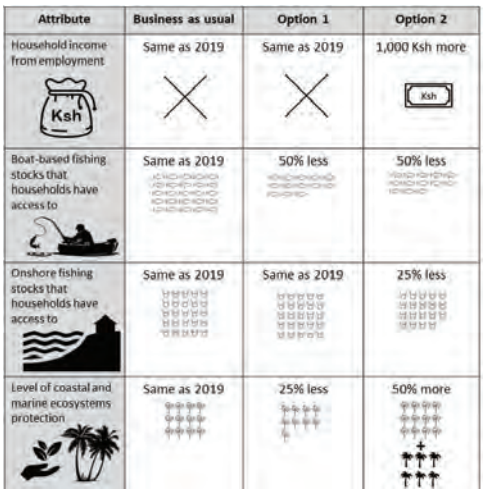
Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	5,000 Ksh more	25,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	Same as 2019	20% more
Onshore fishing stocks that households have access to	Same as 2019	Same as 2019	20% more
Level of coastal and marine ecosystems protection	Same as 2019	20% more	50% more



- ◯ Business as usual
- ◯ Option 1
- ◯ Option 2

Choice Task 16

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	Same as 2019	1,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	50% less	50% less
Onshore fishing stocks that households have access to	Same as 2019	Same as 2019	25% less
Level of coastal and marine ecosystems protection	Same as 2019	25% less	50% more



- ◯ Business as usual
- ◯ Option 1
- ◯ Option 2

Choice Task 17

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	Same as 2019	25,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	Same as 2019	Same as 2019
Onshore fishing stocks that households have access to	Same as 2019	20% more	25% less
Level of coastal and marine ecosystems protection	Same as 2019	25% less	50% more

- Business as usual
- Option 1
- Option 2

Choice Task 18

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	1,000 Ksh more	1,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	25% less	50% less
Onshore fishing stocks that households have access to	Same as 2019	50% less	Same as 2019
Level of coastal and marine ecosystems protection	Same as 2019	Same as 2019	25% less

- Business as usual
- Option 1
- Option 2

Choice Task 19

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	Same as 2019	5,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	50% less	20% more
Onshore fishing stocks that households have access to	Same as 2019	20% more	50% less
Level of coastal and marine ecosystems protection	Same as 2019	20% more	Same as 2019

- Business as usual
- Option 1
- Option 2

Choice Task 20

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	5,000 Ksh more	25,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	20% more	25% less
Onshore fishing stocks that households have access to	Same as 2019	Same as 2019	25% less
Level of coastal and marine ecosystems protection	Same as 2019	20% more	50% more

- Business as usual
- Option 1
- Option 2

Choice Task 21

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	1,000 Ksh more	Same as 2019
Boat-based fishing stocks that households have access to	Same as 2019	Same as 2019	Same as 2019
Onshore fishing stocks that households have access to	Same as 2019	50% less	50% less
Level of coastal and marine ecosystems protection	Same as 2019	20% more	50% more

- Business as usual
- Option 1
- Option 2

Choice Task 22

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	25,000 Ksh more	25,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	25% less	50% less
Onshore fishing stocks that households have access to	Same as 2019	20% more	Same as 2019
Level of coastal and marine ecosystems protection	Same as 2019	25% less	Same as 2019

- Business as usual
- Option 1
- Option 2

Choice Task 23

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	Same as 2019	5,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	20% more	25% less
Onshore fishing stocks that households have access to	Same as 2019	25% less	25% less
Level of coastal and marine ecosystems protection	Same as 2019	50% more	25% less

- Business as usual
- Option 1
- Option 2

Choice Task 24

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	Same as 2019	5,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	20% more	50% less
Onshore fishing stocks that households have access to	Same as 2019	Same as 2019	20% more
Level of coastal and marine ecosystems protection	Same as 2019	20% more	Same as 2019

- Business as usual
- Option 1
- Option 2

Choice Task 25

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	5,000 Ksh more	1,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	20% more	Same as 2019
Onshore fishing stocks that households have access to	Same as 2019	25% less	20% more
Level of coastal and marine ecosystems protection	Same as 2019	25% less	Same as 2019

- Business as usual
- Option 1
- Option 2

Choice Task 26

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	1,000 Ksh more	25,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	25% less	Same as 2019
Onshore fishing stocks that households have access to	Same as 2019	Same as 2019	Same as 2019
Level of coastal and marine ecosystems protection	Same as 2019	25% less	Same as 2019

- Business as usual
- Option 1
- Option 2

Choice Task 27

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	25,000 Ksh more	Same as 2019
Boat-based fishing stocks that households have access to	Same as 2019	50% less	20% more
Onshore fishing stocks that households have access to	Same as 2019	50% less	20% more
Level of coastal and marine ecosystems protection	Same as 2019	20% more	50% more

- Business as usual
- Option 1
- Option 2

Choice Task 28

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	Same as 2019	5,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	25% less	50% less
Onshore fishing stocks that households have access to	Same as 2019	25% less	50% less
Level of coastal and marine ecosystems protection	Same as 2019	20% more	50% more

- Business as usual
- Option 1
- Option 2

Choice Task 29

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	1,000 Ksh more	Same as 2019
Boat-based fishing stocks that households have access to	Same as 2019	20% more	50% less
Onshore fishing stocks that households have access to	Same as 2019	50% less	50% less
Level of coastal and marine ecosystems protection	Same as 2019	25% less	50% more

- Business as usual
- Option 1
- Option 2

Choice Task 30

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	25,000 Ksh more	1,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	25% less	20% more
Onshore fishing stocks that households have access to	Same as 2019	Same as 2019	20% more
Level of coastal and marine ecosystems protection	Same as 2019	20% more	Same as 2019

- Business as usual
- Option 1
- Option 2

Choice Task 31

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	Same as 2019	5,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	Same as 2019	50% less
Onshore fishing stocks that households have access to	Same as 2019	25% less	Same as 2019
Level of coastal and marine ecosystems protection	Same as 2019	25% less	50% more

- ◯ Business as usual
- ◯ Option 1
- ◯ Option 2

Choice Task 32

Attribute	Business as usual	Option 1	Option 2
Household income from employment	Same as 2019	5,000 Ksh more	25,000 Ksh more
Boat-based fishing stocks that households have access to	Same as 2019	Same as 2019	25% less
Onshore fishing stocks that households have access to	Same as 2019	20% more	25% less
Level of coastal and marine ecosystems protection	Same as 2019	20% more	Same as 2019

- ◯ Business as usual
- ◯ Option 1
- ◯ Option 2

Do you believe that the potential increases in household income shown in this question could be achieved as a result of better coastal planning?

- ◯ Yes
- ◯ Not sure
- ◯ No

COVID-19 IMPACT

To what extent was this household's income negatively affected by the COVID-19 pandemic?

- ◯ Very little
- ◯ Moderately
- ◯ Greatly
- ◯ Don't know

Did your use of any of the following increase as a result?

- ☐ Boat based fishing
- ☐ Marine resources harvested at the shore
- ☐ Mangrove wood
- ☐ Sand, salt or other mining
- ☐ Bush and forest resources
- ☐ Don't know

That is the end of the interview. Thank you for your time.

INTERVIEW DETAILS

GPS location

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)



Enumerator

Supervisor

County

- ◯ Kwale
- ◯ Other

Sub-county

- ◯ Kinango
- ◯ Lunga Lunga
- ◯ Matuga
- ◯ Msambweni

Village name

_____

Who was present

- ☐ An adult male
- ☐ An adult female

Was the female able to express herself freely?

- ◯ No
- ◯ Somewhat
- ◯ Yes

Overall quality of the interview (reliability of information given)

- ◯ Poor
- ◯ OK
- ◯ Good

Understanding of the choice question

- ◯ Poor
- ◯ Good

Any other comments, observations or information to take note of

_____

Kenya is increasingly adopting the Blue Economy approach to ensure sustainable development. This approach is expected to be founded on the premise of poverty eradication by providing sustainable livelihoods and decent work, food security, climate change adaptation and mitigation, among other goals. Therefore, while the Blue Economy approach offers vast economic opportunities, it is necessary to ensure an inclusive approach and the social inclusion of the poor and vulnerable, by empowering people, building cohesive and resilient societies, and making institutions accessible and accountable to citizens in a bid to achieve the Sustainable Development Goals.

This joint report published by UNESCO's Intergovernmental Oceanographic Commission (UNESCO-IOC) and the Swedish Agency for Marine and Water Management (SwAM) provides a unique gender lens to assess why and how planning and utilization of the coastal and seascape are expected to influence poverty outcomes in coastal zones of developing countries. A key finding from this study is that women often face limited access to opportunities compared to their male counterparts. The study also indicates that in some communities, cultural norms and societal biases continue to aggravate this vulnerability, exposing women to exploitation and unfair competition. This indeed highlights the need to ensure gender inclusivity in decision-making and resource allocation through initiatives such as Marine Spatial Planning (MSP).

This report is part of a series of publications by UNESCO-IOC and SwAM about a conceptual and analytical framework for incorporating poverty and gender considerations into MSP.