# Workshop on Economic Viability of Small-Scale Fisheries in Africa, Oceanic Bay Hotel, Bagamoyo, Tanzania, 23-25 April 2014

## 1. *Introduction*

A workshop on small-scale fisheries and economic viability took place in Bagamoyo, a small fishing town located in Tanzania. Working Group 2 of a project named *Too Big To Ignore (TBTI) – A global network for Small-Scale Fisheries Research,* organized this workshop in conjunction with African regional node of TBTI. *TBTI* consists of seven Working Groups distributed across all continents. Working Group 2 is in charge of strengthening the base of small-scale fisheries research and presently focuses on Africa, where economic underperformance has been identified as one of the major problems fisheries are facing.

Small-scale fisheries are often marginalized and face many threats including climate change, globalization, competition from industrial fisheries and rapid market shifts. To be able to withstand these threats, fisheries need to be prepared. A major step to achieve this is to help improve their economic viability. Therefore, we need to understand, define and assess economic viability of small-scale fisheries. A literature review was carried out which unveiled that economic viability is currently viewed equal to financial viability, where profit is seen as the main driver. However, this view lacks a comprehensive perspective, especially as many small-scale fisheries do not fish for fortune. We therefore argue that economic viability of small-scale fisheries depends not only on financial outputs but also on social, ecological and governance attributes, which need to be considered when assessing economic viability.

A framework was developed based on the results of the literature review and meetings with several scientists and the most important attributes describing economic viability of small-scale fisheries were identified and discussed. The main challenge was how to incorporate socio-economic criteria into an otherwise straightforward financial assessment. This framework will be used to find out what makes a fishery more viable given the current situation, and less vulnerable to large-scale processes of change. The results will help find solutions to increase the resilience of the assessed small-scale fisheries. The attribute-based framework is divided into two parts: (1) a global assessment using national data; and (2) case-study based approach, assessing data on a local level (see appendix).

To dig deeper and to understand how this framework can be applied most efficiently in the real world, Working Group 2 of *TBTI* decided to organize a workshop to present case studies related to economic viability of small-scale fisheries using the developed framework as a starting point. The workshop was hosted by Dr. Paul Onyango of the University of Dar es Salaam, Tanzania, and co-organized by Dr. Moenieba Isaacs of the University of Western Cape, South Africa, the African regional coordinators for TBTI, in partnership with the Benguela Current Commission, TBTI partner, based in Namibia. The

workshop invited fisheries researchers and practitioners from all over Africa. Seventeen people attended, twelve of whom presented small-scale fisheries case studies with a focus on economic viability from nine African countries. There were professors, researchers from government institutions, NGOs, students and fishers, from Morocco, Ghana, Nigeria, Uganda, Kenya, Tanzania, Mozambique, Malawi, and South Africa, with participants from Canada serving as resource persons and facilitators. They represented an incredible diversity of people and topics, including both freshwater and marine small-scale fisheries.

## 2. *Workshop summary*

Each day of the workshop included case-study presentations followed by time for questions and discussion about the presented work in relation to the framework of the assessment of economic viability.

### *2.1. Economic viability and small-scale fisheries*

The workshop began with the presentation of each participant and an introduction to the *TBTI* partnership by the workshop organizers. This was followed by a more detailed introduction to Working Group 2 and an interactive presentation and discussion on economic viability, its meaning and definition in general and for small-scale fisheries. Participants were asked which word came to their minds when they heard the word 'economics' and a list on the white board was put together based on the answers (Fig.1). The next question was about the meaning of economic viability and then about the meaning of discounting, answers were noted on the whiteboard (Fig.1).

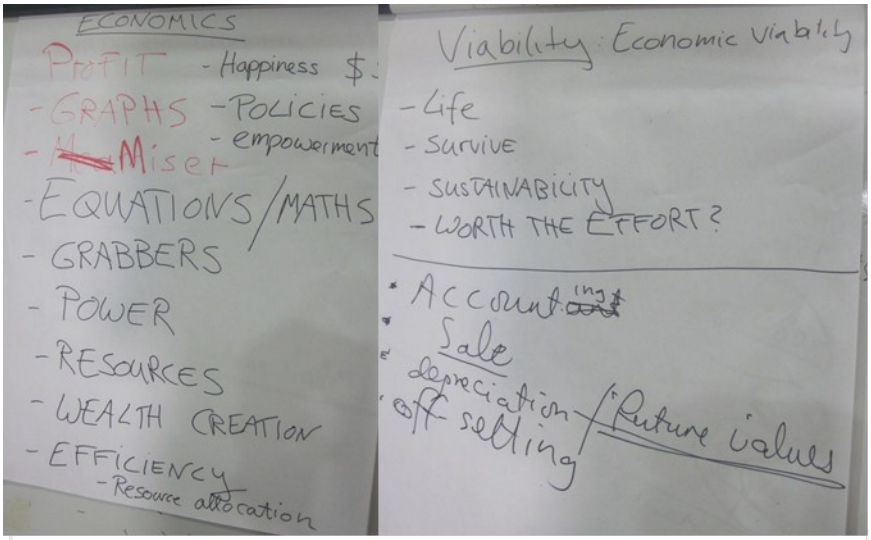


Figure 1 Whiteboard showing brainstorm results from workshop participants on the meanings of 'economics' and 'economic viability'

The main message captured from the brainstorm results was that economic viability describes the long term survival of an economic entity and this very much agrees with what was presented from the literature. The very vivid discussion brought everyone on the same page and it became clearer for all participants how economic viability is defined for the purpose of this study.

The brainstorming exercise was followed by a presentation of the economic viability framework. The presentation described the main differences between economic and financial viability and aimed at explaining why it is essential to have a comprehensive view when assessing economic viability of small-scale fisheries. Furthermore, the methodology using rapid rural appraisal techniques as well as a regression model were presented and discussed. Participants were curious whether the framework had been applied yet and when noted that it had not, they wanted to know how they will be able to use it. It was clarified that at this point in time the framework was not finalized. However, it was explained that once the input from all participants during the workshop was integrated, the framework would be tested at a case-study level.

It was decided that the discussions would continue throughout the workshop. Additionally, the workshop participants were asked to critically review the attributes identified in the presented framework during each of the case-study presentations. To evaluate the attributes in a schematic manner a set of criteria were presented to facilitate the review. Criteria to assess the attributes were: relevance, understandability, time, ease of interpretation, practicality, measurability objectivity and accuracy. The main discussion section was then planned to be at the last day of the workshop.

The following sections describe the main discussion points of each of the presented case-studies in relation to the developed framework to assess economic viability of small-scale fisheries. The outcomes of these discussions will then serve as the basis for improving the current framework.

### 2.2. *Case study presentations*

I. *Subsistence fisheries of District of Palma, Province of Cabo Delgado, Mozambique*

The case study describes a subsistence fishery, i.e., fishers fish to survive and to eat, not to maximize profit. Therefore, it is a big challenge to assess the economic viability of this fishery if no money is made from it. Three main concerns were raised regarding the usefulness of the current framework in regard to costs, employment type and the lack of a formal organization of the sector. Questions raised included: how can costs be divided into fixed costs and variable costs for a fisher who has no boat and collects invertebrates from the reef; how employment types can be categorized if each fisher does many different activities of which not all are related to fishing; and how all the fishing activities can be assessed when there is no formal record of this fishery in the government sector.

II. *Lake Albert Fishery, Uganda*

Presentation from the National Fisheries Resource Research Institute:

This fishery is multi-gear and multi-species and has been poorly documented in the past. However, information is now being collected, including: fishing effort (landing sites, number of fishers, number

of boats active, registered gear and even some illegal activity); key social issues (shared resources across borders and communities; diseases, oil exploitation); management (co-management in place, Beach management Units, but mainly policies on paper and not properly implemented).

The biggest challenges for this fishery that were mentioned are: the government is not able to play its role effectively as they lack knowledge and skill; there is not a large enough NGO presence to support the government sector with its tasks and the private sector and the fishing communities don't know how to fix current issues.

Important issues raised in relation to the economic viability framework are: e.g., how does the framework deal with trans-boundary fisheries and with illegal fishery (power struggles). Lots of information is being collected now and most of it reported to FAO, however, not much is being done in regard to implementing management strategies to improve overfishing, social issues and economic underperformance.

Interesting interview results show answers to the following question the fishing people were asked: what do you think are the main drivers to profitability of your fishery? Answers were: 1. High demand for the products; 2. Effective fisheries regulations; 3. A stable market (stable prices); 4. Access to roads (that can withstand harsh weather conditions); 5. Access to credit and 6. Refrigeration

Discussion points which are directly related to the framework are:

- How to take into account external factors that can influence the economic viability of SSF e.g., oil exploitation?
- How can trans-boundary issues be represented in the framework?

III. *Lake Victoria Fishery, Kenya*

A description of the current situation of the herring (*Rastrineobola Agentia*) fishery of Lake Victoria, Kenya

The main discussion points were that the fishery seems to be currently profitable, however, mainly due to overcapacity, destructive gear and overfishing that it won't be economically viable considering the future. This could be improved by educating fishing people and the community as well as by helping them to change from destructive gears (e.g. small mesh sizes) to more effective and sustainable gears. Furthermore it seems difficult to implement any regulations as there are so many active fishers with very low opportunity cost. However, not much information is available and there is a current lack of control from the government. It was mentioned that women were involved in the fish trade, however no detailed information is available.

IV. *Adaptation of artisanal fisher folk to Climate Change, Region of Ondo, Nigeria*

This presentation thoroughly discussed results from a study in a small coastal fishing village in relation to threats due to climate change. Main results show how fishers often and willingly adapt to climate variability that occur in the region, however, they do not seem to be prepared for long-term climate changes. Therefore, even though currently the way the fishery operates seems viable, they do not seem to be economically viable when considering the future.

One main question in regard to the framework was about how education is useful for the fishing people to be able to adapt to potential impacts of climate change in their region.

V. *Beach Seine Fishery in Ghana*

After a thorough description of Ghana's fishery and its national economic data, the presentation focussed on Ghana's beach seine fishery which comprises 12% of the total artisanal fishery production. The beach seine fisheries operate on 154 beaches and have 1074 beaches seine units in operation. Catches are decreasing, gear is very destructive, women are the main traders and often owners of the gear, fish sizes are often very small and biomass has to make up for low prices, there is a high dependence of people on fishing for their living, canoe owners provide security, low access to loans, open access fishery and there usually are fuel subsidies in place. The institutional framework is weak and monitoring and regulations almost absence.

Currently the fisheries seem to make enough for the fishers to live from, however, due to the very destructible gears used, does the ecological sustainability suffer, which will drive the fishery down in the long-run. Furthermore, social conflicts (between fishers and canoe owners) and other social issues (health, child labour) are common, which negatively impact economic viability. Research has been carried out already showing that the fishery is not sustainable (mainly based on ecological reasoning), however, due to political pressure (amount of people who would lose their jobs) was not closed or restricted.

Continuous socio-economic monitoring is necessary to carry out an assessment of the economic viability of Ghana's beach seine fishery.

VI. *Small-scale marine fisheries on the south coast of Kenya*

This presentation was aimed to describe a possible PhD project related to livelihood impacts and value chain characteristics of the south Kenyan marine small-scale fisheries.

The fisheries showed an increase of number of fishers since 2004 and most fish in dugout canoes. Frameworks that were presented and discussed to be used in this study were a Value Chain Analysis combined with the Sustainable Livelihood Approach. Measurable attributes where presented based on economic analysis which are currently presented in the economic viability framework. The main discussion was based on which research question and methodology would be best suited to assess this fishery case study.

VII. *Overberg district small-scale fishery in Cape Aghulas, South Africa*

The description of the small-scale fishery of Overberg shows a very dynamic and variable fishery, which mainly exports its catch rather than selling it to the local community. It is an important fishery for the community. However, the main local industry is tourism whereas the main income from tourism does not benefit the local community.

Each attribute of the economic viability framework was assessed in relation to the current information available on the Overberg's fishery. Most attributes seem to be measurable and relevant to the fishery.

Attributes that were seen as difficult to measure were: Employment type, dependence of fishing, access to finance and number of jobs.

It was suggested that immigration could be added to the attribute list of the economic viability framework as it would provide more information on the dynamics of the fishing community.

VIII. *Economic viability of inshore linefish resources, South Africa*

Currently there are four frameworks being developed to assess the South African linefish fishery. Linefish is considered fish that is caught with lines compared to fish caught trawling. The frameworks are being developed to explore and assess economic viability, the governance system in place, the value chain of the products and the food system in place.

One of the main issues this fishery is facing stems from socio-economic problems involving the process of resource allocation. This reflects a generally inequity among people who live in and around Cape Town, this is also reflected by the Gini coefficient which is very high for this area, i.e., an unequal distribution of wealth among the people. Furthermore, ex-vessel prices are very low compared to end sale prices and much profit is made along the value chain. Hence, a value chain analysis related to this fishery is very important.

There is a good amount of data collected and available for this fishery, including information on number of crew on board the vessels, number of fish caught (or landed), price per fish (ex-vessel prices) and revenue made per day. Furthermore, fishers record in their logbooks the reasons for not fishing on specific days, e.g., if the weather was bad or the price of fish too low.

A discussion following the presentation included the need for a definition of SSF, or why it is not needed; a clear definition of economic viability; a definition of a single fishing unit (e.g., a boat, a fisher) and if a fisher can be viable only because he/she has a job, even though that income is below the poverty line.

IX. *Tanzanian Fishery, Lake Victoria, A case of Magu district*

The small-scale fisheries of Lake Victoria, the largest lake in Africa, contribute about 60% of total fisheries landings in Tanzania. These fisheries contribute about 2.5-3% of Tanzania's GDP, employs 500,000 directly and about 2 million people indirectly. It is a multi-species and multi-gear fishery.

The presentation focused on assessing and comparing current available information of the Lake Victoria small-scale fisheries with the attributes from the economic viability framework. It became clear that most attributes are relevant and measurable.

Main discussion points included how to incorporate management expenses and cultural attachment to the fisheries into the framework.

X. *Tanzanian Fishery, Mafia Island*

Mafia Island is located off the central coast of Tanzania in the Indian Ocean. The island's marine park covers most of its coastline, and major economic activities are tourism, fishing, agriculture and

mariculture (seaweed farming). There is some information on the fishing activities and its economics. However, Mafia's main income comes from tourism, which has been reported to have positive effects on the marine ecosystem due to the marine park which protects parts of the marine biodiversity

It was discussed how social aspects and problems such as alcohol and drug abuse could be considered in the economic viability assessment as they have been observed to play a major role in the fishing community possibly effecting its viability. Furthermore, it would be interesting to explore how much influence the tourism sector and its activities really have on the fisheries economic viability.

XI. *Morocco's Small-scale fisheries*

Morocco's fishing fleet consists of an offshore fleet (447 large industrialized vessels), a coastal fleet (2562 decked wooden boats) and an artisanal fleet (15000 wooden boats, with outboard motors). The coastal fleet is considered the medium-scale fishery which presents the main fish supplier for the local market. On the other hand, products from the large-scale fishing fleet are more directed towards the export market. Not much data are available describing the artisanal fleet, however, it has grown substantially mainly due to the profitable octopus fishery. Fisheries altogether account for about 3% of Morocco's GDP. Currently new development and management strategies are being developed. The artisanal fleet has a special interest in these developments as they see a potential for increasing the wealth which is generated from fishing. A first case-study on the fishery was carried out giving out some preliminary data on the situation of the artisanal fishing sector. However, because signs of resource depletion are evident the ecological limitation of the artisanal fishery need to be better understood.

XII. *Women and Economic Viability of SSF in Africa*

EMEDO – Environmental Economic Development Organization and WFF – The World Forum of Fish Harvester and Fish Workers

This presentation demonstrated a very successful implementation of an Alternative Livelihood Strategy, which helped a group of fishers become sustainable farmers. Not only helping them at the beginning but supporting them throughout the process of developing new skills and adjusting to a new lifestyle was a key factor to success. This strengthened the implementation of the project and therefore reduced the fishing effort/capacity as well as provides the fishers with a sustainable livelihood. An important discussion point in the presentation was how important it is to understand the dynamic of the fishing community in focus, especially networking mainly with women fishers is essential as they are often overlooked when management strategies and livelihood planning are being carried out in fishing communities. As an example of a successful alternative livelihood implementation, this could serve well for other places in the world where fishing communities face similar challenges.

3. Capacity Development examples from South Africa

The main focus of this part of the workshop was to help the participants find ways and be encouraged on how to mediate or facilitate between fisheries science and policy, how to be involved in policy making and how to tackle challenges in communication.

Questions that were discussed included: How can fisheries research be effectively used and applied, so policy and management can be improved based on research results? How can the fishing sector, specifically when already marginalized be more aware and involved in policy making?

Described as trans-disciplinary action research, guiding from local to regional to international policy making, this policy development is crucial for many fishing communities, especially as policy is often not understood or misunderstood by the people. The idea that even without the support of the government, little changes can be made and research can be used to help make fishing communities aware of the policies in place. Rectifying the isolation of the fishing communities from policy is the first step to be able to improve the policy in place where necessary. In South Africa a community handbook was developed which explains the current policy and its changes to the people in an understandable manner (see website: http://toobigtoignore.net/?p=2543).

4. General discussion regarding the improvement of the current framework to assess economic viability of small-scale fisheries

By bringing together the workshop participants it was possible to hear very different case-studies, each reflecting how the economic viability framework can be used most effectively, which attributes should be revised, which work well and which might be easily misunderstood or very difficult to measure. We acknowledged the uniqueness of each case study and at the same time agreed that all are facing similar issues which need to be addressed.

The above mentioned points of discussions were summarized and presented at the end of the workshop, to reflect how best these can be used to improve the current framework.

To review and possible integrate into the framework and discussed comments:

- Extend involvement of community in post-harvest activity - if post-harvest activity are part of the community then they will be assessed;
- Trans-boundary issues, shared resources with other countries or regions who have different management (or no management);
- Fishers' perceptions to drivers of profitability --> adapt to find perceptions on drivers to economic viability;
- What about waste due to bad processing or bad selection methods --> leads to low EV,
  This is already captured in formula TR = price x (harvest -wasted harvest);

- How are external factors captured? E.g., oil exploitation? -> This falls into the category of large scale-processes. When the fishery is considered economically viable, it will be better prepared to these threats;
- Possibly include in the attribute ‘access to finance’ an attribute describing on how well the financing is being used once access is granted.

5. General remarks

The workshop was one of the most vibrant workshops I have attended. We learned so much from each other, laughed a lot and everybody engaged with both constructive criticism and praise. We learned about how fishers get paid with 'chap-chap' fish, how subsistence fishers sell their catches to eat chicken instead, that fish from Lake Albert gets transported in Chinese trucks, how fisheries of Lake Victoria highly depend on Nile Perch and Daga, that fishers who get away with not paying taxes actually receive subsidies and that we are all citizens of our countries who need to speak up. Some of the major discussion points were about definitions: How to define small-scale? What are the relevant social aspects of economic viability? How do we figure in external forces that influence the fishery? And where are the limits of the social system, i.e. the fishing community which will be assessed? There are many questions and no straightforward answers yet, but there is a shared understanding that these discussions will be continued to gain a clear understanding of the different terms.

We became friends and expanded our network to exchange experiences and work together, step by step to achieve our mission which is to rectify the marginalization of small-scale fisheries and with it contribute to food-security and poverty alleviation in small-scale fishing communities. This is a long windy road with many obstacles but by working together and realizing that similar problems are being faced in many different places we are confident that this work will be a success. The developed framework is currently being revised based on the workshop's results and will be made available through the TBTI network once finalized.