**REGIONAL TRAINING ON VALUE CHAIN ANALYSIS**

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# Manual on Value Chain Analysis and Promotion

**Region: SOUTHERN AFRICA   Country: MAURITIUS**

**By David Russell and Satish Hanoomanjee**

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**Assignment by: PESCARES ITALIA SRL**

AFRICA   CARIBBEAN   PACIFIC

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# List of Acronyms

| | |
|---|---|
| AEM | African Eco-labelling Mechanism |
| AGOA | African Growth and Opportunities Act |
| BDS | Business Development Services |
| CIF | Cost, insurance and freight included in sales price |
| EEZ | Exclusive Economic Zone |
| EMA | Eco-Mark Africa |
| FAO | Food and Agriculture Organisation of the United Nations |
| FA's | Fisheries Administrations / Authorities |
| FIP | Fishery Improvement Project |
| GDP | Gross Domestic Product |
| IQF | Individually Quick Frozen |
| MC | Market Cost |
| MM | Market Margin |
| MP | Market Profit |
| MSC | Marine Stewardship Council |
| NORAD | Norwegian Agency for Development Co-operation |
| PP | Purchase Price |
| RFMO | Regional Fisheries Managment Organisations |
| RFU | ACP Fish II Regional Facilitation Unit |
| SADC | Southern African Development Community |
| SP | Sales Price |
| TAC | Total allowable catch |
| VCA | Value Chain Analysis |
| WWF | World Wildlife Fund |

# Part A  Concept of Value Chain Analysis

Value chain analysis (VCA) provides government policy makers and fishing company management with a systematic tool which allows them to understand the processes in the industry/company, and especially know the costs related to the various steps in the chain. The concept of the value chain simply links all the steps in production, processing, and distribution, together - and allows us to analyze each step in relation to the preceding steps and the steps that follow.

It includes aspects such as: physical, economic and social logistics between raw material input and consumption; the supply chain and flow of payment including value adding margins; and allows Fisheries Administration and fishing industry personnel to address value chain issues, so as to maximise value within their commercial operations.

Part A of this manual seeks to explain to you the key elements related to value chain analysis.

## 1.  Background

Value chain analysis is particularly useful for new producers entering both domestic and global markets, to ensure sustainable income growth, through understanding the value chain, from the time the fish is caught, till it reaches the final customer. In relation to the end consumer it also involves developing an understanding of food preparation and prevention of loss of protein, particularly from a small scale fishery food security perspective. Its use is also as an analytical tool for Fisheries Administrations in understanding the policy environment which provides for efficient allocation of resources within the domestic economy to maximise value, prevent post-harvest losses, and ensure effective management is in place to promote sustainable utilisation of the resource.

Global markets for seafood are large, many, varied, and complex.  It is not easy to sift through all the information, to read and analyse the market, to take appropriate decisions for maximizing our profits.  That is why we need a systematic approach – a model that we can use to guide us in collecting, absorbing and analyzing information in a meaningful way.

We start out by observing reality - a vast amount of facts. Sorting through the facts, we see a pattern emerge, and this allows us to sort the facts into similar groups.  The value chain analysis conceptual model is a systematic approach to handling the information, analysing it, and making the right decisions, adapted to suit the actual conditions of the place and country.

Fisheries in Southern Africa vary from the small-scale / artisanal fisheries in countries such as Angola, Malawi, Mozambique and Zambia; to the large commercial concerns in the Indian Ocean (Mauritius and Seychelles)'s tuna industry or the commercial fisheries sector of Namibia. The region also includes important inland fisheries such as Lake Malawi, Lake Tanganyika, Lake Kariba, Zambezi River Basin and the Okavango Delta, where Tilapia, Utaka and Kapenta species are predominant. Fisheries contribute differently to the country's GDP, varying from

0.002% in Botswana to around 5 % in Namibia.

Fisheries resources are important to national and regional economic development, and often fish trade represents an important pillar of the economy. This necessitates policies that safeguard the interests of small-scale producers - by enabling them to contribute to food security with products which supply nutritional quality for consumers, that are profitable for the producer, as well as access international markets where possible, but also to obtain prices and margins for long-term sustainability from an economic, social and biological resource perspective.

The objective of this manual is to assist Fisheries Administrations (FAs) in formulating and executing value chain analysis, to maximize value addition of fish and fish products through the application of the value chain approach and particularly framing of policies to assist producers in participating effectively in the global economy.

This manual is not intended to be complex, but rather to demonstrate building blocks to apply value chain analysis in specific contexts:

The "purpose" of this manual is as a guideline for policy planning staff in Fisheries Administrations.

A tool for fishing industry people to address value chain issues, so as to maximise value within their commercial operations.

This manual is compiled on the basis of training needs assessment carried out prior to the Regional Training on Value Chain Analysis Workshop (23 to 27 July 2012) in Mauritius, and also taking into account issues raised by participants from the various countries present during the workshop.

## 2. Overview of regional fish supply and demand

Spain, France and Italy are the largest importers of African fisheries products, purchasing around half of Africa's exports. African fish products exported internationally have tended to be sent as relatively unprocessed "commodity" products. Further processing has tended to occur in Europe, thus benefitting the Europeans in terms of jobs and greater profit.

Only recently has more emphasis been placed on value addition and producing "value added" fish products within Africa. Value addition also creates a whole new service sector in terms of employment and skills development, strengthening the economic base of African countries. Hence, the need for more value addition and value chain analysis in the region and in Africa in general.

In spite of its great potential, African aquaculture production has been small. To face the future Africa needs a new paradigm on accelerated aquaculture growth, realising failures of past efforts. Though government support has been noted in many countries (for socio-economic gains), there is still dwindling supplies of fish from traditional sources (capture fisheries). This could serve as a good basis to develop the sector and acquiring better understanding / knowledge on aquaculture and improved networking / exchange of information through

a more commercially oriented approach (Hanoomanjee, S. et.al. January 2009).

Africa's production, according to the FAO is expected to show significant growth, from about 8 million tonnes today to about 11 million tonnes in 2025. Although most of this growth will come from aquaculture, some growth is also expected in the capture sector (Hempel, Erik et.al. December 2007).

The FAO has also forecast that demand for fisheries products worldwide is expected to rise in the future. Based on current demand, another 27 million tonnes of fish would be needed to maintain the present level of per capita consumption in 2030. The forecast is for greater urbanisation in developing countries, where the population is projected to increase from 5.6 billion in 2009 to 7.9 billion by 2050 and an additional 250 million to 310 million people will be urbanized by 2015 – this is expected to be the main driver of future consumption growth. This can be an opportunity to increase fish trade.

The current average per capita consumption of fish across Africa is 8.3kg, and in Europe it is 20.7kg. Worldwide the annual average per capita consumption of fishery products has increased from 11.5kg in the 1970's, to 16.5kg in the 2000s (Franz, Nicole, April 2010).

**Table 1: Fish consumption in SADC countries**

Kg/caput/year
Source: FAO

| Country | 1961 | 1971 | 1981 | 1991 | 2003 |
|---|---|---|---|---|---|
| Angola | 7.4 | 14.3 | 14.4 | 13.3 | 15.7 |
| Botswana | 0.7 | 1.5 | 3.8 | 8.4 | 2.8 |
| Congo DR | 10.1 | 9.8 | 7.1 | 7.1 | 5.8 |
| Malawi | 3.9 | 12.7 | 7.5 | 6.6 | 4.6 |
| Mauritius | 10.9 | 10.3 | 18.7 | 19.4 | 18.7 |
| Mozambique | 4.0 | 5.0 | 3.5 | 2.4 | 5.0 |
| Namibia | 9.1 | 7.9 | 10.0 | 10.3 | 13.3 |
| Seychelles | 47.6 | 56.6 | 74.5 | 68.0 | 61.0 |
| South Africa | 5.5 | 7.9 | 10.4 | 9.2 | 7.3 |
| Swaziland | 0.0 | 0.0 | 0.1 | 0.1 | 2.4 |
| Tanzania | 6.4 | 12.3 | 11.9 | 12.0 | 7.0 |
| Zambia | 8.3 | 14.6 | 7.2 | 8.4 | 6.4 |
| Zimbabwe | 1.5 | 1.7 | 2.7 | 2.1 | 1.2 |
| **Africa average** | **5.0** | **7.0** | **8.9** | **7.9** | **8.2** |
| **World average** | **9.0** | **11.0** | **11.9** | **13.1** | **16.5** |

# 3. What is value chain analysis?

A value chain is a chain of activities where products pass through all activities of the chain in sequence, and at each activity the product gains some value. The chain of activities gives the products more added value than the sum of added values of all activities. It is important not to mix the concept of the *value* of the product with the

*costs* of producing it.

The value chain analysis:

Allows the company, individual, or other stakeholders such as government policy makers, to understand the parts of its operations that create value and those that do not.

*Is a template that companies or individuals use, to:* understand economic approach; and identify multiple means that might be used to facilitate implementation of a chosen business strategy.

The concept of the value chain simply links all the steps in production, processing, and distribution, together - and allows us to analyze each step in relation to the preceding steps and the steps that follow. The *value chain* describes the full range of activities required to bring a product or service from the source, through the different phases of production (involving a combination of physical transformations and inputs of various producer services), delivery to final consumers and final disposal after use.

Value chain analysis provides a systematic and analytical tool that can help management see and understand the processes in the company, and especially know the costs related to the various steps in the chain. Experience teaches that proper cost control is crucial. One must know the costs at every level, and work continuously to reduce costs where possible, while not compromising on quality and safety.

The most important implication of applying the value chain approach, however, is that all decisions made at one step in the process, have consequences for the following steps - and such decisions may be irreversible. For example, if you kill and dress the fish when you catch it, this means you cannot sell it as a live fish later!

The value chain consists of *primary activities* such as creating and delivering a product ( e.g. producing fish fillets); *support activities* that are not directly involved in production, but are likely to increase the effectiveness or efficiency (e.g. research and development). Also, some primary and support activities can be *outsourced*.

## 3.1    Comparing value chains

Firstly let's see what the global fish value chain looks like.

**Figure 1 The seafood industry value chain. Source: Glitnir Bank**
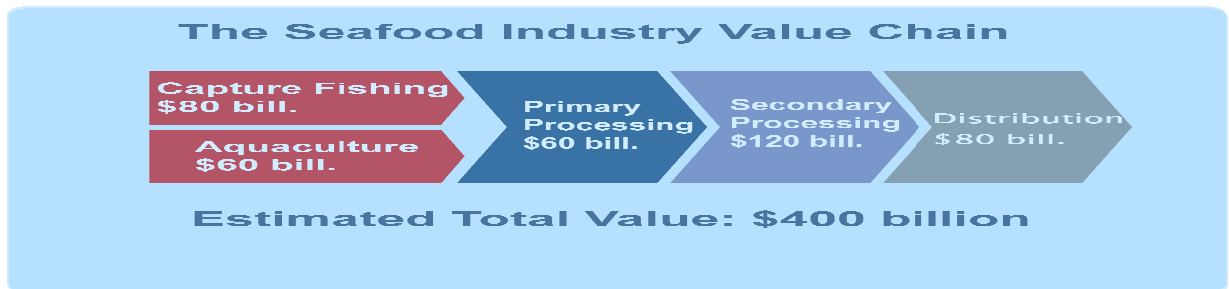


In studies undertaken respectively by the FAO and by Glitnir Bank, it was evident that the majority of benefits generated throughout the value chain, are captured by the retail / wholesale / secondary processing sector of the industry.  This trend is shown both in developing and developed countries' fisheries.

It is useful to compare value chain analysis, provided we only focus on the net value added at each level.  A study[1] of four value chains has highlighted important information about seafood value chains, including that the share of fishers becomes relatively lower as the product becomes more processed.

There are also lessons about potential pitfalls. The study showed that good fisheries management is essential to ensure that fishermen will reap the benefits from higher export prices.  Without proper management in place, increased prices can lead to increased fishing pressures and hence threaten the sustainability of the resource and profitability of fishing companies.

**Figure 2 Comparison of value chains in four countries.**



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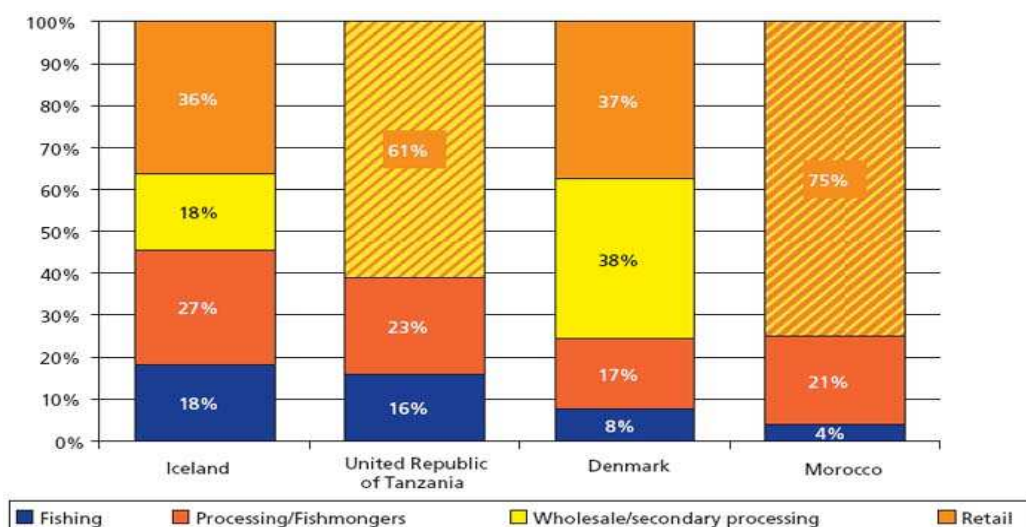
[1] Ref: Asche, Fank et al., FAO 2006.

Fishing is based on a natural resource which can fluctuate dramatically over time. International trade helps seafood companies in diversifying these risks by opening up access to different sources of raw material. This again helps stabilize markets and increased stability helps in operating seafood businesses.

Looking at the graph above, we see that Icelandic and Moroccan fisheries, where good management practices are in place, limited the total catch to sustainable levels.  As a result, price changes did not threaten the resource, but simply had a direct impact on the income fishermen received.  In Morocco, increased prices force processors to import anchovies from other countries but when prices drop, they buy only from domestic sources.  This shows how international trade can actually help relieve the pressure on fishing grounds when prices become very high due to increased demand, or when catches decline through natural fluctuations.

By contrast it should be noted that the analysis of the value chain for small-scale fishing, as well as working towards maximising value to the fisherman, is geared towards food security.

## 3.2     Reasons for promoting value added production

- Higher profits.
- More stable market conditions, as prices for consumer products show less variation than commodity prices.
- Job creation.
- Diversification of products and markets.
- Down-stream economic benefits through industry support sectors becoming more involved.
- Our strategic position should be one of maximising overall value.

**Remember:     The sum of the value chain should create a value that is greater than the sum of each individual activity, in other words, it should create a profit margin.**

**Figure 3 Interrelationships in value chain analysis.**
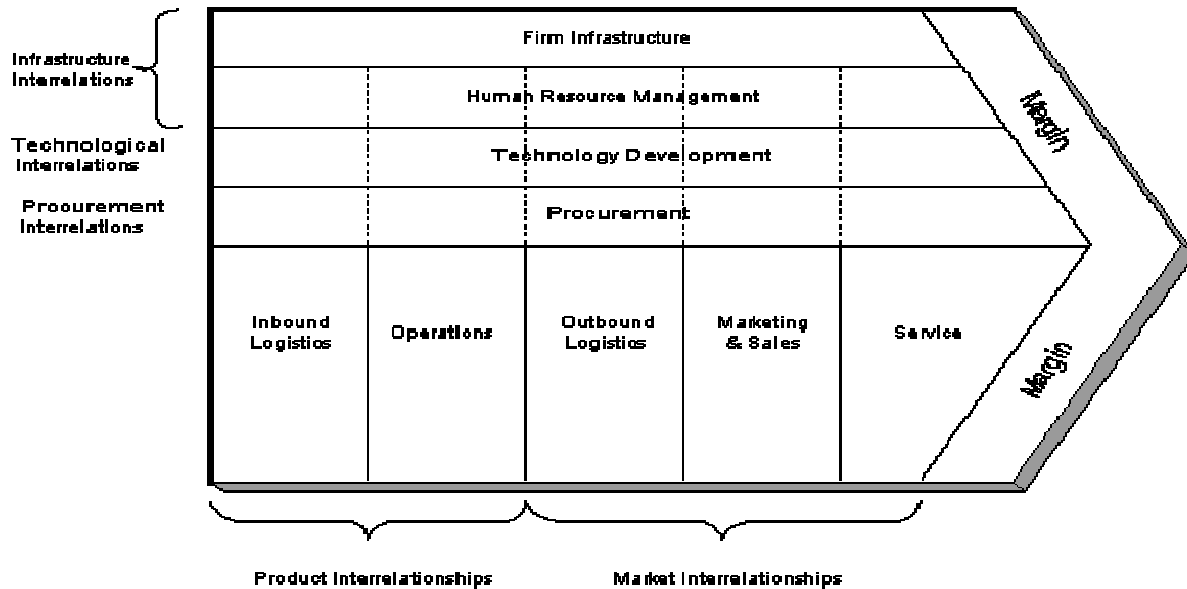


Source: Porter, Michael, 1985.

## 3.3    Reverse Value Chain Analysis

In the fisheries industry, one may describe the value chain as consisting of seven links in this case. The fishing vessel catches the fish and brings it to the landing site or port, where there is some primary processing – such as for example sorting and freezing or chilling – taking place. From here the fish is transported to secondary processing, such as for example filleting and freezing. The product is then shipped to the wholesaler, who distributes it further to the retailer before it ends up with the consumer

Now, let's for a moment look at the value chain from the opposite direction – instead of starting with the raw product and ending up with the customer, let's look at the customer first.

**Figure 4 Reverse value chain analysis**
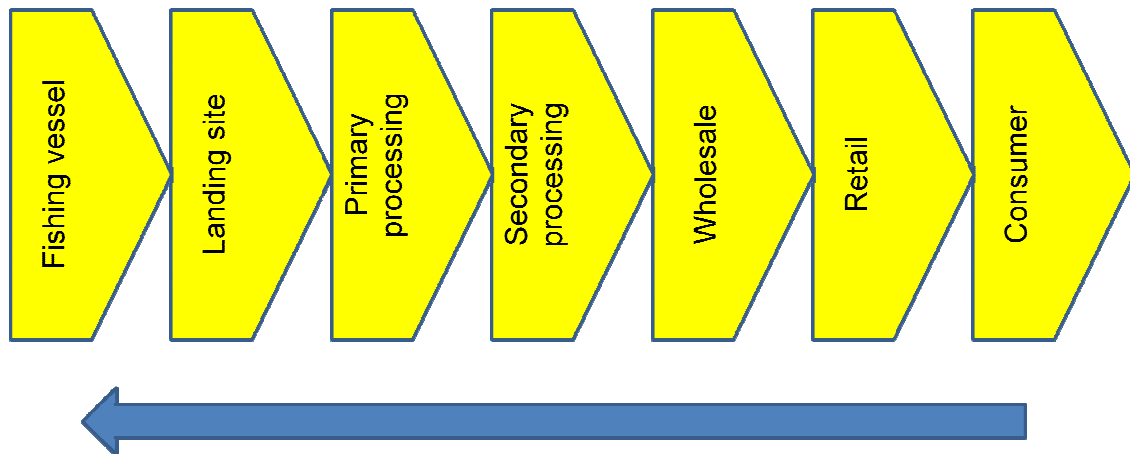


We first ask ourselves what the customer wants, how they want it, and at what price. After all, if we create the wrong product for the wrong market, we do not have a business! It does not matter if we produce the world's finest product, if nobody wants to buy it. That's why every business plan starts with the customer, with market research.  We have fish – a valuable raw material, but is there a market for it?  In what form does the customer want this product?  The questions we ask at the various steps in the value chain help guide the marketing and business planning process.

Remember that buyers and sellers remain connected along the value chain:

- Value chain analysis helps to explain the connection between all actors in the chain of production and distribution
- It provides producer-buyer links in which all parties can act freely
- In labour intensive industries, the power can shift from producers to traders or retailers
- Pressure on leading companies of global value chains can improve working conditions amongst suppliers.

## 3.4    The buyer-driver approach

The buyer-driver approach however, is not only about putting the best forward for buyers to like and support your business.  It is also about being seen as a caring, socially responsible employer.  People like to think they are supporting a good cause, even in what and how they buy.

In recent years, the buyer-driven approach and this social consciousness idea have moved employment practices up the agenda.

There are a few points to keep in mind, though.  Fewer codes is a better approach – it generates more efficiency and minimise confusion.  Buyer requirements often send a mixed message, due to pressures of management and labour problems in the work environment.

Suppliers are often asked to conform to their buyers' labour code and, at the same time, are under pressure to lower their prices and speed up delivery.  Pressure from retailers and brand companies' own supply-chain purchasing practices can undermine the very labour standards that they claim to support.

Organizationally, this is a management problem that is easy to explain: company staff dealing with labour standards are rarely in charge of actual sourcing decisions. This brings about difficulty in the intra-company division of labour to implement ethical sourcing.

Competition in final markets is often fierce, particularly with labour-intensive products. In some markets, retailers may find that they have little option but to pass these pressures on down the supply chain.

But a top-down approach where labour codes are implemented only by force has been shown to be insufficient.

**Figure 5 A schematic value chain in fisheries**



Source: Young, Jimmy, April 2010.

### 3.5     Customer and public perception about your business

- Suppliers are more able to provide high quality and respond at greater speed if their workers are treated well
- Companies are concerned about the threat to the image of the corporation and damaged reputation of being associated with exploitative working conditions.

**And this is where the value chain can be used to help enforce *regulations and standards* – both standards of work, and health and safety standards.**

Value chain analysis is thus used to improve wages and working conditions in local supplier enterprises:

- As an important new instrument, but with limitations
- Leverage is strongest where reputation about working conditions matters to companies
- Buyer pressure from above does not make worker pressure from below redundant, and local worker organisation remains important
- Collective negotiation  is not the only way to improve employment practices
- Best to have alliance of local-global players including buyers, enterprise associations, trade unions, NGOs.

### 3.6     Getting seafood to market and the need for careful handling

The main emphasis here is the need for good quality products which in turn promote realisation of a better price at market. Quality assurance starts right from the time the fish is caught till it reaches the consumer. The need for market information and market research are also very important. Value to products requires us to:

- Value OUR  product
- Know OUR  role
- Maintain  high  standards
- Know OUR customer
- Communicate with each step in the value chain.

Remember, the way the fish is handled immediately after being taken out of the water, determines its ultimate shelf life. Fish, once it is caught by the fisherman, needs to be seen as a valuable food item, which has to be looked after carefully for customer food safety reasons, and to achieve the best prices.

On board fishing vessels that produce chilled fish, an ice slurry (being a mixture of seawater and flake or crushed ice) should be used for rapid, effective chilling of fish. The temperature of a slurry is about -1 degrees C to -1.5 degrees C. Chilling is rapid because the fish are totally surrounded by water at the above temperature, and heat transfer is much faster than in air. Fish must be placed in a ice slurry immediately after landing on the boat, and must remain in the slurry until thoroughly chilled.

Two or more ice slurry small tanks are preferable to one large tank because:

- They can be cycled.
- They allow for more precise judgement of the time fish have been in the slurry.
- They allow for smaller quantities of slurry to be made in times of low catch rates.

When fish is stowed in direct contact with ice after slurry, the chilling process is able to continue. Therefore the time required in slurry needs only be long enough to reduce the temperature of the centre of the fish to 5 degrees C. From this point chilling in ice will occur at about the same rate as in slurry. Remember, there must always be some ice left covering the fish when it is landed to keep it from warming up.

### 3.7    How do consumers decide on value?

Remember that:

- Price is a key factor, but most consumers do not buy on price alone
- Quality is assessed to determine value
- Value = Quality / Price
- Price is the money charged and costs incurred (convenience, location etc.)
- Quality is multi-faceted and variable.

Price fluctuation is another aspect that influences the performance of the various steps in the value chain.

When we study price fluctuations in the different parts of the value chain, we notice that prices fluctuate more dramatically at the beginning of the value chain, at the level of the fisherman, than at the end of the value chain, i.e. the consumer level.

In the supermarket, we see the same prices for canned tuna, day in and day out – with perhaps price changes once or twice a year, and maybe a supermarket special offer once in a while. But in general, prices in the supermarket are relatively stable.

The prices for frozen tuna, on the other hand, vary from day to day, and sometimes greatly, and this is a key characteristic of a commodity product, as it is all based on current bulk supply and demand market forces.

This is because supply and demand come into play - and at the supplier level, this is more pronounced than at consumer level. Also, it would create a too unstable business environment for the retailer if prices to the consumer varied too much.

The fact that prices tend to be more stable at the end of the value chain, should show us that we should try to be involved further into the value chain. In fact, it is one good reason to develop value addition, since it brings more stability and predictability into our business.

The potential margin sometimes decreases and issues to be considered in our operations along the value chain are: the higher the risk, the higher the profit potential, but also the higher the risk of failure.

## 3.8 Fish marketing systems in developed vs developing countries

**Similarities such as:**

- Both have to face the same basic challenge of providing safe food of the right type and quality, to the right place to willing customers who can pay
- Market is composed of mixture of local and imported fish and fishery products
- Complex mixture of actors, enterprises and institutions in the industry
- Role of supermarkets important in fish and fishery product retailing
- Presence of hotel restaurant and institutional channels as food service suppliers
- Increasing role of regulations and standards

**Differences such as:**

- Vastly different scale at system and enterprise level
- Lower percentage of product handled in less developed countries
- In less developed countries more "fresh" versus processed or manufactured product compared to emerging or developed countries
- Supermarket share rising fast in less developed countries, to detriment of smaller retailers and wholesale markets.

### 3.9    Key challenges of fish value chains

Value chains are however not a magic word to solve all a company's problems.  An awareness of common challenges that most fisheries businesses face up to at some stage, helps to position a company to confront its own particular giants.  Among these key challenges are:

- Different locations of fish resources and markets
- Complex global trading links and patterns of exchange
- Diverse raw materials require transformation and allocation to specialised value chains satisfying varied market needs
- Chains & activities are interdependent and have a mutual impact
- Delivered quality levels and value adding options depend upon earlier chain activities
- Vertical communication networks and chain management
- Consumers are the ultimate determinant of value.

**Table 2: Comparisons of benefits versus limitations of value chains**

| Benefits of value chain | Limitations of value chain |
|---|---|
| Effective in tracing product flows | Actors often operate within set rules  (e.g trade rules) and blockages |
| Shows value adding stages | Value chain analysis should be well informed about rules and standards requirements |
| Identifies key actors and relationships with other actors in the chain | Difficult to make information specific and meaningful |
| Effective in tracing product flows | Transaction costs:  Buyer reluctance to buy from multitude of suppliers |
| Shows value adding stages | Conflict with buyers' own competence:  buyers only contribute to further own interests |
| Identifies key actors and relationships with other actors in the chain | |

Some of these limitations have manageable solutions:

Transaction costs and buyer reluctance to buy from a multitude of suppliers can be solved by small producers organising horizontally so that buyers interact with one collective organisation, e.g. a cooperative society. (Cooperative societies have the added benefit of purchasing in bulk for its members at reduced cost, thus lowering the production costs).

## 3.10    Challenges for developing country suppliers

Developing countries also have additional difficulties specific to economic realities, including:

- Choosing between commodity and specialty markets
- Retaining and expanding market access
- Gaining and holding a position in lucrative value/supply chains
- Penetrating, holding, expanding better markets
- Raising productivity and competitiveness
- Increasing value added
- Dealing effectively with emerging standards

## 3.11    Reducing value losses

Reducing value losses along the value chain then requires anticipating and minimising problems, and planning ahead to maximise value.  Some strategies include:

- Decrease product variability
- Improve product quality
- Streamline administration
- Reduce handling and movement
- Improve plant layout
- Optimise the use of equipment and inputs
- Improve staff productivity
- Reduce damage and theft.

## 3.12    So where does the money go?

Looking at well established industries operating in a modern, competitive environment  (such as Iceland), where they operate along much of the length of the value chain, we get a quite a different picture to the situation in developing environments.  Let's consider the case of Tanzanian Nile Perch fillets.  Below is a depiction of the distribution of retail value, of Nile perch in Tanzania:

**Figure 7 Value added for one kilogramme of Nile perch fillet in the Tanzania Nile perch fishery**
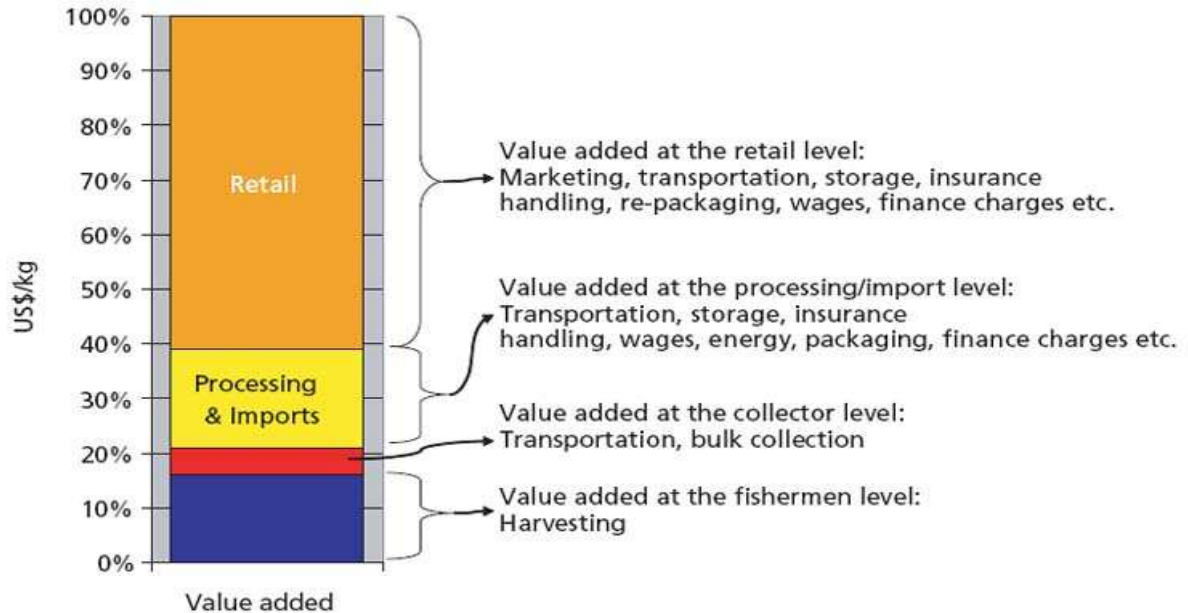


Source: "Revenue distribution through the seafood value chain" by Frank Asche et al., FAO Fisheries Circular No. 1019, Rome, 2006

The Tanzanian Nile perch industry has developed over the past 10 to 15 years, and the industry is <u>dominated by on-shore processors and traders</u>, and by importers and distributors in Europe. Processing of Nile perch is done in Tanzania at on-shore processing plants.

Processors get a relatively small share. The big winner in the Nile perch industry is the retail sector, including marketing, transportation, storage and packaging. This sector gets over 60% of the total retail value.

This is reflected in the distribution of value within the value chain. The fishermen get about 15% of the value of the retail price for Nile perch while fish collectors obtain about 5% of the retail value, the same share as the Icelandic cod fishermen, a little less than 20%.

**Figure 8 The marketing distribution chain for Lake Victoria Nile perch from Tanzania**
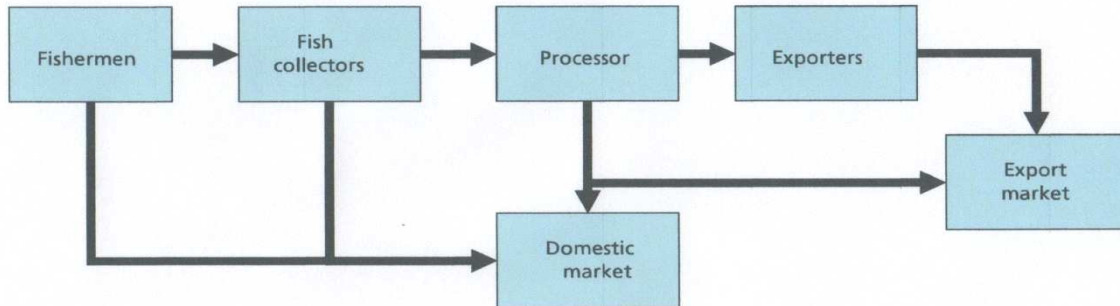


**Figure 9 The value chain for Lake Victoria Nile perch from Tanzania**
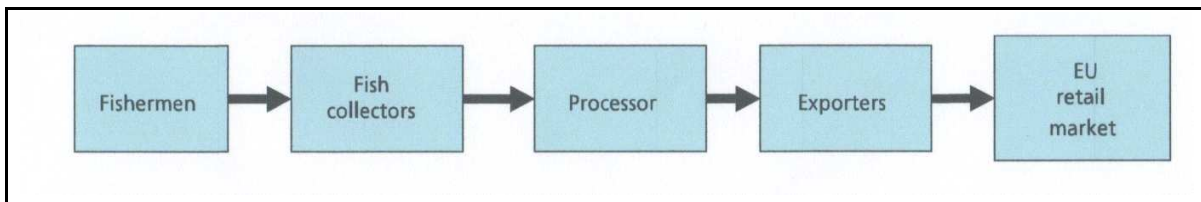


Source: Hempel, Erik, November 2010.

Mechanized industrial fishing was prohibited in 1994. Fishers with little capital use canoes propelled by paddles and sails.  Only a few relatively rich fishers use outboard engines and can reach distant fishing grounds.  Their fishing boats are towed by a mother fishing boat whose engine owner is paid for towing a fleet of canoes to and from the fishing grounds.  Gillnets and long lines are used as the major fishing gear for catching Nile perch for export purposes.

The second group of fishers have all modern facilities for commercial small scale fishing.  Their boats have hygienic fish holds and are powered by engines – carrying up to 5 tonnes.

The standard practice for processing Nile perch, is to land the fish at one of many landing stations dotted along the shoreline, and on the numerous islands in the lake.  Collector boats also collect the fish directly from fishers at fishing grounds, and ferry it directly to fish processing plants without passing through the landing sites.

The fish processing establishment forms the third segment in the flow diagram. This segment receives all fish (raw material) collected from segments 1 and 2, intended for local and regional markets. The raw materials come from fish rejected by the exporter as being of poor quality, by-products or illegally caught fish seized by

authorities and later sold as low grade fish.

The final market segment is the export market. Usually, fish is sold in bulk to EU importers, which in turn sell the fish to wholesalers, supermarkets, processors, etc. The fillets are also re-exported straight away (with the same or different identity) to other destinations such as USA, Australia and South America. Fillets are also sold to factories for further processing.

Let's now return to **Iceland**.

**Figure 10 Revenue distribution through the seafood value chain for Icelandic cod fillets sold through United States restaurants**
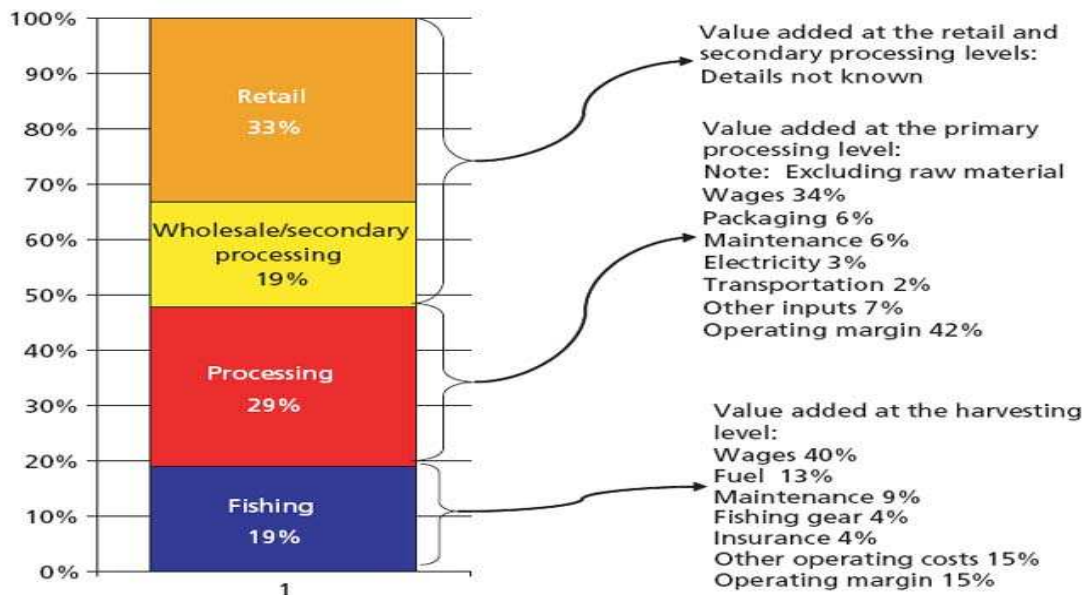


Source: "Revenue distribution through the seafood value chain" by  Frank Asche et al., FAO Fisheries Circular No. 1019, Rome, 2006

The retail level contributes about 33% of the value added to the product – including everything needed to provide the customer with the product, such as facilities and services.

The next level is wholesale and / or secondary processing.  Products imported from Iceland as IQF fillets[2] are mostly processed further as breaded or battered fillets. This level also provides a sales network and distribution of the products to the retail level. The wholesale level has about 19% of the total value added in the value chain.

The third level is processing, done within Iceland in the form of cutting the fillet from whole fish, and cleaning, skinning, cutting and freezing the fillet. This primary processing contributes about 29% of the total value added in this value chain.

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[2] IQF refers to individually quick frozen

In most cases, processing facilities are also operated by the <u>fishing vessels</u>, harvesting cod for land based factories, and these fishing activities contribute about 19% to the total value.

# 4. Calculating monetary gains along the value chain[3]

To be able to calculate monetary gains along the value chain you firstly need financial data for the fishing industry being studied.

A Bangladesh company has done an interesting study involving their national fish, the Hilsa  (*Tenualosa ilisha*) that illustrates the monetary returns to different stakeholders along the value chain. This is the country's most important single species.  Hilsa fisheries comprise 30% of the national fisheries production in Bangladesh, and 88% of the catch is marketed for domestic consumption, with just 12% exported to ethnic markets.

Although traditional, the fish marketing system is complex and not very competitive.

**Figure 11 The value chain for marketing of the fish "Hilsa" in Bangladesh, illustrating the monetary returns to different stakeholders along the chain**
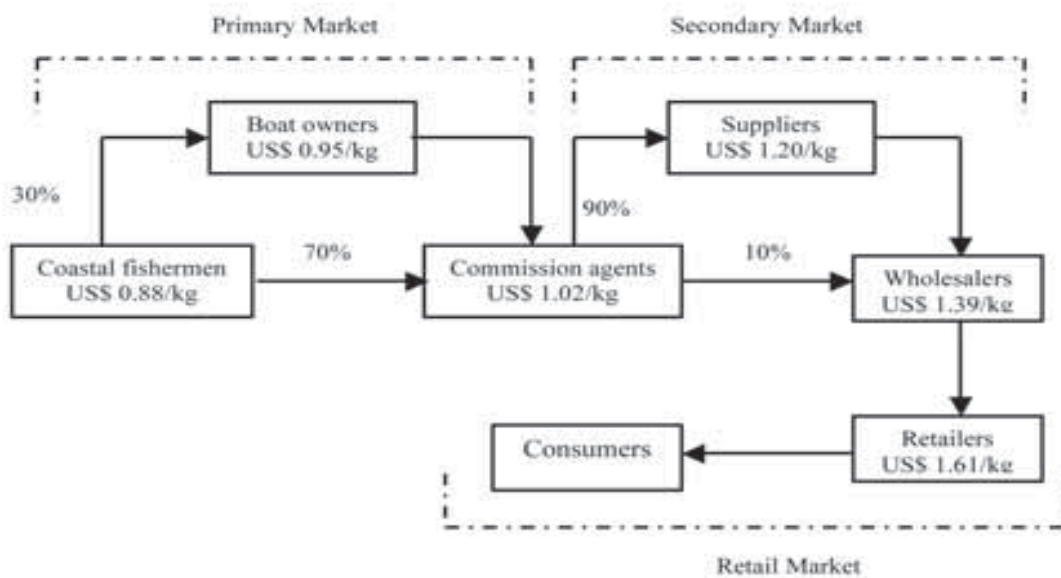


*Source: De Silva, D.A.M., April 2010.*

Marketing financial data was gathered from each of the key value chain stakeholders as illustrated in the above flow diagram. The profit to each stakeholder was then calculated using the following simple formulas:

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[3]  Based on value chain analysis – *Hilsa marketing, Bangladesh*

Marketing Margin (MM) = Sales Price (SP) minus Purchase Price (PP)

Marketing Profit (MP) = Marketing Margin (MM) minus Marketing Cost (MC)

**Table 3: Calculating the market profit along the value chain to each stakeholder for the primary, secondary and retail markets for the fish "Hilsa" in Bangladesh**

| Primary market | |
|---|---|
| Purchase price (PP) | 0.88 |
| Marketing costs (MC) | 0.05 |
| Sales price (SP) | 1.02 |
| Market margin (MM=SP-PP) | **0.14 (8%)** |
| Marketing profit (MP=MM-MC) | 0.09 |

| Secondary market | |
|---|---|
| Purchase price (PP) | 1.02 |
| Marketing costs (MC) | 0.07 |
| Sales price (SP) | 1.39 |
| Market margin (MM=SP-PP) | **0.37 (23%)** |
| Market profit (Mp=MM-MC) | 0.30 |

| Retail market | |
|---|---|
| Purchase price (PP) | 1.39 |
| Marketing costs (MC) | 0.04 |
| Sales price (SP) | 1.61 |
| Market margin (MM=SP-PP) | **0.22 (14%)** |
| Market profit (Mp=MM-MC) | 0.18 |

What follows is a step-by-step description to help better understand how to calculate the monetary gains along the value chain. For some value chains it may simply be an artisanal fisherman who catches the fish, and sells it on the beach or at the local market. Whether a simple or complex value chain, the principles are the same. You are identifying all the costs against the sales price to obtain the profit, at each stage along the value chain.

In this value chain example below, there are a number of players, starting with the "primary producers" of the initial raw material produced. They then on sell to the "primary market", which in this case is a "primary processor", who produces fish portions cut to their client's specifications. The "secondary market" client is a "secondary processor" who makes breaded fish fingers which he boxes in retail packs and then on sells to the "retail market" being a "retailer". The final player in the chain is the consumer who purchases the product from the retailer, and then consumes it. For simplicity sake it is assumed that the sales price is standardised all along the value chain on the basis that the buyer pays a CIF price for the product which includes the cost of the product, insurance, and freight to the buyer. The financial data below is for demonstration purposes only and is not based on a real life example.

**Figure 12 Step-by-step description on calculation moneytary gains along the value chain**

**Primary Producers**
- You will be collecting financial data on the "primary producers" of the initial product, for example fishermen or aquaculture farmers and assess their marketing profit (MP) by noting their sales price (SP), and then taking away from this figure, all their marketing costs (MC) which includes production costs such as fuel and electricity, crew and employee wages, repairs and maintenance, stores and provisions, packaging, depreciation etc.
- Sales price (SP) = US$1 per kilo
- Production costs (PC) = 80 cents per kilo
- Market profit (MP) = sales price (SP) minus marketing costs (MC) i.e. $1 minus 80 cents = 20 cents per kilo.

**Primary Market**
- The "primary market" in this case is the "primary processor" who purchases the fish, and converts the fish from whole form into fish portions cut to their client's specifications.
- Purchase price (PP) = US$1 per kilo
- Marketing cost (MC) in this case includes all the primary processing and packaging costs = 40 cents per kilo
- Sales price (SP) = US$1.70 per kilo
- Marketing margin (MM = SP minus PP) = US$1.70 minus US$1.00 = 70 cents per kilo
- Market profit (MP = MM minus MC) = 70 cents minus 40 cents = 30 cents per kilo

**Secondary Market**
- The "secondary market" in this case is the "secondary processor" who cuts the fish portions into fish fingers, breads them and then packs them into retail boxes for sale to the retailer.
- Purchase price (PP) = US$1.70 per kilo
- Marketing cost (MC) in this case includes all the secondary processing and retail packaging costs = 50 cents per kilo
- Sales price (SP) = US$2.70 per kilo
- Marketing margin (MM = SP minus PP) = US$2.70 minus US$1.70 = US$1 per kilo
- Market profit (MP = MM minus MC) = US$1 minus 50 cents = 50 cents per kilo

**Retail Market**
- The "retail market" in this case is the "retailer" who sells the product to the end consumer.
- Purchase price (PP) = US$2.70 per kilo
- Marketing cost (MC) in this case includes retail advertising, and all costs related to utilisation of retail shelf space = 25 cents per kilo
- Sales price (SP) = US$3.70 per kilo
- Marketing margin (MM = SP minus PP) = US$3.70 minus US$2.70 = US$1 per kilo
- Market profit (MP = MM minus MC) = US$1 minus 25 cents = 75 cents per kilo.

# 5. Eco-label examples within the Value Chain

Eco-labelling is voluntary product labelling, conveying environmental information to consumers that seeks to create a market-based incentive for better management of fisheries. The concept behind eco-label schemes is to provide economic incentives to producers and the seafood industry to adopt more sustainable fishing practices while safeguarding or enhancing access to consumer markets. Ecolabels affirm that the fish or fish product in question comes from a sustainable fishery. The various eco-labels each have their own specific standards that they operate by, confirming to different degrees, the sustainability of the resource and the best practices used at capture.

What is driving the market for sustainable seafood?

| Resource scarcity | NGO Campaigns | Media attention |
|---|---|---|
| Changing ethics | Corporate Social Responsibility | Marketing and sales |

## 5.1 The objectives of eco-labelling are:

> ➢ better managed, more responsible fisheries
> ➢ consumers to be educated and informed about the seafood choices available.

Consumers may ask questions about sourcing, which may include sustainability or responsible sourcing. Many are willing to pay a premium for eco-labeled products. Seafood may become part of a 'basket' of more responsibly sourced products, as it may appeal to a certain type of conscious shopper.

All these factors may influence more commitment into responsible sourcing and development of policy on sourcing or having minimum sustainability criteria which may exclude some 'bad' fisheries from being able to sell.

All of this should ultimately apply 'pressure' or at least send a signal that 'good' fisheries appeal to consumers and that they have a better chance to gain market access or share.

## 5.2 Marine Stewardship Council (MSC) Certification

The MSC represents a global non-profit organisation, established in 1997 to help transform the seafood market to a sustainable basis. MSC is internationally recognised as the fisheries eco-label that is most consistent with best practice. It is partnership based (industry, government & NGOs) and works on the basis that wild-capture fisheries are measured against a rigorous environmental standard.

When does the MSC consider fisheries to be sustainable?

1. Fish stocks are sustainable when

- Seafood populations in source countries are healthy
- No over-fishing
- Reproductive capacity is maintained
- There is pre-cautionary management (.e conservative quotas)

2. Minimal environmental impacts

- By-catch fish species

- Sharks, turtles
- Seabirds, marine mammals
- Sea-bottom, corals

3.  Effective management:

- Good laws and regulations
- Adherence to international agreements
- Good policing / surveillance  (fisheries patrols, inspections, etc.)

**Figure 13 Fisheries improvement projects**
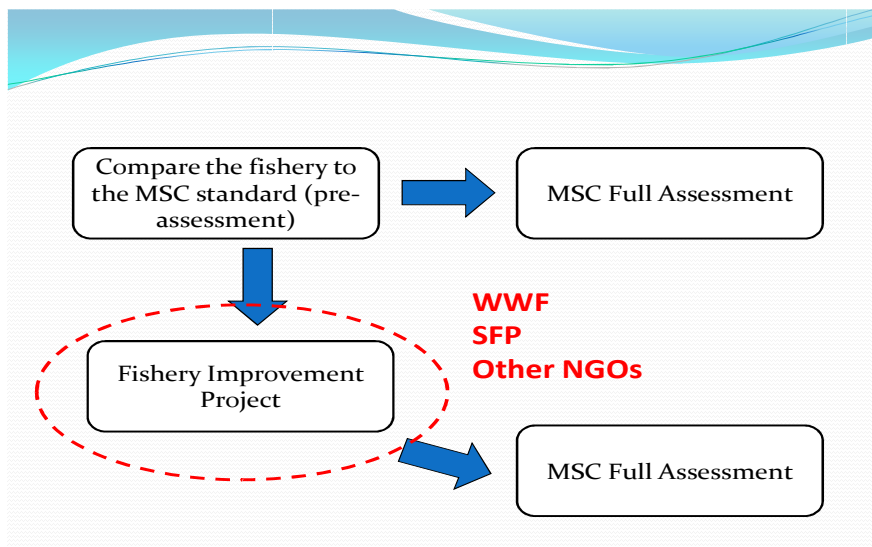


Having identified fisheries to work with – some fisheries can go direct from pre- to full-assessment[4], while others have to go through the FIP[5] process. Most regional fisheries may need to go through the FIP process, where NGO's such as World Wildlife Fund (WWF), assist the fishery to bring it's fisheries management systems into compliance with MSC Certification requirements so that the fishery can undertake MSC Full Assessment, confident that they will pass certification.

## 5.3    Comparison study on fisheries eco-labels

Given the proliferation of eco-labels currently available in the market, one of the big questions facing marine fisheries certification is how can we increase positively the impact and improve fishery and marine ecosystem

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[4]  A pre assessment is usually carried out prior to a full assessment to determine which criteria needs improvement. A pre-assessment is confidential to the client, giving the fisheries sector client the opportunity to decide whether or not to go ahead with full assessment, the latter being open to public scrutiny.
[5] FIP  Fishery Improvement Project

health through identifying a credible and practical eco-label? The "Guidelines on Eco-labelling of Fish and Fishery Products from Marine Capture Fisheries" (FAO, 2005), are the recognized acceptable minimum standard for credible fisheries eco-labels. On the basis of this, WWF in 2009 undertook a comparative study through the firm Accenture.

The study looked at well known eco-labels, and assessed them on the basis of the following assessment criteria:

**Governance, Structure and Procedures** (how the scheme is governed and operated)

Topic 1 – Standard setting structures and procedures
Topic 2 – Accreditation and certification structures
Topic 3 – Accreditation and certification procedures

**Content of Standards**

Topic 4 – Ecological criteria
Topic 5 – Fishery management system
Topic 6 – Traceability.

**Figure 14 Quantitative comparison of eco-labels**
*Source: Accenture Development Partners, December 2009.*
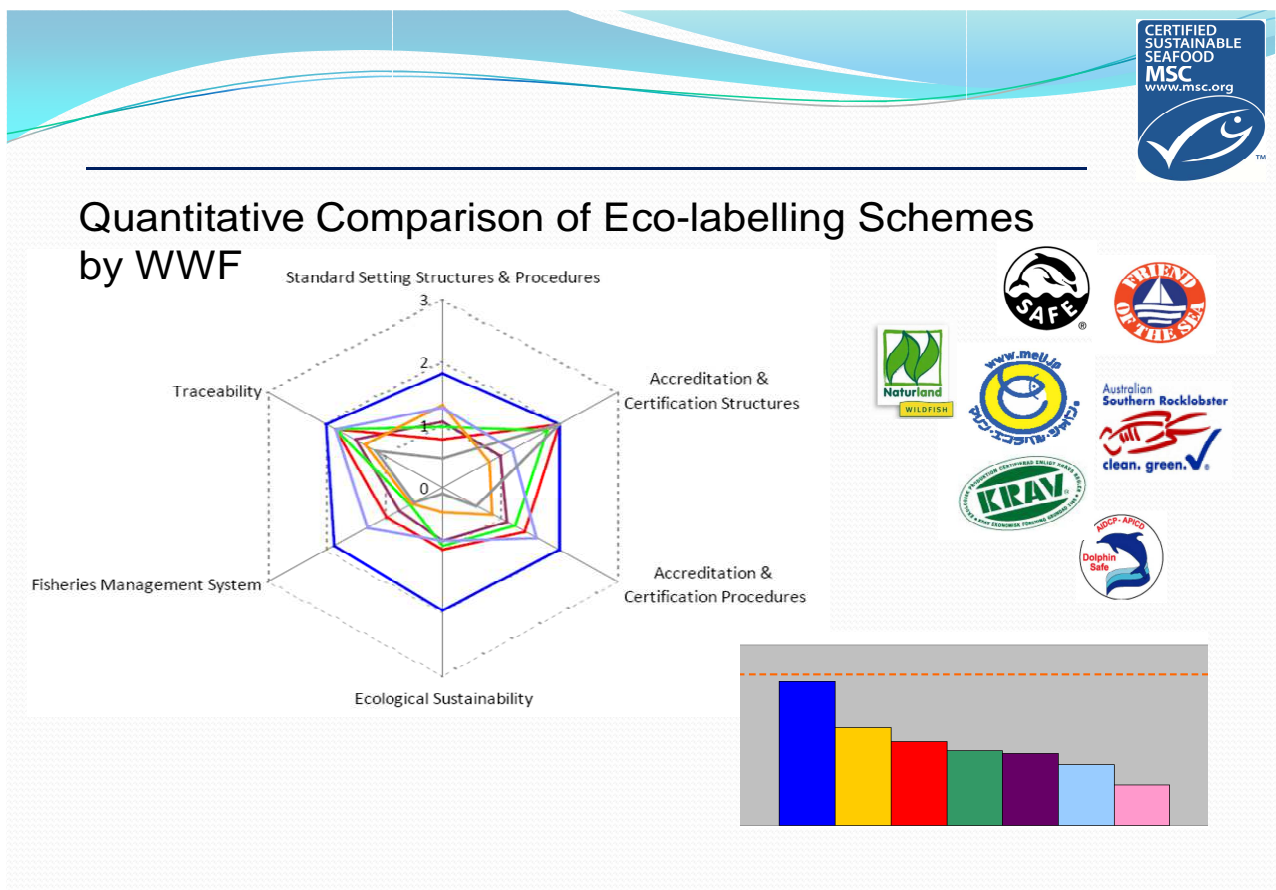
Dark blue = Marine Stewardship Council, compliant; yellow = Naturland, semi-compliant; red = Friend of the Sea, semi-compliant; green = Krav, semi-compliant; purple = AIDCP, non-compliant; light blue = MEL-Japan, non-compliant; pink = Southern Rock Lobster, non-compliant.

The study revealed that of the eco-labels assessed, eco-label sustainability programmes use many good initiatives to foster ecological sustainable fishing and management practices. However, the MSC is the only eco-label that is structured to have the greatest impact on the sustainability of fisheries and marine ecosystems themselves (as depicted in Figure 13 above). It was observed that except for MSC, eco-labels are not well balanced across all six segments to the extent required to support sustainable fishing.

## 5.4    South African hake – an MSC success story

South African hake offers a Southern African success story, whereby SA hake has expanded into new markets, strengthening its position in other 'MSC-friendly' markets (UK, US, Germany, Netherlands etc.).

The can benefit of this, included quota reductions  so as to rebuild stocks  and ensure stability in annual total allowable catches (TACs).

Activities required, included ring fencing of fishing grounds to protect the environment outside the fishing grounds, fish by-catch management so that other species outside the management regime are not exploited, and reduced seabird interactions with fishing gear.

As well as strengthening fisheries management of South Africa's hake stock, the South African hake industry as a result of MSC eco-labelling certification, has been able to expand its product markets internationally. This is promoting greater overall profits as MSC friendly markets generally prefer products that have undergone greater value addition along the value chain, and in a world where many countries are now suffering from economic hardship, tend to pay better prices for the product.

## 5.5    Eco –labelled Nile Perch, Tanzania

Through a German funded GTZ project, the Naturland eco-label was applied to Nile Perch in Tanzania. The Naturland Standards consist of 12 General Standards addressing ecological, social and economical sustainability. Through the project 16 suppliers, 50 collectors, 713  fishermen, 273 fishing boats, and 25 collection boats were involved / certified. Vicfish produces about 4,000mt of certified Nile Perch.

This Naturland eco-label project clearly illustrated how management directed towards the market chain has improved compliance to rules, increased transparency of the management system, built mutual trust between crew, vessel owners, fish collectors and fish factory managers, and improved information flow for management. This was possible because each stakeholder in the market chain benefited economically from the business

partnership forged within the chain.

## 5.6    Eco Mark Africa – promoting sustainable fisheries

The African Eco-labelling Mechanism (AEM) was created to promote sustainable consumption and production, while fostering intra-African trade across various sectors. It has a website: www.ecomarkafrica.com

AEM awards the EcoMark Africa (EMA) eco-label to sustainable African producers and service providers.

AEM is:

- based on a pan-African political structure to ensure governments' support, thereby gaining credibility and legitimacy across the continent;
- provides the technical framework for awarding the EMA label on the basis of sector-specific standards;
- will be the standard-setting body as well as the owner of the EMA Standards;
- will ensure certification carried out through accredited third-party conformity assessment bodies;
- is currently being institutionalised as an independent legal entity.

Existing fisheries certification schemes benefit by:

- Using EMA eco-label to compliment their systems by filling gaps (e.g. regarding processing, social criteria), thereby tailoring their schemes to specific African conditions while maintaining emphasis on their African origin.

Fisheries benefit by:

- Using EMA as a marketing tool which enhances their market access at international, and especially at continental level.
- EMA's focus on small-scale fisheries, providing them a specific support in applying sustainable harvesting and processing practices.

Governments benefit by:

- Using EMA as a co-regulatory tool to achieve their policy objectives regarding sustainability.
- Transparently proving their fisheries industries' sustainability performance.
- Enhancing their profile with development partners and the international community.
- Learning from EMA processes so as to inform their own legal and management systems.

# 6. Conclusions on the value chain

- Value chains conceptualize raw material transformation irrespective of scale, i.e. small scale or industrial fisheries.
- Value chain thinking is a systematic way to *plan* the business, both from a commercial and governmental perspective, improving benefits through better policies.
- Value chains determine areas of comparative advantage in supplies and markets.
- Value chain analysis can help m*aximize profits* but it can also identify activities that are *necessary but not profitable .*
- Local and regional networks enhance value addition: different institutional end-markets are linked to different forms of coordination and control of value chains.
- Need to develop vision on: skills training, investment, market access, sales, and exports.
- Ensure that policy environment is favourable, but don't assume that will be enough.
- Take a cluster approach only as the starting point for value chains, not as an end in itself.
- Concentrate on competitiveness and productivity. Look for and exploit multiple ways to add value once initial success has been preliminarily attained.
- Identify and support promising value chains with assistance at key points in the supply chain based on collaborative analysis of challenges, joint definition of priorities, and expert assistance from industry-experienced people.
- Recognize that some keys to success require mainly public sector intervention, others only private, and some a mixture of the two.
- Government sector policy makers should seek private sector alliances at all stages of supply and value chains.

With everything we have learnt about the value chain, let's now focus on policy development.

# Part B.  Value Chain Analysis in policy planning

Value chain analysis is useful for analysing fisheries and aquaculture industries in Africa, and through the application of this approach, new insights may be gained and valuable new strategies developed, both at the micro-economic (company) level and at the macro-economic (national) level. Value chain analysis can be applied to pure descriptive studies, where the purpose is to describe a process and for example to allocate portions of the costs to the various elements. But it can also be used as a model in more analytical studies, where relationships and mechanisms are described. Value chain analysis is also of particular use in business investment analysis, where it can provide firmer ground for making decisions about investment opportunities.

Understanding value chains requires looking at all the key socio-economic elements along the value chain from the time the fish is caught till it is purchased by the final consumer. The intention behind doing so is to maximise value from a profit perspective at a commercial company level, as well as an individual fisher level. And from a Fisheries Administration perspective, to promote competitive macro-economic industry development, which through value chain analysis allows one to gain a clearer perspective on the complexity of national economics, public welfare, foreign exchange earnings, and other considerations.

From a policy development perspective, some of the reasons why value chain analysis is so useful is that it highlights means to achieve:

- Higher profits
- More stable market conditions, as prices for consumer products as a result of value addition, show less variation than commodity prices
- Job creation
- Diversification of products and markets
- Food security
- Reduction in post-harvest losses
- Maximising sustainable management of fisheries
- Down-stream economic benefits through industry support sectors becoming more involved through development of cluster relationships.

It must be remembered that value chain analysis as a tool is not only useful in helping the rich, but also the poor. Its principles apply across industrial, semi-industrial, and small-scale fisheries. Many of the poorest people globally live in rural areas in Sub-Saharan Africa. They are poor because they are not effectively incorporated into the social, economic, and political mainstream.

There is an important role for government policy to reduce poverty through reducing risk, encouraging sustainable fisheries, education and skills etc. However, rural poverty will only be reduced significantly if low-income rural communities engage more successfully within the market. A value chain framework is helpful because it also allows us to understand why poor participants are not currently benefiting from their productive activities and what can be done to improve the success of this engagement.

Poor people in rural areas are unlikely to make a successful transition to globally competitive industrial production in many places. In this case we need to consider products appropriate to local and regional markets rather than the global market. And government structures related to the organisation of production and linkages with traders rather than the multi-lateral trading system, so that the rural poor can find their true competitive advantage (Mitchell, Jonathan et.al. 2011).

The competitiveness of the local or regional economy depends on the functioning of the entire chain. For Fisheries Administrations to pursue a strategic approach in building up the competitiveness of their fisheries sectors, they need a simple way of showing where the key problems are and where intervention is required. Value chain maps are a useful way of identifying these points and sharing the information with all concerned. This forms a basis for discussing and deciding where local institutions can resolve problems, and where assistance from donor agencies is required. Adopting this chain approach makes it more likely that local and foreign contributions compliment and reinforce each other.

Part B of this manual provides a step-by-step approach to undertaking a Value Chain Analysis.

# 1. Policy development through value chain analysis

Policy is the set of guiding principles that maps a course of action for an organization. It gives guidelines and procedures – a strategy for achieving the goals and objectives of the organization.

Developing good economic policy, appropriate to the level of development in an industry and country, requires an understanding of how local enterprises fit into the global economy. Often these markets are not free-for-all open spaces, but the spaces are coordinated by global buyers who source different parts and services from around the world.

There is increasing functional integration between internationally dispersed activities. The outsourcing of manufacturing and service activities from the high wage to the low wage economies accelerates this trend. In some markets it remains possible to develop a unique design and brand, make the product to your own specification, and then export it directly.

## 1.1 Objectives of policy:

Policy development at organizational and company business level is aimed at:

- improving earning opportunities
- repositioning the company in the global economy
- dealing with concerns about foreign competition threats
- improving the performance of local producers
- conforming with global labour and environmental standards
- reducing poverty, by helping small and large businesses

- switching from the low to the high end of achieving competitiveness.

Public policy aimed at private sector tries to influence decisions to improve performance, to which entrepreneurs often respond with scepticism. But entrepreneurs do listen to customers, and this is a tip for policymakers to engage with private sector!

Programmes aimed at improving the capabilities of enterprises entail upgrading in critical areas, including: management, equipment, quality systems and training.

## 1.2    Importance of policy and best practice:

Above we have explained what policy is and why it is important.  Best practice differs in that this is a set of procedures and practice that have been developed within an organisation, field of industry or workplace, where through training and learning from own and shared experiences, a set of work practices have resulted to guide work within a set context.  Best practice then, is the tradition of work practices derived at, which were found to work best within the given context.

Policy and best practice are important to:

- Help local entrepreneurs compete in the global economy AND improve earning opportunities and working conditions of local communities.
- Focus on what local entrepreneurs specialise in
- Consider how the global market for these products is organised
- Understand the value chains in the industry, so that policymakers can provide relevant and appropriate support.

## 1.3    Steps to conduct a VCA for policy planning

Some suggestions to be taken into account initially:

1. Remember, to properly maximize fisheries value chains, Fisheries Administrations must work in partnership with the Private Sector.
2. Utilising Part A of this manual in a step-by-step manner to identify issues relevant to your priorities.
3. Update your knowledge on elements of fisheries value chains in relation to policy development through reading trade and business journals, entrepreneurial seminar materials, professional association newsletters and online resources for state and local government regulations.  Network with peers, including professional counterparts from similar businesses - or develop your own network of similarly-situated experts who may be developing their own policies for value chain analysis. Authoritative fisheries journals and database sites that may guide you, include but are not limited to:  Fishing News International; Fish Farming International; Seafood International; Infofish International; Infofish Trade News; Globefish Highlights; Globefish European Fish Price Report; the FAO website; FAO FishStat database (internet); and internet fishing news website www.fis.com

4. Make sure: what the noted fisheries research institutions in your region are; regional fisheries management organization (RFMO's); Fisheries Administrations within your region; fishing industry associations; and fisheries donor and training organizations; and link up with those that are relevant to you  to ensure that the policy that results from your efforts, is relevant, current and will be used widely.

We can now focus on a step-by-step approach to define the main key points to conduct a VCA and address fisheries policies (Source: Value Chain Development; http://apps.develebridge.net/amap/index.php/Value_Chain_Development)

Firstly, from a policy maker's perspective, the goal of value chain analysis is to enable private-sector stakeholders to upgrade their firms and collectively create a competitive value chain that contributes to economic growth with poverty reduction. The role of the policy maker together with possible donor involvement,  is to facilitate and support implementation of the competitiveness strategy by the private sector in such a way that ensures that development objectives—economic growth, poverty reduction and other concerns such as sustainable natural resource management—are also met.

**Figure 15 Value Chain Analysis step**
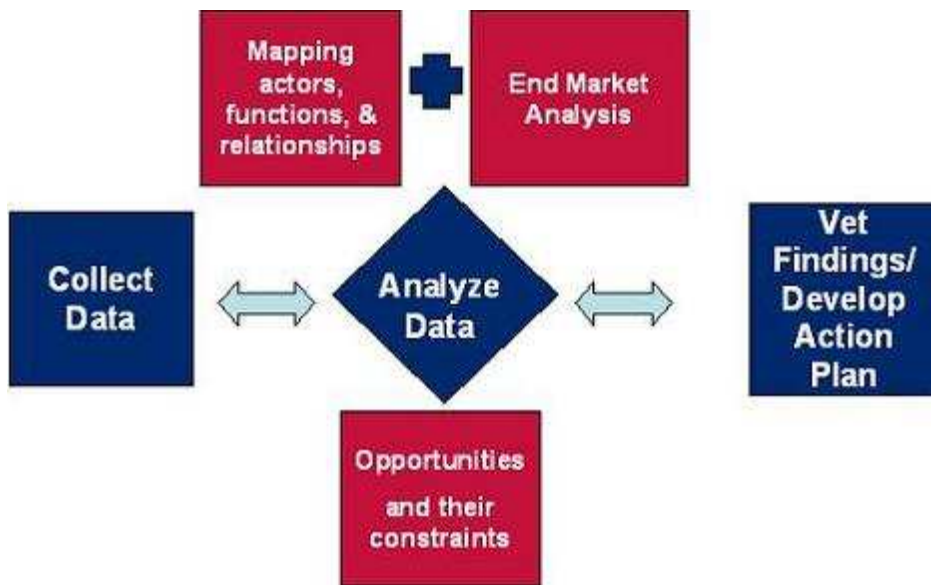


Value Chain Analysis is a process that requires four interconnected steps: data collection and research, value chain mapping, analysis of opportunities and constraints, and vetting of findings with stakeholders and recommendations for future actions. These four steps are not necessarily sequential and can be carried out simultaneously.

1. The value chain team collects data through primary and secondary sources by way of research and interviews.

2. The team compiles a value chain map, which helps to organize the data.

3. By using the value chain framework, the collected data is further organized and analyzed to reveal opportunities and constraints within the chain.

4. The resulting analysis of opportunities and constraints is vetted with stakeholders and used to design a strategy for the value chain to improve competitiveness and to agree on upgrading investments.

**Step One: Data Collection**

Good value chain analysis begins with good data collection, from the initial desk research to the targeted interviews. The value chain framework—that is, the structural and dynamic factors affecting the chain—provides an effective way to organize the data, prioritize opportunities and plan interventions.

The desk research consists of a rapid examination of readily available material. The aim is to familiarize the analyst with the industry, its market and the business environment it operates, as well as to identify sources for additional information. Information such as statistics on exports/imports, consumption reports, global trade figures, etc., can be obtained through the Internet, phone calls and documents from trade, commerce and industry ministries, specialized industry journals, and professional and trade association newsletters. Once the desk research is conducted, an initial value chain map can be drafted for refinement during the primary research phase.

Interviews are conducted with 1) firms and individuals from all functional levels of the chain, and 2) individuals outside the value chain such as economists. In addition to providing information about the movement of product and the distribution of benefits, the interviews should inform on value chain actors' current capacity to learn; how information is exchanged among participants; from where they learn about new production techniques, new markets and market trends; and the extent of trust that exists among actors. Interviews can help to identify where chain participants see opportunities for and constraints to upgrading. Missing or inadequate provision of services necessary to move the value chain to the next level of competitiveness can be identified locally, regionally or nationally.

In addition to individual interviews, focus group discussions are a useful way to explore concepts, generate ideas, determine differences in opinion between stakeholder groups and triangulate with other data collection methods. The group may consist of 7-10 people who perform the same or a similar function in the value chain. Guided discussion better captures the social interaction and spontaneous thought processes that inform decision making, which is often lost in structured interviews.

The qualitative data gathered will reveal dynamic factors of the value chain such as trends, incentives and relationships. To complement this, quantitative analysis of the chain is necessary to provide a picture of the current situation in terms of the distribution of value-added, profitability, productivity, production capacity and benchmarking against competitors. Analyzing these factors highlights inefficiencies and areas for reducing cost.

**Step Two: Value Chain Mapping**

Value chain mapping is the process of developing a visual depiction of the basic structure of the value chain. A value chain map illustrates the way the product flows from raw material to end markets and presents how the industry functions. It is a compressed visual diagram of the data collected at different stages of the value chain analysis and supports the narrative description of the chain.

The purpose of a visual tool in the analysis process is to develop a shared understanding among value chain stakeholders of the current situation of the industry. The mapping exercise provides an opportunity for multi-stakeholder discussions to reveal opportunities and bottlenecks to be addressed in subsequent stages of the project cycle. Maps also help to identify information gaps that require further research.

The Process of Developing a Value Chain Map:

It is recommended that value chain mapping be conducted in two phases; a) an initial basic map after the collection of initial data illustrating participants and functions, and b) adjusted mapping, which is conducted following additional and follow-on interviews. The detail level of the map depends on mission objectives and requirements established at the outset.

The steps for putting together a value chain map are as follows:

1. Collect data from secondary sources, key informant interviews and/or surveys
2. Use a function/participant worksheet, which includes the following elements:
   - input supply
   - production
   - assembly
   - processing
   - wholesale
   - export

   These elements help to organize key information about who is doing what in the value chain. Filling out the model table below can greatly facilitate drafting the value chain map. (Note: An actor can accomplish more than one function.)

Figure 16 Generic Worksheet crossing function with participants/actors

| FUNCTIONS | PARTICIPANTS / ACTORS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Village Stores | Input Supply Companies | Small-Scale Producers | Producer Associations | Medium-Scale and Commercial Producers | Traders | Processors | Wholesalers |
| Export | | | | | | | | ■ |
| Wholesaling | | | | | | | | ■ |
| Processing | | | | | | | ■ | |
| Assembly | | | | ■ | ■ | ■ | | |
| Production | | | ■ | | ■ | | | |
| Input Supply | ■ | ■ | | ■ | ■ | | | |

3. Draw the map using the basic map format. There are no rigid rules to value chain mapping, but to facilitate information sharing, the following are suggested presentation guidelines:
   - List end markets across the top of the map.
   - List functions down the left side of the map.
   - Fill in participants/actors according to their functions and markets, presented as block forms with inserted text in each entry. If participant/actors are involved in more than one function or market, extend the block to reach the relevant functions/markets. If their functions are not consecutive in the chain, the skipped function block is presented with dotted lines. Actors should be grouped by categories of firms rather than individual firms by name.
   - Draw the linkages between participant blocks with arrows in the direction of the product flow.
   - Define clearly market channels in a vertical manner culminating at end markets at the top of the map.

4. Include additional information relevant to the chain analysis. Examples include:
   - Identify categories or specific supporting service providers on the right side of the map.
   - Present value chain governance by different types of connecting arrows showing a variant governance patterns associated with separate market channels.

5. Add data overlays when relevant and helpful for the chain analysis. Overlays are represented by:
   - Number of firms with N (N =___)
   - Sales with S (S= ___)
   - Employment with L (L=___)
   - Volume with V (V=___)

The sample basic value chain map below, developed for a horticulture analysis in Tanzania, shows market channel differentiation from the producer level on up to either an export or a domestic consumer market.

**Figure 17 Process on VCA - example**
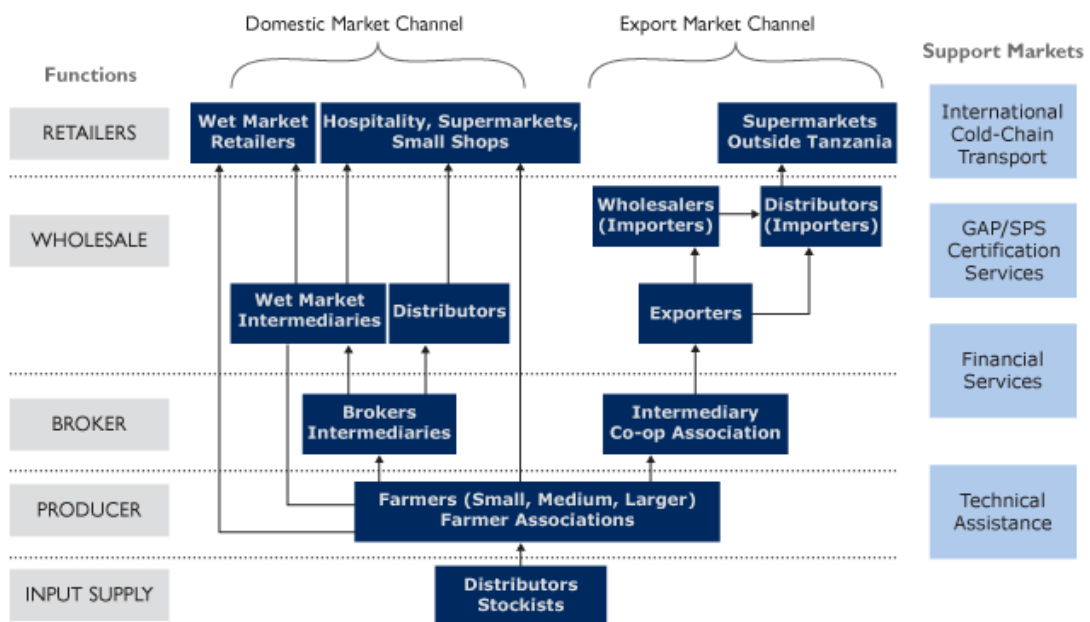


Mapping is a simple tool; while it is important, it has limitations:

- It does not show value chain dynamics, changes and trends of the chain. By definition, the map is a static snapshot of the value chain structure and cannot adequately represent factors that influence the conduct of individual value chain participants.
- It does not show end market requirements and opportunities. The map indicates final product markets, and at times, segmented market channels, but this does not explain the structure or dynamics of end markets.
- It only provides superficial information on supporting markets. The map generally only shows generic categories of support service providers such as "financial services" and says little about access to these services.
- It does not provide information on the enabling environment. Mapping is too simplistic a tool to describe the business enabling environment and its impact on value chains.
- There is a tendency to spend too much trying to refine the map and trying to reach agreement, rather than using the map as one of several tools to identify constraints to market opportunities.