

ONE STOP CENTER FOR FISH PRODUCTS IN VALUE CHAIN AND MARKET; BRIDGING A TECHNOLOGY GAP IN VALUE CHAINS AND MARKET ACCESS FOR AQUACULTURE PRODUCTS.

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INTRODUCTION

A fish value chain only exists when all the actors work in a way that value is generated all along the chain. Value can be added to an intermediate product not only by processing it, but also by storing it (value increasing over time) and transporting it (value increasing over space). However, for small scale fish farmers this is not the case as middlemen make the greatest margins while adding little value in the value chain. Wholesalers purchasing fish and bear the risks thereafter while agents get paid a commission for selling on behalf of the farmer. Farmers selling directly to the retailers when in same scenarios fish is being given to retailers and money is collected after selling, final consumers always waiting for fish farmers in desperate situation then purchase their fish at very low prices since fish farmers are afraid of getting spoilt which may end up making losses whereas domestic chain is also a secondary market for those farmers who do not meet the quality or safety requirements of processors. Fresh or processed fish products are transported over a wide geographic range by many traders and processors through both formal and informal channels (Jagger and Pender 2001). Therefore, this concept of fish value chain will be viewed in a wide-angle lens, through a systems approach that looks at a broad range of activities and actors. For this we start with the production system of raw materials and moves through all the processes that take the product to consumers. It will act as a main control tool for information and knowledge, create market monopoly, and bring about improvement in technology and competitiveness. This will be the most valuable lens when adopting a poor approach and it will come with solutions for the aggregation step which is especially important to value chains in developing countries, where efficiently aggregating and storing small volumes of produce collected from widely dispersed smallholder producers is often a major challenge. (FAO 2014)

Key words: small scale fish farmers, value chain, middlemen, aggregation, technology

Characterization of small-scale fish farming in Uganda

Characteristics	Out come
Traditional products	Farmed fish are sold the day it is harvested; this is due to absence of cold chains in the country most. And a few are privately owned cold stores by industrial processors.
Few values addition on the products	Middlemen/brokers make the greatest margins while adding little/no value in the value chain in small scale fish farming.
Formal documentation and record keeping	There is no formal contract documentation for transaction between suppliers and customers. Only the fish farmers cooperation does the implementation of documentation for accountability and traceability.
Independent retailers	No formal relationship between fish retailers with fish supplier's retailer can easily switch supplier depending on supply price, quality, and availability. Only the farmers' coop is obliged to retail the members' produce.
Law requirements	Marketing farmed fish technically requires documentation by law it is proven that these are partially being used.
Low demand for freshness	Traditionally there is low demand for fish 'freshness' from consumers but farmers acknowledge that live fish sell faster than dead fish. Fresh fish here means fish kept close to its original state of quality at harvest.

Table 1: Characterization of small-scale fish farming in Uganda

DESIRED DEVELOPMENTAL OUTCOME

- Increase level of income.
- Generate maximum employment for youth.
- Positive uplifting for vulnerable groups (women, refugee, disabled)
- Using locally produced raw materials and indigenous

VALUE ADDED DISTRIBUTION

A classic example Ssebisiubi M (2010) stated that, the value added of farmed catfish was determined for different links in the value chain by the difference in average sales price data collected from different actors. All average prices per kilogram were calculated to live weight equivalent. Overall, the value added between the actors is positive. However, much as these values are positive, in agreement with Loc et al., (2010), they have a high degree of variation. According to the authors this is an indicator of risk and could be a precursor to failure cases of catfish farmers in Uganda. In Nigeria, Veliu et al., (2009) reported similar variations in value of table size catfish farm gate prices (2.39 to 3.33 USD/kg) being related to the size of the fish at harvest. The average total value added for live catfish flowing through the actors is approximately 2 USD/kg. Results show that added value between actors in the domestic and export chain are relatively similar at 2.1 and 1.8 USD/kg. Accumulators contribute the lowest value added, about 15% of the average retail value (Figure 3). A similar situation in Nigeria was attributed to lack of cold storage (Veliu et al., 2009)

OBJECTIVES

- To find out how to Leverage consumer-supplier user-friendly & focused technology for sustainable fish supply chain and marketing.
- To understand the role of key stakeholders such as governments, NGOs, and private sector in supporting fish value chain.
- How to attract, Equip, Empower and Retain suppliers, fish handlers, and retailers to overcome post-harvest losses due to poor fish handling processes.
- How to create a reliable source of fish food supply and dependable services to the market.

Methods

A typical flow of fish products in a domestic value chain

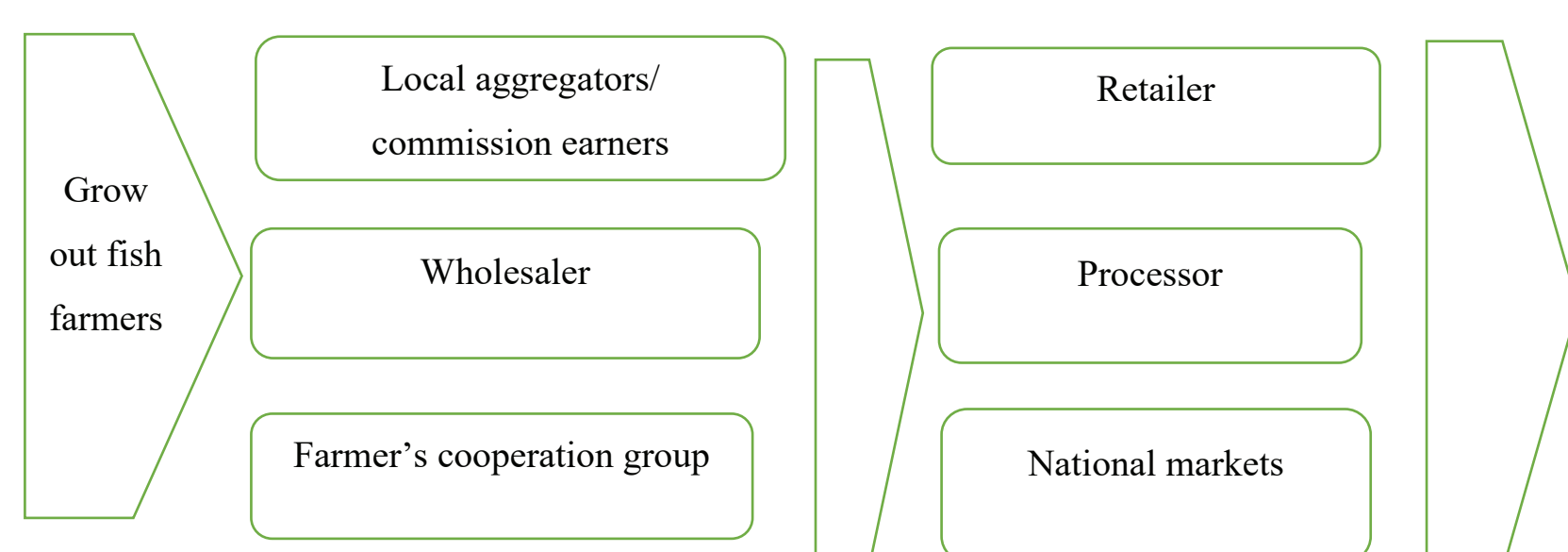


Figure 1: farmed fish value chain

INTERVENTION

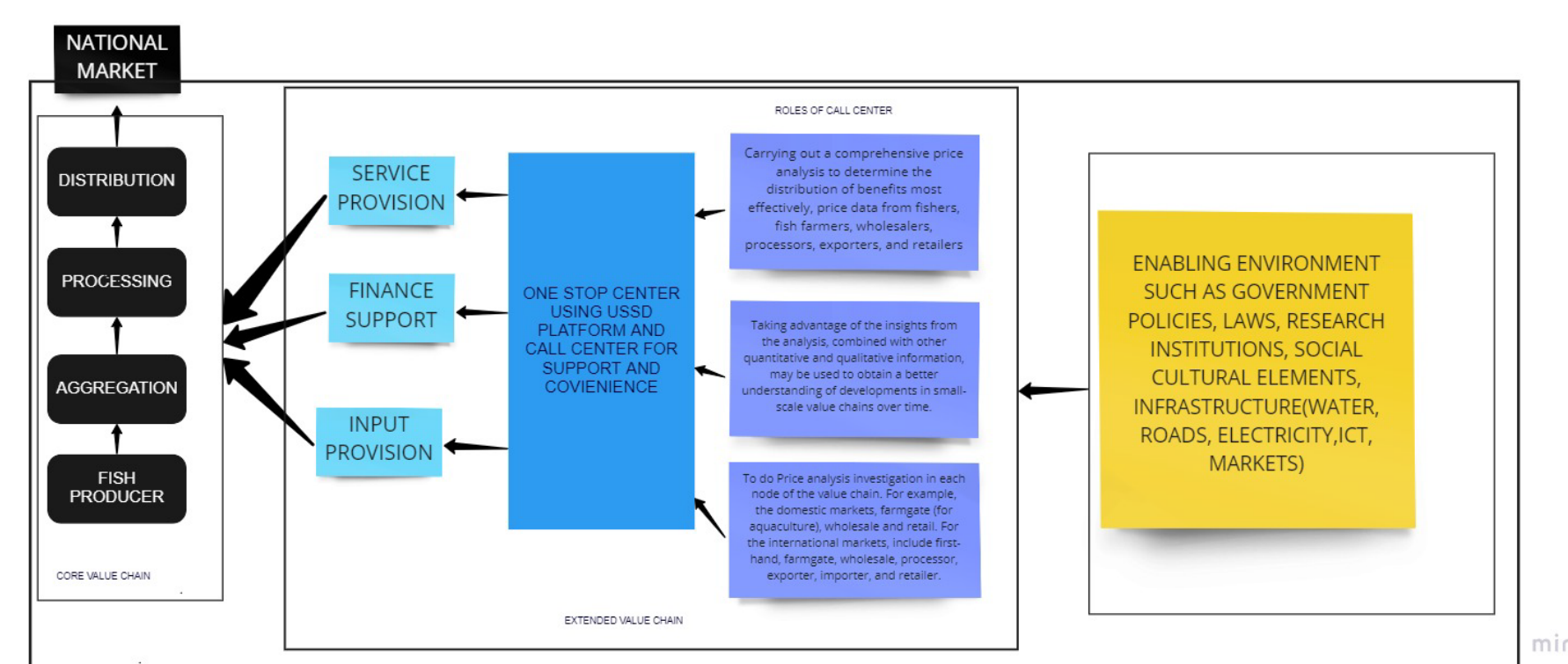


Figure 2: conceptualized model map fish value chain for small scale fish farmers.

There will be the use of a digital tool to optimize fish value chain procedures where service provision, finance support, and input provision. At each stage in the system VALUE is added. Both backward and forward linkages will be examined with this lens and will not look at the activities of a single enterprise but rather a cluster of activities that make a fish value chain active and sustainable.

Therefore, the concept is aiming to include (target) lead farms and firms that can champion the introduction and spread of innovative upgrades, i.e. Those that can drive change.

Buy use of the call center a long side the USSD digital tool, there will be knowing the prevailing quality requirements and attached market prices for fish and fish products which could help farmers bargain for a 'fair' price for fish whilst allowing middlemen to recover their operational costs and a margin. Creating a market monopoly and high bargaining power to help the fish farmers with an assured market channel.

Service provision: Fish farmers will be supported with facilitates to condition fish prior to supply to improve stress resistance when supplied live. If a customer is not willing to purchase, fish is returned to the holding tank or pond. But also, the use of the user-friendly technology such as USSD Platform will ensure final consumers get connected to the suppliers instantly. This will eliminate quick degeneration of fish and heavy discounting of fish because of excess supply coupled with poor transportation and handling methods. Therefore, farmer will only harvest what is being demanded or ordered for."

Input provision. Support, linkages, and delivery of all necessary input materials, ice, needed in fish value chain. It is noted, wholesalers usually add a small amount of ice to the crates and covers the crates with a tarpaulin which is insufficient to lower fish temperatures during transportation

As it is in capture fisheries, it is not different with farmed fish where farm harvested fish in Uganda is delivered to consumers through different channels including the direct sale of fish to households at farm gates, sale to households by head load carriers or bicycle traders that buy fish from fish farmers, wholesalers that collect fish with pickup trucks in fairly large quantities delivering to retailers, and processors that salt, dry or smoke and then sell their products to traders or directly to consumers.

Conclusion.

Development of policy aimed to safeguard the interests of small-scale fishers and fish farmers by enabling them to obtain prices and margins that let them achieve long-term sustainability from an economic, social, and biological resource perspective.

There is urgent need to increase governmental, NGO and private-sector support, improved organization, consistent pricing methods and making pricing more transparent, the sustainable expansion of small-scale fish farming, an increased focus on promotion and marketing, and the exploration of new markets.

Developing sustainable resource management and better regulatory framework practices are a necessary condition for small-scale value chains to be sustained. It also highlights the crucial need to always consider and safeguard the impact that increasing trade will have on local food security.

The use of user-friendly technology such as USSD Platform will ensure final consumers get connected to the suppliers instantly. This will eliminate quick degeneration of fish and heavy discounting of fish because of excess supply coupled with poor transportation and handling methods. Therefore, farmer will only harvest what is being demanded or ordered for."

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Key players

The processing and marketing section of the industry involves middlemen (local aggregators, wholesalers), and fish farmers' groups whose chief aim is sales to the best bargain buyer. fish is pooled from different farms in case one farmer cannot raise the required volume. Processors and local market retailers get farmed fish from middlemen and there both artisanal processors and industrial processors.

CURRENT TREND

Relative to other players in the value chain, small-scale fishers and fish farmers receive the smallest economic benefits for their products. Processors and retail markets are found to be receiving more of the distributional benefits of the value chain owing to their stronger bargaining power.

The small-scale sector has limited or little access to information about market requirements for the international market, new technology or new production methods.

There is less technical training and provision of financial support to phase out use of artisanal method of fish processing and transportation such as the wholesalers usually adds a small amount of ice to the crates and covers the crates with a tarpaulin which is insufficient to lower fish temperatures.

Target consumers are not connected to the fish suppliers instantly since the use of user-friendly technology in value chain elements is minimal. Even though the use of mobile money transactions is done, middlemen take the lion's share of the economic benefits of fish products as participation in price negotiation, interaction are minimal.

Increased implementation of HACCP system and adherence to ensure safe food production and eliminate post-harvest losses during fish handling will lead to sustainable fish value chains.



Picture 1: One of the characteristics of domestic fish handling in the value chain.

DIGITAL TOOL IMPLEMENTATION

BUSSINNES	Farmers do not follow best management practices and lack skills in value addition and access to information, educational resources.	Cash payments are risky and costly for all actors in fish value chain and cash economy inhibits them from accessing credit savings and insurance.	Fish value chain actors do not possess formal economic identities that capture transactional history, geo-location, business size.	Fish value chain needs full and real time visibility and certification of goods when sourcing from small holders.	Relaying on manual systems that do not capture data about available markets and possible.	Fish value chain actors rely on manual data management system and lack of real time visibility into their business data.
	Information service	Mobile money	Digital profile	Track and trace system farm management system	IoT application for fish value chain	Economic analysis
DICTION	Extension service, education and certification standards skills development will be provided.	Mobile money will continue, and transfers, payments and digital financial services will be used.	Mobile for authentication and as a tool to create economic identities/digital profiles	Track and trace systems, fish value chain linkages	IoT application for fish value chain; equipment logistics, monitoring	Market analysis; predictive analytics, precisions.

Table 2: digital tool implementation



MAAIF
Ministry of Agriculture
Animal Industry and Fisheries