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SUSTAINABLE FISHERIES MANAGEMENT PROJECT (SFMP)

Small Pelagics Value Chain Study Validation Workshop Report



September 4, 2015



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Cover photo: A section of the participants at the validation workshop (Credit: Emmanuel Kwarteng)

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ACRONYMS

AOR	Administrative Officer Representative
ASSESS	Analytical Support Services and Evaluations for Sustainable Systems
BAC	Business Advisory Council
CEMAG	Community Environmental Monitoring and Advocacy Group
CCLME	Canary Current Large Marine Ecosystem
CCM	Centre for Coastal Management
CDCS	Country Development Cooperation Strategy
CEWEFIA	Central and Western Region Fishmongers Improvement Association
COMFISH	Collaborative Management for a Sustainable Fisheries Future
CoP	Chief of Party
CPUE	Catch Per Unit Effort
CR	Central Region
CRC	Coastal Resources Center at the Graduate School of Oceanography, University of Rhode Island
CRCC	Central Regional Coordinating Council
CSLP	Coastal Sustainable Landscapes Project
CSO	Civil Society Organization
DA	District Authorities
DAA	Development Action Association
DAASGIFT	Daasgift Quality Foundation
DFAS	Department of Fisheries and Aquatic Sciences
DFID	<i>Department for International Development</i>
DO	Development Objective
EBM	Ecosystem-Based Management
EG	Economic Growth
EMMP	Environmental Mitigation and Monitoring Plan
ERF	Environmental Review Form
ETP	Endangered, Threatened and Protected
FAO	Food and Agricultural Organization of the United Nations
FASDEP	Food and Agriculture Sector Development Program
FASDP	Fisheries and Aquaculture Sector Development Program
FC	Fisheries Commission
FCWCGG	Fisheries Committee for the West central Gulf of Guinea
FEU	Fisheries Enforcement Unit
FHI	Family Health International
FoN	Friends of Nation
FtF	Feed the Future
HM	Hen Mpoano
GCLME	Guinea Current Large Marine Ecosystem
GIFA	Ghana Inshore Fishermen's Association
GIS	Geographic Information System
GIZ	Gesellschaft für Internationale Zusammenarbeit
GLM	Generalized Linear Models
GNAFF	Ghana National Association of Farmers and Fishermen
GNCFC	Ghana National Canoe Fishermen's Council
GoG	Government of Ghana
GSA	Ghana Standards Authority
GSO	Graduate School of Oceanography, University of Rhode Island
ICFG	Integrated Coastal and Fisheries Governance
ICM	Integrated Coastal Management
ICT	Information, Communication Technology

IEE	Initial Environmental Examination
IR	Intermediate Results
IUCN	International Union for Conservation of Nature
IUU	Illegal Unreported Unregulated
JICA	Japan International Cooperation Agency
LEAP	Livelihood Enhancement Against Poverty
LOE	Level of Effort
LOGODEP	Local Government Development Program
LoP	Life of Project
MCS	Monitoring, Control and Surveillance
METASIP	Medium Term Agricultural Investment Program
METSS	Monitoring, Evaluation and Technical Support Services
MFRD	Marine Fisheries Research Division
MOFAD	Ministry of Fisheries and Aquaculture Development
MOU	Memorandum of Understanding
MPA	Marine Protected Area
MSME	Micro Small and Medium Enterprises
MSP	Marine Spatial Planning
M&E	Monitoring and Evaluation
NAFAG	National Fisheries Association of Ghana
NGO	Non-Governmental Organization
NC	National Committee
NRM	Natural Resources Management
PMEP	Performance Monitoring and Evaluation Plan
PMP	Performance Management Plan
PPP	Public Private Partnerships
RAVI	Rights and Voices Initiative
RCC	Regional Coordinating Council
RFA	Request for Application
RPA	Rapid Partnership Appraisal
SAMP	Special Area Management Plans
SFMP	Sustainable Fisheries Management Program
SMEs	Small and Medium Enterprises
SNV	Netherlands Development Organization
SS	Spatial Solutions
SSG	SSG Advisors
STEP	Sustainable, Transparent, Effective Partnerships
STWG	Scientific and Technical Working Group
UCAD	University Cheikh Anta Diop
UCC	University of Cape Coast
URI	University of Rhode Island
USAID	United States Agency for International Development
USG	United States Government
WA	West Africa
WARFP	West Africa Regional Fisheries Development Program
WASH	Water, Sanitation and Hygiene
WR	Western Region

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1. INTRODUCTION

The fisheries sector plays an important socio-economic role in Ghana. It makes important contributions to various macroeconomic and social indicators. The Fisheries Commission reported that over 9000 tons of fish, worth GHC 23 million were landed in Ghana in 2014 (GEPA, 2015). These fish products make about 12% of export earning and 4% of the product GDP (National GDP). This does not include post-harvest activities such as the marketing of fish, artisanal and industrial processing, and local catches. The sector also provides direct and indirect employment to about 130,000 people.

In the fisheries sector, small pelagic landings make up about 83% of the total catch by weight, and it is an important source of animal protein contributing to food security and livelihood. Women control postharvest processing in Ghana and along the West African shores. However, it is well known that women do not take full advantage of the many opportunities that national and regional markets provide. In addition, traditional methods of smoking and drying do not provide the highest net value of fish product.

The USAID/SFMP project supports the Government of Ghana in its strategy to reform fisheries sector and rebuild small pelagic stocks. This will contribute to poverty reduction and improvement of value chain of small pelagics. It is in this context, that SNV has conducted a detailed value and supply chain analysis of small pelagics in Ghana and neighboring countries.

SNV further organized a validation workshop which brought together a number of stakeholders to analyse the study and provide necessary inputs to improving the study. This report therefore presents feedback on the validation workshop.

2. BACKGROUND OF THE STUDY

The *Sardinella* value chain study was carried out by a team of consultants lead by Professor Francis K. E. Nunoo of the University of Ghana, Fisheries and Aquatic Science Department. The other team members are Dr Berchie Asiedu of the University of Energy and Natural Resources, Sunyani and Mr Emmanuel Kombat of the University of Development Studies, Tamale.

The study was carried out in nine regions including the four coastal regions, the three Northern regions and the Ashanti and Brong Ahafo Regions at the middle belt. It also involved regional countries such as Togo, Burkina Faso, La Cote D'Ivoire, Liberia, Senegal and Guinea. The main stakeholders who were interviewed during the survey are all along the fisheries value chain, the fishermen, fish processors, fishing input dealers, fish retailers, fish traders, related government institutions and consumers. The study lasted for three months; June to August 2015.



Figure 1 The consultants who conducted the study, from right Professor Nunoo, Dr Berchie and Mr Emmanuel Kombat

The objective of the study was to assess, into detail the entire value and supply chain (from net to plate) of *Sardinella* and other small pelagics taking into consideration relationships between actors and options for value addition. It had a regional dimension which provided information on countries from which we import and export *Sardinella* with mass balance. Earlier reports demonstrated that smoked fish of *Sardinella* flows from Senegal and Guinea to Ghana while smoked fish from Ghana is sold in Burkina Faso, Liberia, Togo and other neighboring countries.

In general, value chain analysis is understood in the sense of characterizing and quantifying the relationships at all stages of production, processing and distribution to consumption of fish product. It identifies economic value at each stage of the chain and makes a comparative analysis of cost-benefits of each operation. **The results of the study will assist the project in the development of its management strategy to rebuild small pelagic stocks.**

Thus in carrying out the study, the following details were looked at:

- a. A deep analysis of the value and supply chain for small pelagics products from artisanal and the semi-industrial fisheries landed in Ghana.
- b. Identify relationships at all stages of production, processing and distribution to consumption and understand the comparative advantages of different stakeholders involved.
- c. Identify **entry points** and possibilities for improving profits and equity at all levels of processing (from the landing site to processing sites to selling points).
- d. Recommend ways to increase added value from small-scale fisheries and for women working in traditional roles in the processing of small pelagic species.
- e. Identify problems associated with postharvest losses in the processing, commercialization and seasonality of these products and provide recommendations on how to manage these issues.
- f. Take into account gender concerns as well as the characteristics of these fisheries products in the economic sector, throughout the study.
- g. Identifying the means of production and marketing and map the distribution of costs and benefits among stakeholders in the entire circuit.
- h. Map the chain value circuits at the national and regional levels and analyze the mass balance of imported and exported fish.
- i. Characterize the relationship between each link and quantify the benefits received by each category of stakeholders in the distribution chain.

3. PROCEEDINGS

The workshop was organized on Friday 4th of September, 2015 at the Ampomaah Hotel at East Legon, Accra. 39 participants representing various organisations such as the Fisheries Commission, NAFPTA, Ghana Standards Authority, Food and Drugs Authority, CENFA, Inshore Fisheries, UCC Fisheries Project and the Ministry of Trade and Industry attended the workshop. Before the workshop, participants were given the draft reports to review ahead of time, thus most of them came prepared to discuss the study.

The workshop started with a brief welcome note by Emmanuel Aziebor, the SFMP project manager at SNV, who stated SNV's commitment to fully understanding the small pelagic value and supply chain system in order to be well placed in addressing the issue of low small pelagic stocks in partnership with SFMP. The Chief of Party, Brian Crawford also gave a brief speech on SFMP's commitment to revamping small pelagic fish stock. In his speech he expressed anticipation in knowing the findings of the study as it provides a baseline for action.



Figure 2 Chief of Party Brian Crawford making a contribution

The programme was in two main sessions. The first session entailed a presentation on the entire study and the second session was a chapter by chapter review of the draft report. The session was very participatory and successful.

3.1 The Presentation

The 84 slide presentation was made under five headings. All three consultants took their turns to present the study. The presentation started with a briefing on existing literature on *Sardinella* and proceeded with detailed information on the findings pertaining with the above stated research areas on small pelagic supply and value chain. The presentation also touched on governance systems on small pelagics supply and value chain and provided summary of the major findings and some recommendations and proposed projects to enhance sustainable management of *Sardinella* fisheries in Ghana.



Figure 3 Cross section of participants listening to the presentation

The presentation is summed up as follows:

3.1.1 Background

- Some formal institutions that were consulted in the course of the study were the Fisheries Commission, EPA, Ghana Chamber of Commerce, Custom Excise and Preventive Service, Food and Drugs Board Fish Control and Export Project Department, Ghana Standards Authority, etc.
- In gathering information for the report under review, the fishers played a key role by giving leads to where processed fish was sent to for sale as well as the people who travel from other communities to trade in fish.
- Throughout the survey, it was realised that quite a number of people who were interviewed depended on sardinella and small pelagics for their livelihood.
- The fishing seasons are related to the upwelling seasons. The major upwelling season is between July and September and the minor upwelling between January and February and very rare in March. The trend has however changed as a result of the change in climatic conditions.

3.1.2 Sardinella Actors

- Women play a key role in the value chain with a significant number being transporters.
- The fishermen are an essential actor in the chain but have series of challenges that affect their productivity, such as the scarcity of Sardinella which has led to an increased search for sardinella catch, issues with the trawlers and light fishing.
- Other problems they raised included the issue of overpriced outboard motors which are also not readily available, following that loans are not readily available to fishermen.
- Also, the small pelagics perish faster and need to be sold faster. The fishermen are sometimes forced to sell on credit or in exchange for other items, affecting their income.
- The government also plays an active role in the chain. They are however implored to improve landing sites, deal with light fishing and trawlers and also reduce the cost of logistics.
- Fish processors also double up sometimes as traders. Though both men and women are involved in the processing process, women are more dominant.

3.1.3 Processing Methods

Sardinella and the small pelagics form 60 to 80% of fish processed. The processing methods identified are:

- Drying.
- Drying and smoking.
- Smoking.
- Frying.
- Salting and drying.
- Fermentation.

The main source of fuel for processing is fire wood. In the Western region, gas smoking is an option aside the use of fuelwood. It was also noted that there was a variation in technology from place to place such as the roud metal/clay traditional stove, the chorkor stove, the Morrison stove, the gas stove and the Frismo stove.

3.1.4 Categories of Processors.

Considering the scope of the survey, 6 of the processors are registered with GSA as industrial processors, large scale processors have about 25 ovens, whereas medium scale is between 11 to 25 ovens and small scale is below 10 ovens.

3.1.5 Post-Harvest Losses

- There is a very small amount of post-harvest fish loss in the chain because virtually everything is utilized one way or the other.
- During fish smoking, pieces of the fish fall into the fire. This further ignites the fire which is advantageous to the smoking process. The pieces of fish that do not burn thoroughly is gathered and sold to poultry farmers. Recently, it has been observed that fish farmers pay higher prices for them.
- Sardinella which is used for “momoni” does not sell much because of the bones. It is however done to reduce losses.
- Quite a number of processors especially along the coast prefer to process their fish no matter how large the catch is to freezing them, they prefer to freeze the bigger sized fish than the smaller ones. The middle belt and Northern regions on the other hand record more cold storage facilities than the other regions. They however suffer from the recent erratic power outage, which sometimes cause spoilage if not well managed.

3.1.6 Trade; Import and Export

Ghana imports 15% of its fish from Botswana, Namibia, Nigeria, Morocco, Belgium, Brazil, Ecuador, Norway and Canada whereas Ghana exports frozen and smoked forms to North America (USA, Canada), Asia e.g. China, Austria, Russia, EU e.g. Spain, and regional markets such as Togo, Liberia, and Benin. Sardinella is sold whole, frozen or fresh to wholesalers, retailers or consumers locally, it is also sold smoked and fried on the local market. Small sized Sardinella is of higher value than large-sized ones. Interaction with the fish traders in Ghana show that quite a number of people from Togo and Benin purchase fish from them however there is no documented record of these transactions. Ghana's borders do not have effective workable systems that control movement of goods preferably fish at the borders unlike that of Ivory Coast.

3.1.7 Profitability Analysis

- Processors make the highest profit in the value chain with fishermen making the lowest.
- There are clear cut calculations to how much fish is sold at each level; Mass balance analysis. This is represented in the main report.

3.1.8 Quality and Sustainability

- Sanitation and fish handling at the landing sites is very poor and needs great attention.
- The fish is exposed to hygiene threats considering the nature of the environment that processing takes place.
- The processors as well as other people close to the processing area, are exposed to health threats from smoke, open fires and heat.
- The current trend of power outages is affecting the quality of fish and may have adverse effects on human health.
- There is a high dependence on Sardinella and small pelagics thus quality issues is essential.

3.1.9 Cross cutting issues

- Demand and utilization of sardinella and other small pelagics is very high. This is sustained by their all year availability in Ghana from local and imported sources.
- Almost all sardinella and other small pelagics fish landed in Ghana is consumed locally but an unknown amount is exported in the informal cross border trade.
- 95% of small pelagics is consumed directly by humans. About 5% goes to poultry feed and fish meal.
- Most common processing method of Sardinella is smoking while anchovy is usually dried before smoking, or sold dried.
- Higher value addition is gained after processing, at 32% and fishermen make the least profit of 19.4%.
- Fish is distributed in a network from the coastal belt all the way to the northern belt; and to regional countries.
- Women exhibit more influence on the value chain process. Fish processors, traders, retailers, and cold store operators are largely women.
- Timely availability of low interest credit and to some extent labour, are major limitations to expansion of business and sardinella processing.
- Power rationing in Ghana is affecting quality of fish sold to consumers and may be adversely affecting human health.

3.1.10 Recommendations

- There must be good collaboration among the various stakeholders.
- There must also be regular monitoring of all sardinella products.
- Cold store operators must be educated on the safe handling of frozen fish.
- Enforcement mechanisms must be put in place to ensure safe handling of sardinella products.
- Efforts should be made to improve the packaging for sardinella at high levels since it has a huge existing market.
- Skills training must be given to processors involved in the Sardinella processing.
- Enhance personnel and logistics to regulators like GSA, etc.

3.1.11 Recommended follow up projects

- Stakeholders should collaborate to set up model fish processing centres to help demonstrate best practices and modern methods in the industry to stakeholders in the value chain. One each of such centres should be set up in the Coastal, Middle and Northern belts of the country respectively.
- Research and extension should be sustained along each stage of the value chain.

3.2 The Discussions

After the presentation there was an open forum for discussing the study, after which detailed chapter by chapter review was carried out. The report is in five chapters, thus participants were grouped in five. Each group was responsible for editing and reviewing the various chapters. After the review sessions, each group presented their comments. The following are some of the comments made during the open forum discussions and during the group review session.



Figure 4 Cross section of participants discussing the various chapters

3.2.1 Chapter 1

- The basis for the profitability analysis must be well defined and there is a need to design a cash flow projection over a number of years to show if profitability as determined in the study can be sustained. Also parameters for increasing profitability should be explored.
- The currency used (GHC) should be changed or related to a more stable currency, such as the dollar or the euro.
- Options for promoting high Sardinella production towards export must be explored, as local consumption takes up most of the annual catch.
- Sardinella production year-round is mostly consumed locally, even though export values are low the differences in volumes should be determined.
- The communities selected for pretesting were only fish market communities such as Madina and Agbogloboshie but did not involve fishing and fish processing communities such as Chorkor.
- The study only stated the regions where the survey was conducted but did not state the exact communities, the consultants were asked to include the exact communities too.
- The problem statement addressing the issue should be well discussed to clarify the problem better.
- One of the challenges the fishermen face is the Governments withdrawal of subsidies on the premix fuels.
- Challenge on access to credit by Fishermen is understandable because their business is seasonal and it becomes difficult for finance institutions to plan along.
- It is essential to use fishermen as watchmen against illegal activities by colleague fishermen and during closed seasons (when it is instituted).

3.2.2 Chapter 2

- Reasons for the high landings of sardinella was not clearly stated.
- There is a need for a stronger collaboration between the Fisheries Commission and other fish related organisations for effective coordination of the fisheries sector.
- Further explanation should be provided on improved technologies that aid in fishing such as the acoustic.
- The biggest health and fish quality challenges is at the landing sites and during processing. Awareness creation on best practices is essential.

3.2.3 Chapter 3

- There is the need to publicise fish quality standards or targets.
- It was observed that all the quality/standards based institutions such as Ghana Standards Authority and Food and Drugs Authority should not only concentrate on export and import fishery but should also regulate the local fish markets. And they should concentrate on the entire production value chain not just the storage section.
- There is a gap in the legal framework with regards to fish quality both locally and internationally.
- There is limited number of extension officers in the fisheries industry.
- All related institutions need an amount of strengthening especially in regard to logistics and finance.

3.2.4 Chapter 4

- The title of the study should read, “Sardinella and other small pelagics”.
- The information provided in the report should be referenced appropriately.
- Non-english words should be italised.
- The use of gas stoves for smoking should be further discussed to provide the advantages and disadvantages.
- The write up on profitability should present information on unit pricing.
- The various institution discussed should be discussed in relation to the particular stages of the value chain they represent.

3.2.5 Chapter 5

- There should be continuous periodic education on hygiene for processors.
- The functions of EPA should be explored in regards to healthy handling and quality fish production.
- There is a need to institute a workable system that facilitates easy access to credits by fishers, timely, when the season is ripe with low interest rates.
- The issue of trawler fishery must be given attention.

3.2.6 Wrap up comments

- Demand for small sized Sardinella is higher than that for bigger sized Sardinella.
- The study focused more on the stakeholders with little attention on the consumers; value assessment should strongly involve consumers.
- Information on the volume flow of fish through the value chain should be represented and discussed.
- The need to create awareness for clean environments for fishing and processing.

4. CONCLUSION

The workshop was well facilitated and most importantly the participation was very effective. The discussions brought out a number of essential inputs that the consults used to finalise the report.

Most of the participants saw the workshop as very useful and were very delighted about the kind of study that was carried out. We therefore look forward to the study being an effective basiss for the formation of an efficient management strategy towards rebuilding Sardinella and other small pelagic stocks in Ghana's coastal waters.