

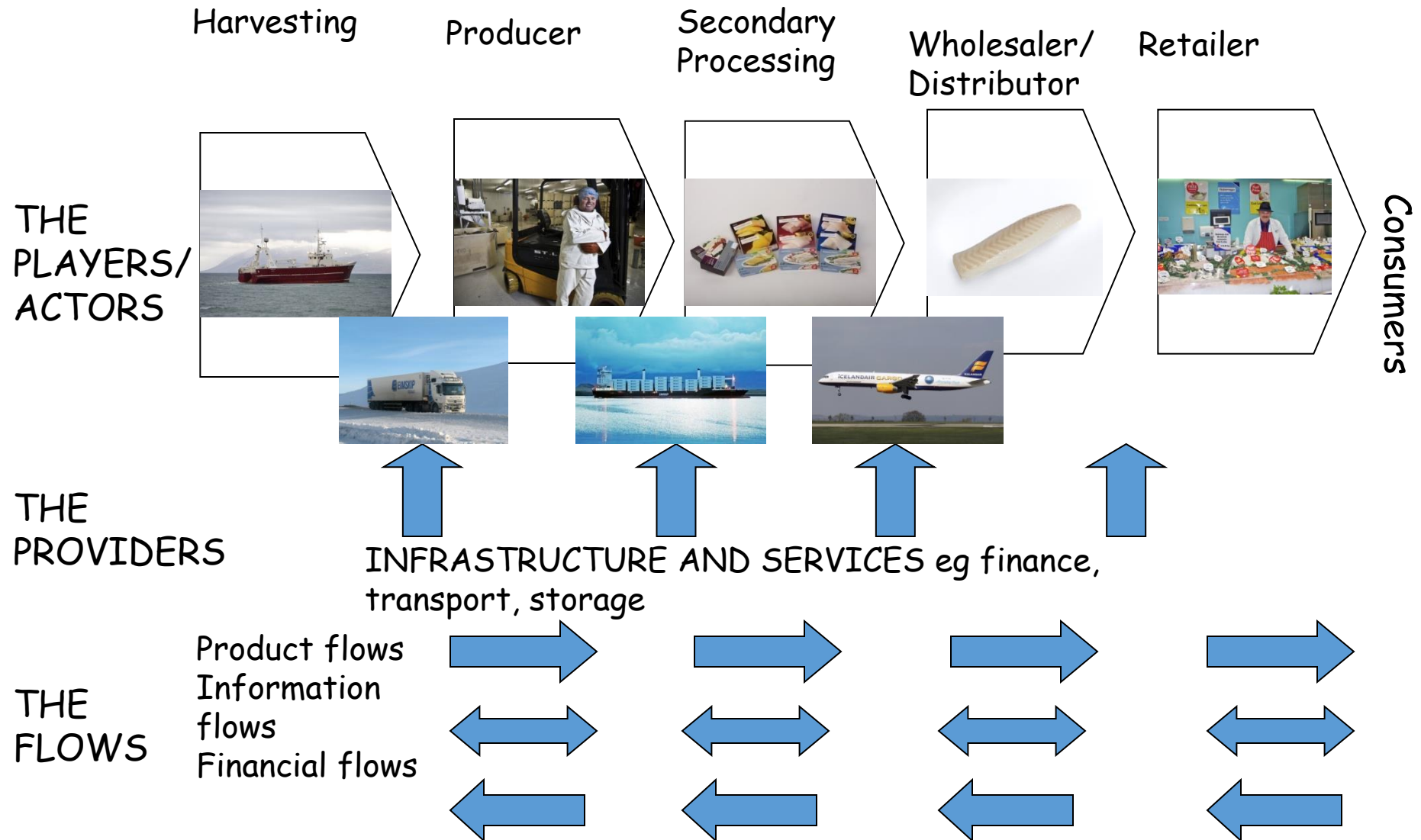


Value chain analyses

Value Chain course for Senior Fisheries Officers in the CRFM States

Ogmundur Knutsson
University of Akureyri
Dadi Kristofersson
University of Iceland

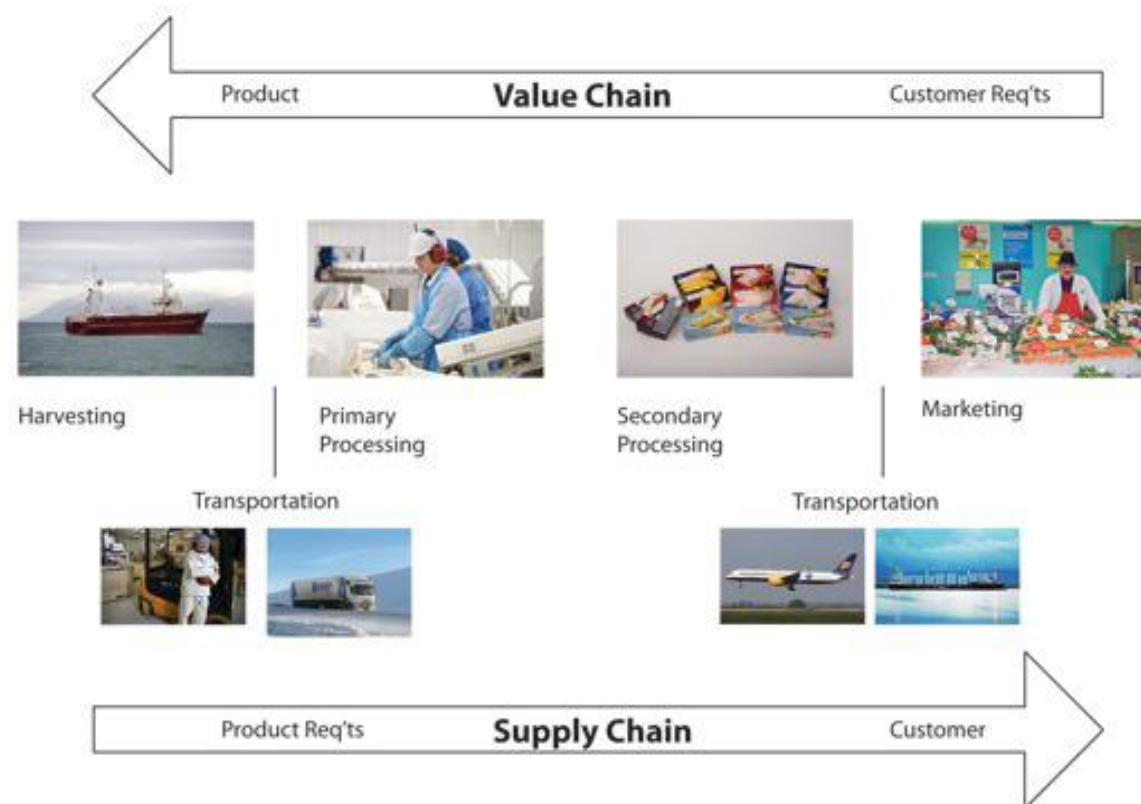
A supply/value chain is a system



Value chain versus supply chain

- The main objectives of value chain management are to maximize gross revenue and sustain it over time.
- Supply chains are concerned with what it costs and how long it takes to present the product for sale.
- The main objectives of supply chain management are to reduce the number of links and to reduce friction, such as bottlenecks, costs incurred, time to market etc.
- Good supply chain is essential to develop a value chain.

Supply- versus Value Chain



Value Chains Versus Supply Chains

by Andrew Feller, Dr. Dan Shunk, and Dr. Tom Callarman

Use of Value Chain Analysis

- The source of the **competitive advantage** of a company can be seen from its discrete activities and how they interact with one other
- The value chain is tool for **systematically examining** the **activities** of a company and how they **interact** with one other and **affect** each other **cost** and **performance**
- A company gains competitive advantage by performing these activities **better** and/or at **lower cost** than **competitors**

Key challenges of fish value chain

- Locations of fish resource & markets
- Complex global trading links patterns of exchange
- Heterogeneous raw materials require transformation & allocation to specialised value chains satisfying varied market needs
- Chain & activities are interdependent & influential
 - Delivered quality levels depend upon earlier chain activities
 - Value adding options depend upon earlier chain activities
- Vertical communication network & chain
- Consumers are ultimate determinate of values

Fish value chain

- The goal is to deliver maximum value for the least possible **total cost**
- The value chain framework shows that the value chain of an industry or a company may be useful in identifying and understanding crucial aspects to achieve **competitive strengths** and **core competencies** in the **marketplace**.
- The model also reveals how the value chain activities are tied together to ultimately create value for the **consumer**

Mapping the value chain

- Many ways to do it
 - Different levels of activities
 - show percents of turnover, sale
 - destination of sale
 - Wholesalers
 - Retailers
 - Concentration of sale
 - Numbers of buyers
 - Show the percent of value creation
 - Buy each actore/level
 - Put together all options for physical flow of the products
 - Include the supportive activities

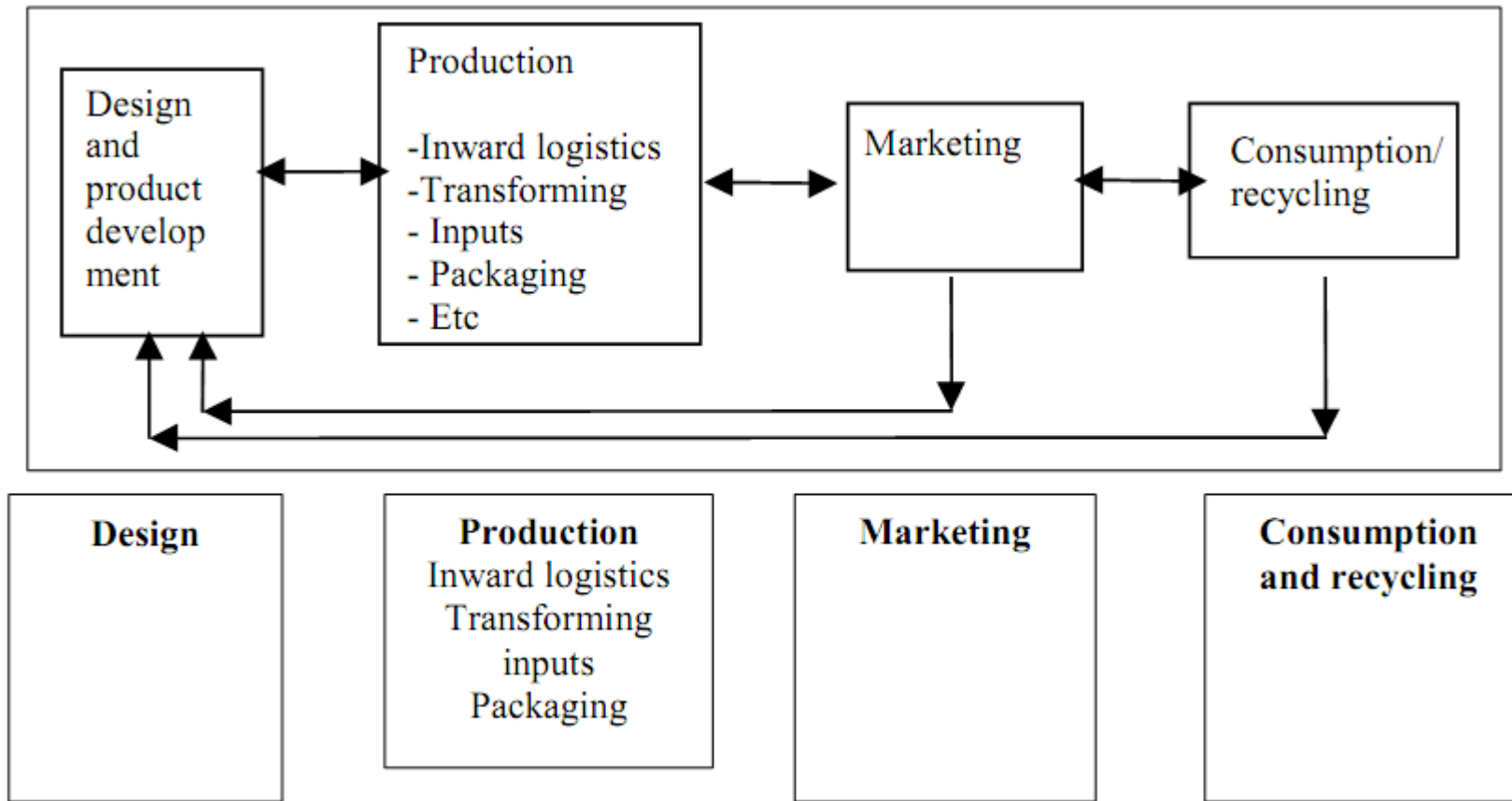
Value Chain

- Separates the business system into a series of value-generating activities
 - Goal of these activities is to offer the customer a level of value that exceeds the cost of the activities, thus creating a profit value
- Primary Activities
 - creating and delivering a product (e.g. component assembly)
- Support Activities
 - not directly involved in production but may increase effectiveness or efficiency e.g. R&D
- Outsourcing some primary & support activities is common

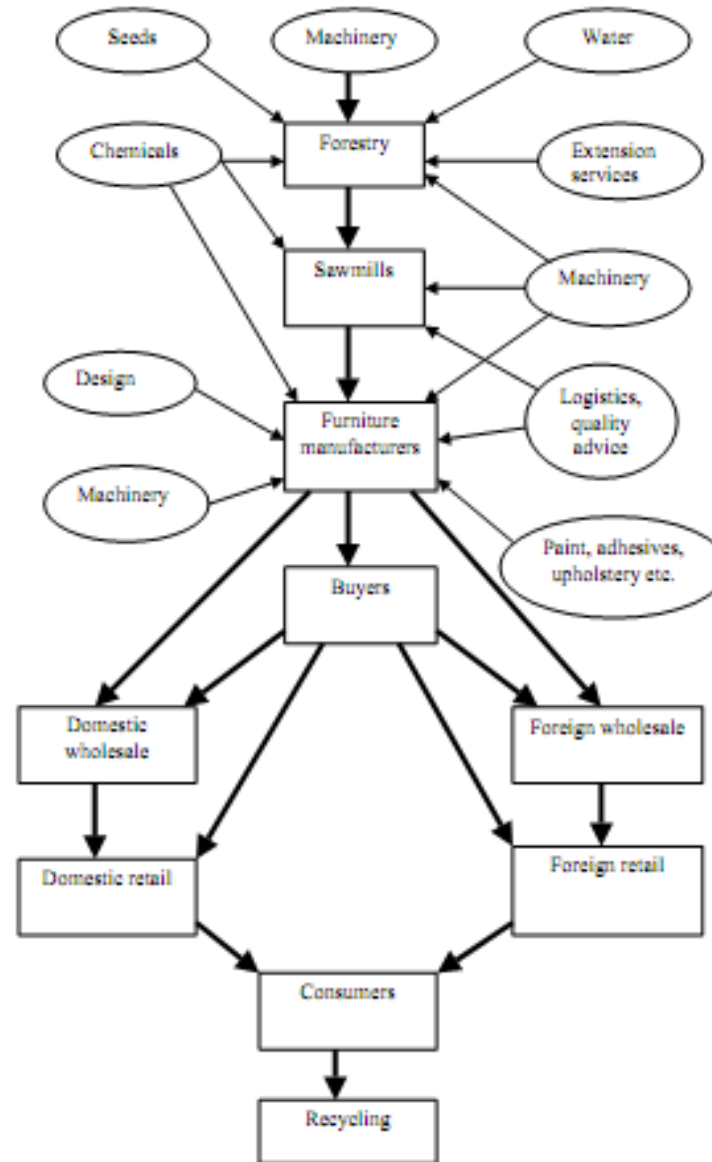
Mapping value chain

- The physical flow of commodities along the chain
- The flow of service, consultants and skills along the chain
- Gross output value
- Net output value (margin, that is gross output, minus input cost)
- Employment, where relevant distinguishing between permanent (on payroll) and temporary (off payroll) staff, gender, ethnicity.
- Destination of sale – for example to wholesalers and retailers; concentration of sales among major buyers; number of buyers
- Imports and exports, and to which region

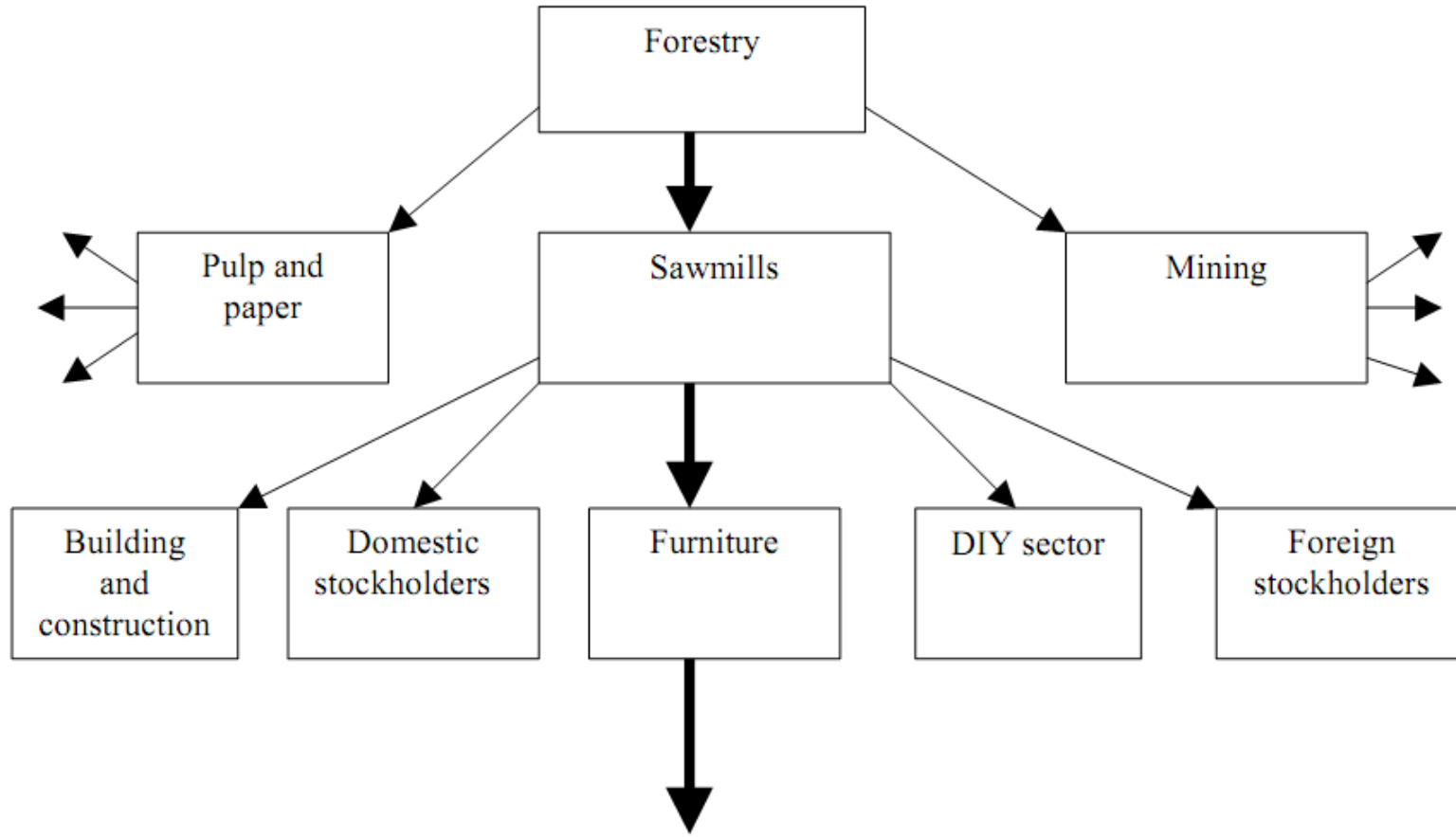
Four links in simple value chain



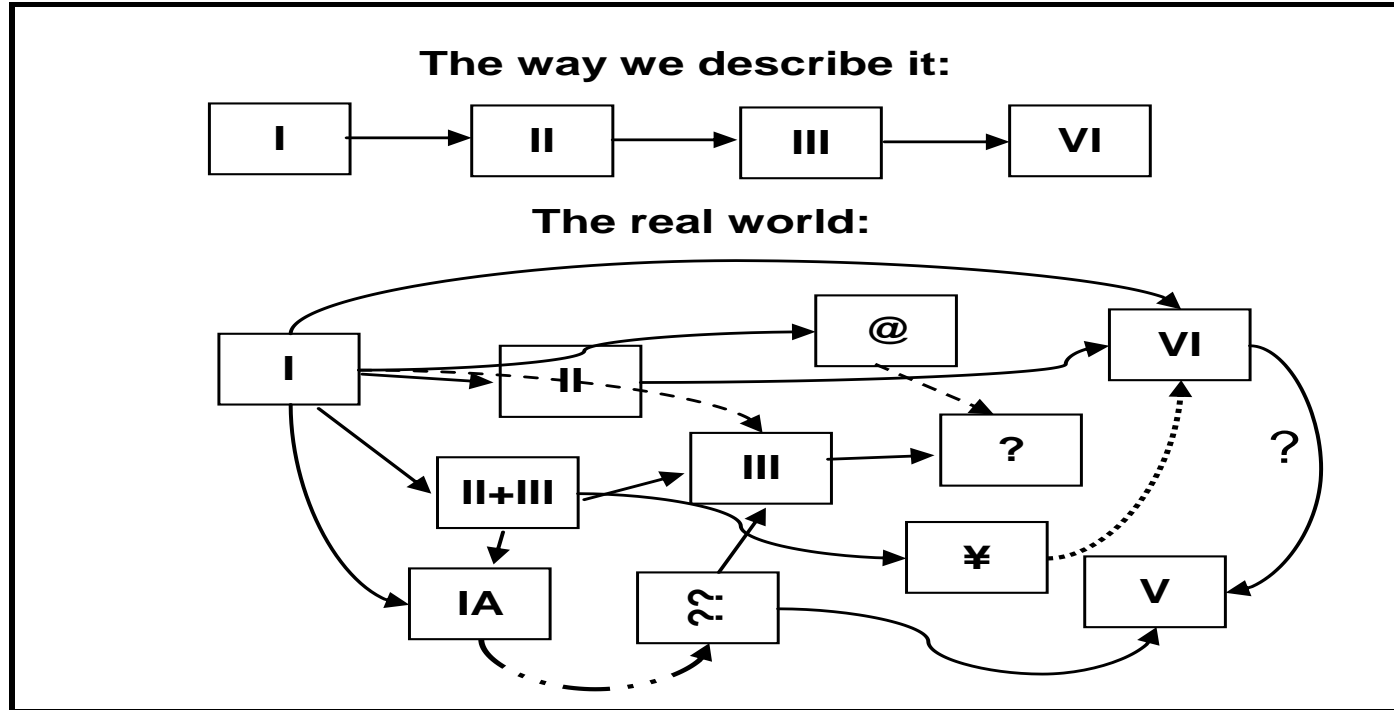
Complicated value chain



One or many value chains?

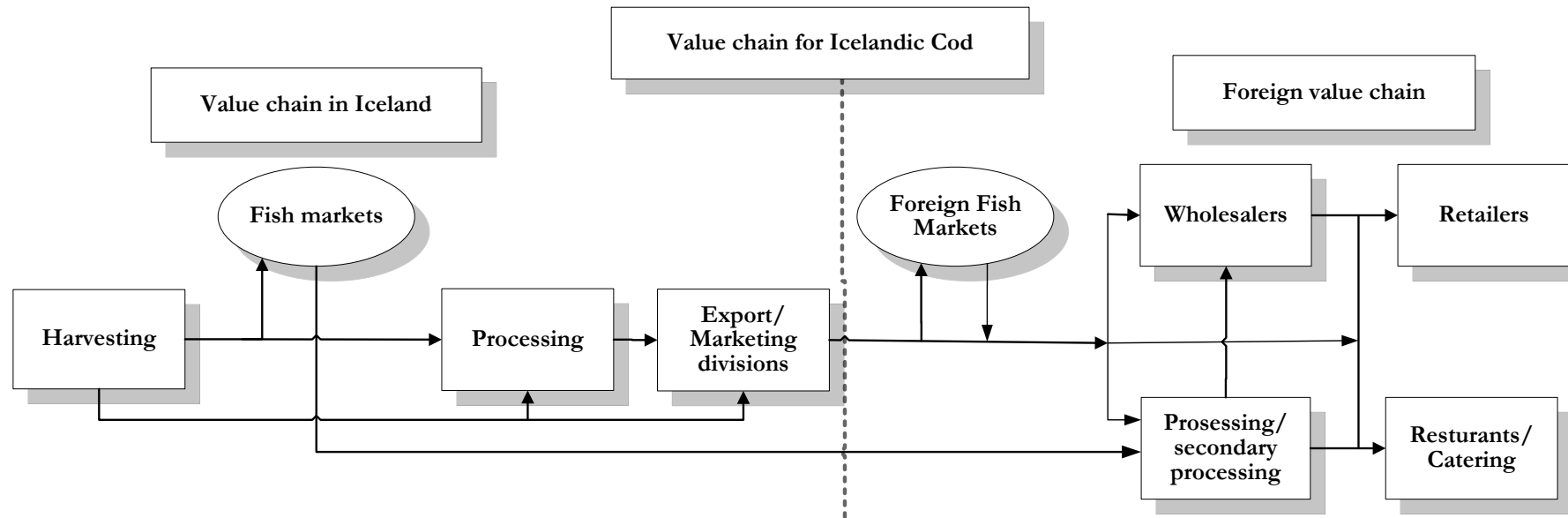


A Real World's Value Chain

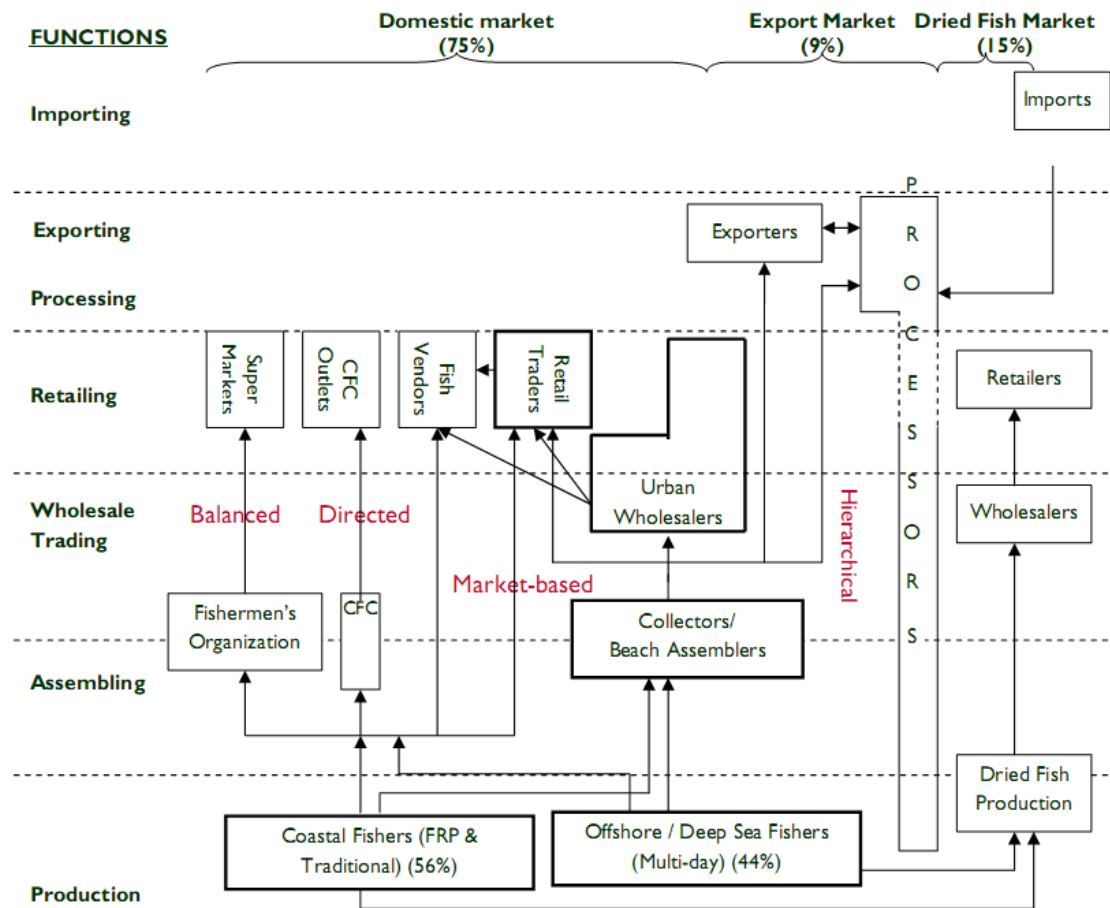


“The idea of a Value Chain is a simple principle to understand, but it can be a very difficult one to deliver. Lots of things can get in the way.”

The Value Chain for Cod in Iceland

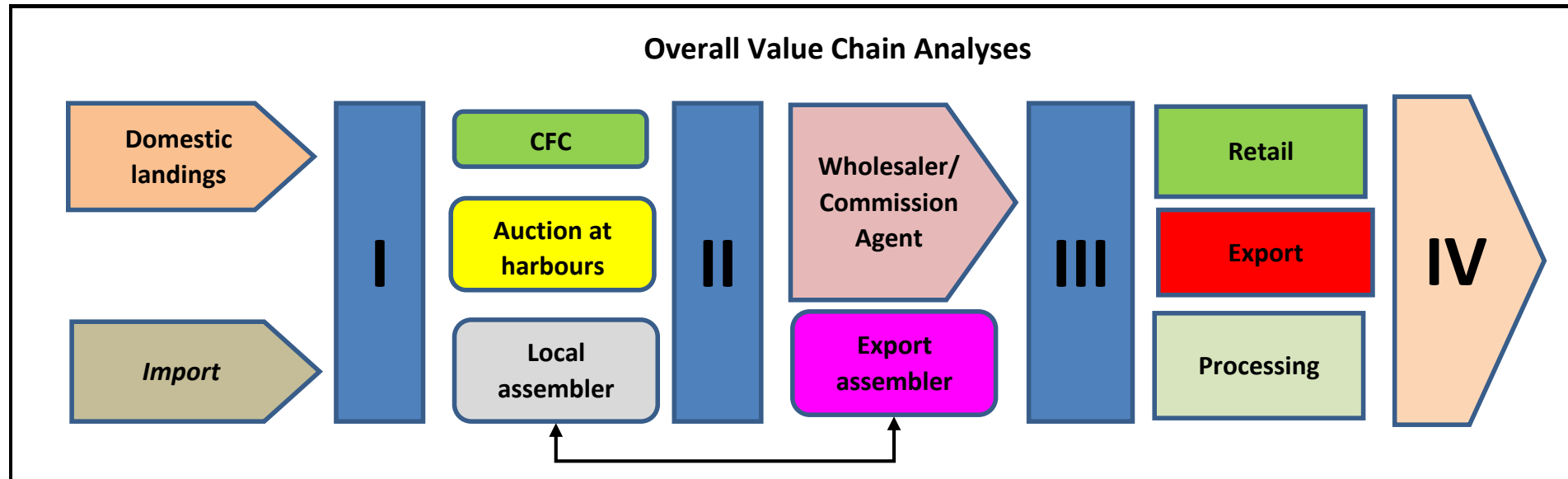


A Sri Lankan Fisheries Value Chain Map

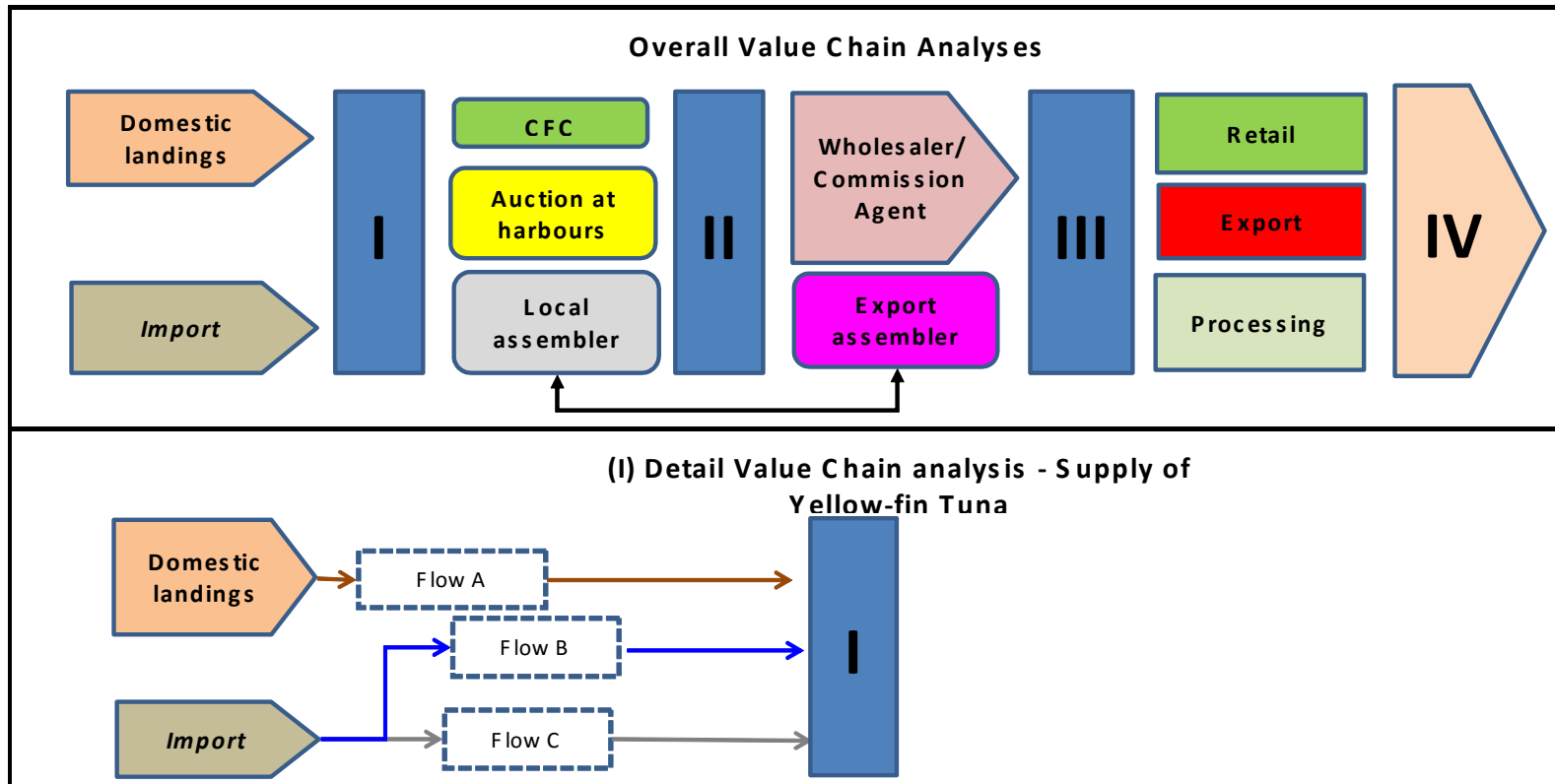


From Analysis of the fisheries sector in Sri Lanka. Arunatilake et al., microReport #100, USAID, 2008

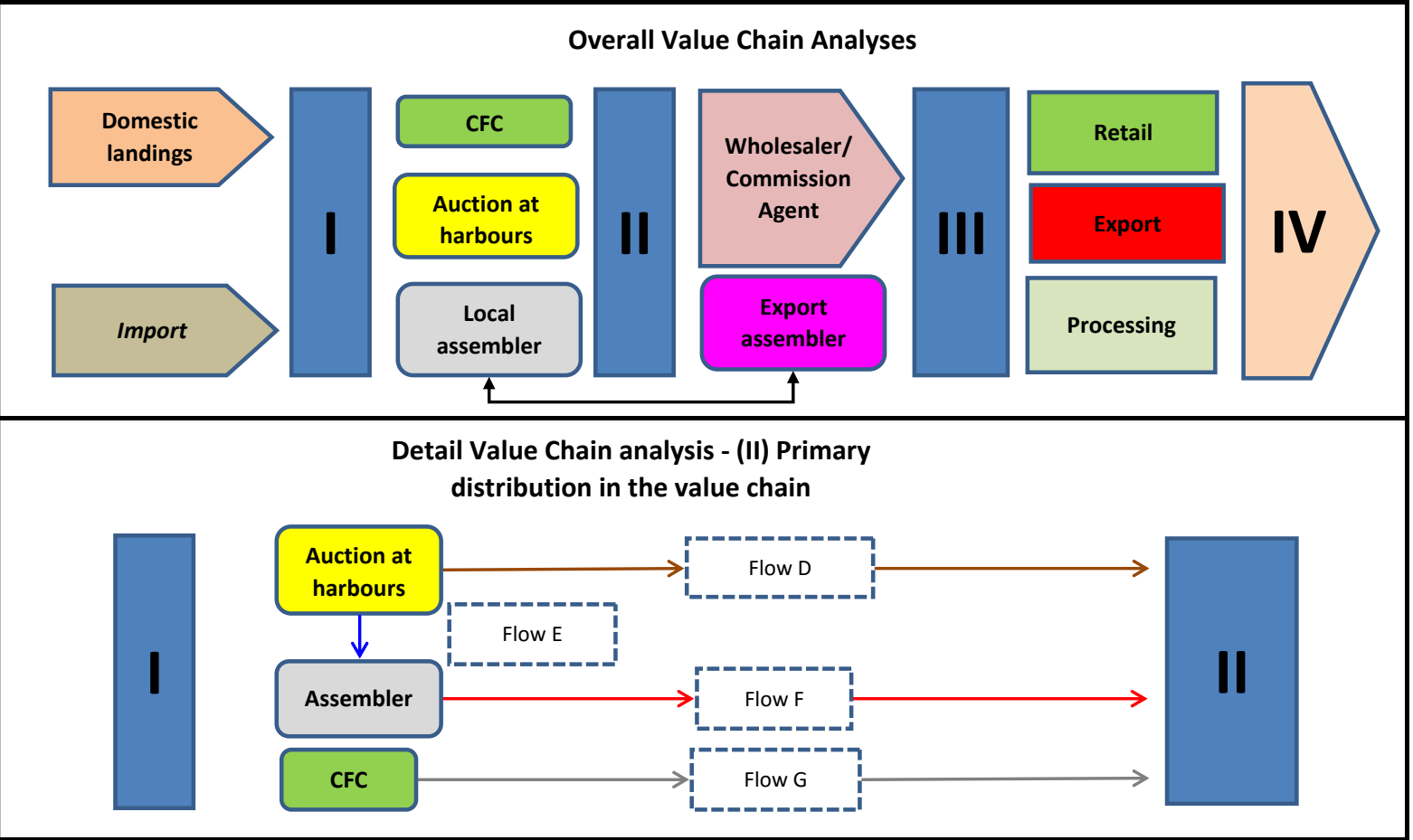
Value chain for Yellow Fin Tuna in Sri Lanka



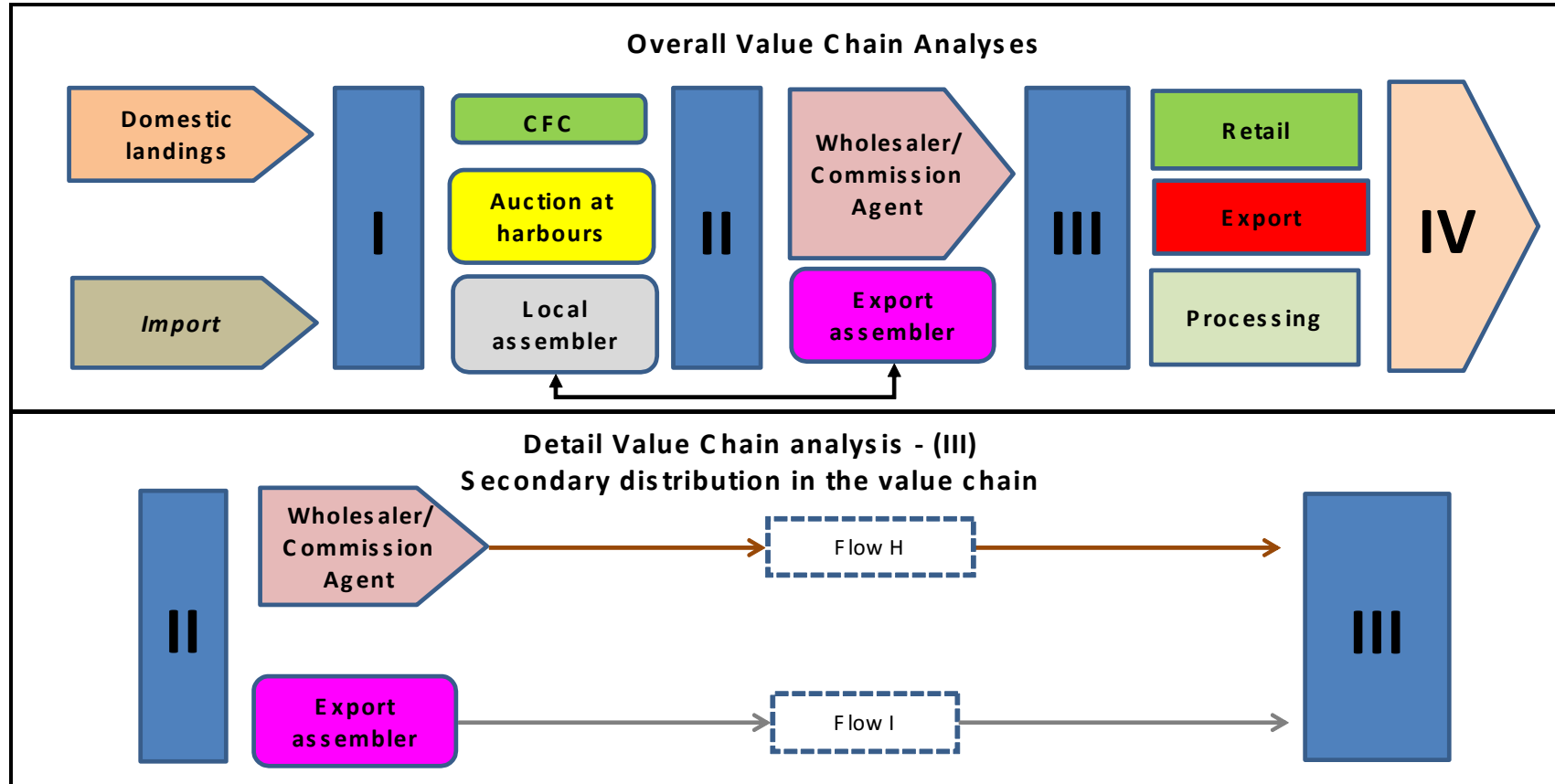
Supply sector



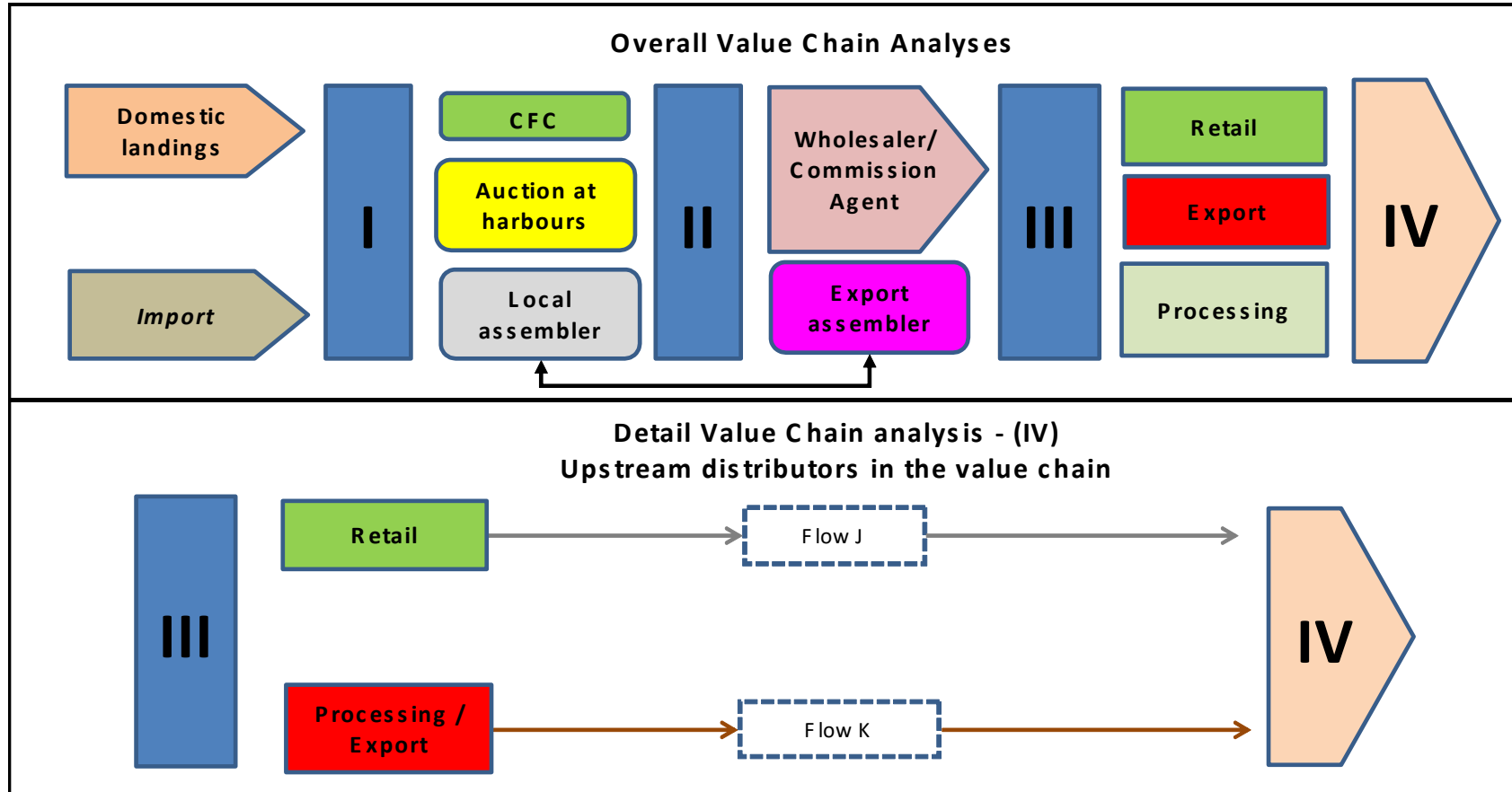
Primary distribution in the value chain



Secondary Distribution



Processing and marketing



Value chain studies

- Three main perspectives
 - How much value is created? **Economical perspective**
 - Total value creation,
 - Value creation and margin in each step of the value chain
 - What is creating value? **Networking/Business perspective**
 - Governance of the value chain
 - Vertical linkages, collaboration
 - What else than value? **Social responsibility perspective**
 - Employment
 - Rural development
 - Gender issues



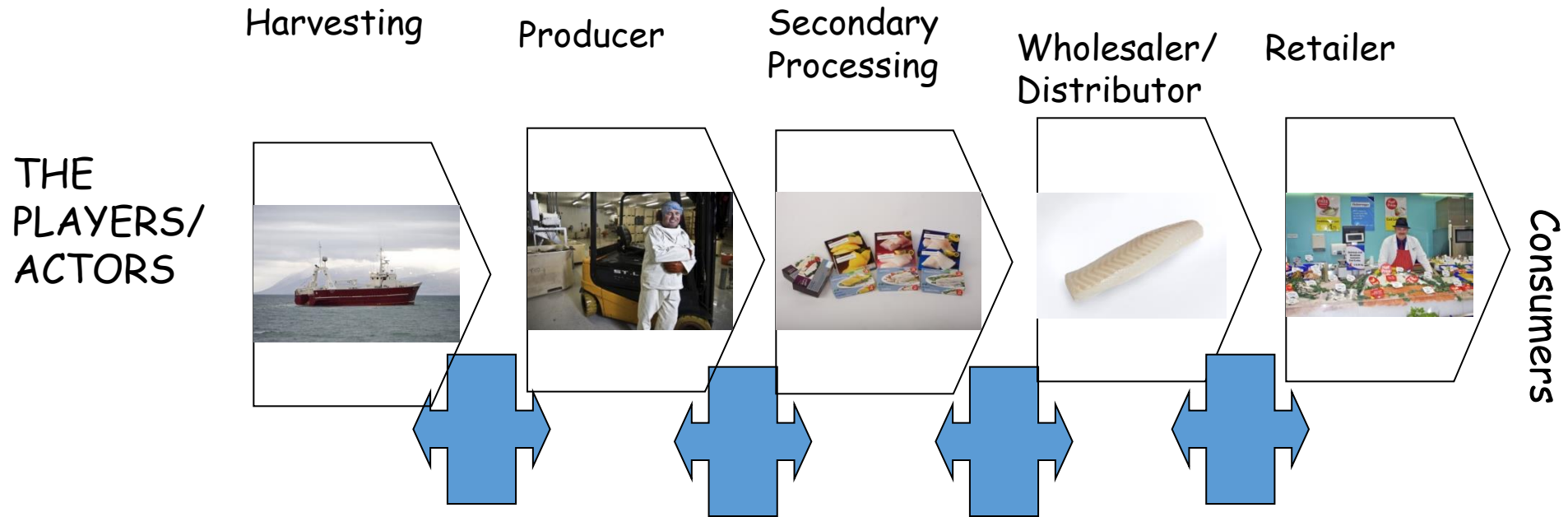
How much value is created?

Economical perspective

Value

- The value is the total revenue that buyers are willing to pay for the product.
- The difference between the total value (revenue) and the total cost of performing all the companies activities provides the margin
 - for each actor/step in the value chain
 - for the value chain as a whole

Value Creation



- When 'need' matches 'do', value is created; so value is both internal and external (the value you get and the value you give)

Economical returns

- Value creation in the value chain
 - Domestic
 - Foreign
 - Main markets
 - Product development
- Value distribution in the value chain
 - Value creation by each actor
- Margin of each actor in the value chain

Different arenas of value added and source of data

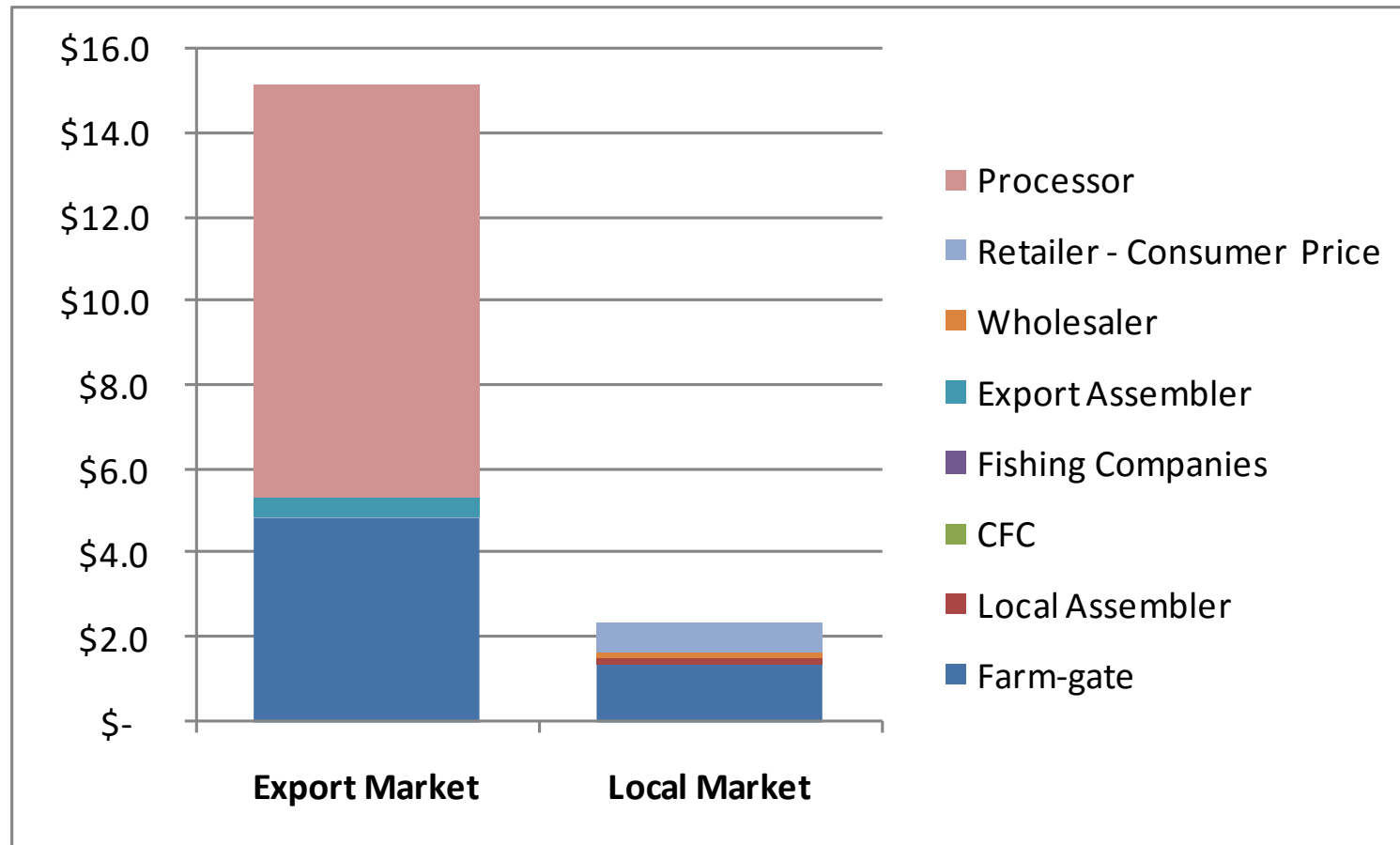
Value added in	What to look for	Data Sources
The activity within the plant/farm	Measure the role which discrete processes play	Use activity-based costing techniques in discussion with finance function of the firm
The plant/farm	Output costs (including profit) minus costs of material inputs and services; functional breakdown of costs (labour, depreciation, materials, utilities) also generally helpful	Finance function of the plant
The enterprise	Output costs (including profit) minus costs of material inputs and services; functional breakdown of costs (labour, depreciation, materials, utilities) also generally helpful	Finance function of the firm
The link in the chain	Differences between input and output costs for each link in the chain	Sales function in firm at apex of each link
The locality	Having defined the region, the difference between final output costs and materials and services imported into the region	Datasets are generally very poor, so rough approximations, simulating local input-output relationships (often involving primary research) will have to be made
The country	Contribution to GNP Net foreign exchange earnings	Value of final sales minus cost of inputs In a few cases where only domestic sourcing is involved, from value of exports. But in other cases, export values minus value of imports of relevant goods and services where these can be identified and repatriated profits

Raphael Kaplinsky and Mike Morris 2000,
A HANDBOOK FOR VALUE CHAIN
RESEARCH

Value (fob price) added from wet fish price

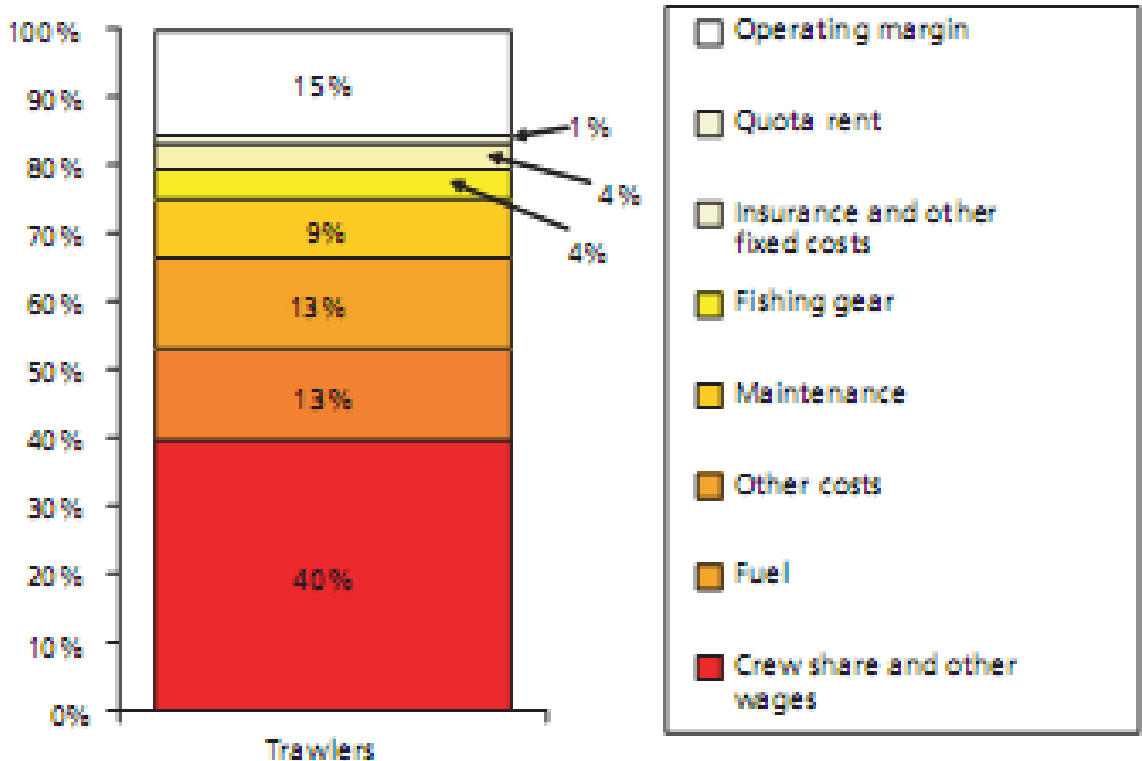
Cod	1992-99	2000-05	2006-10
Fresh whole fish	67%	45%	34%
Fresh fillets	64%	94%	107%
Land frozen	43%	40%	26%
Frozen at sea	38%	47%	31%
Salted	97%	83%	80%

Value Adding in the Value Chain of Tuna in Sri Lanka



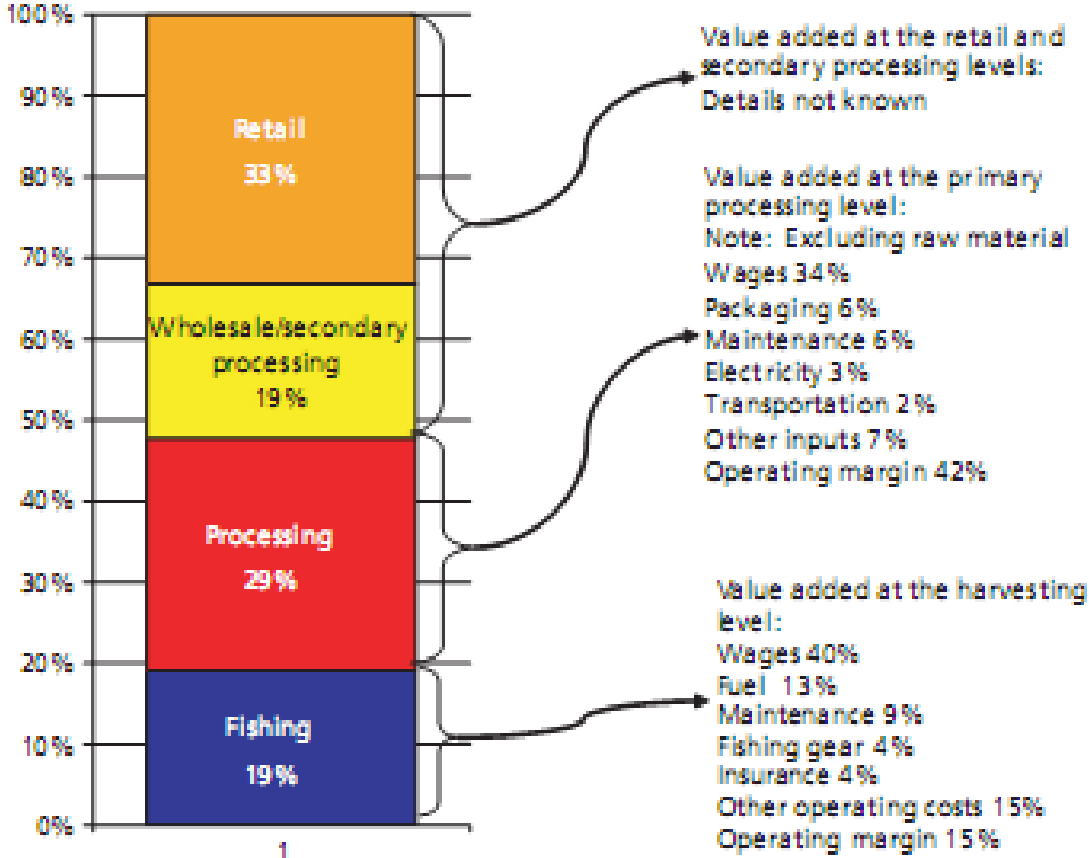
Cost Structure for an Icelandic Trawler

Cost items as a share of total revenue for the Icelandic trawler fleet in 2001



Source: Statistics Iceland

Value Added for Cod Fillets to US Markets



Different profit indicators, strengths and weaknesses

Indicators of profit	Weaknesses and strengths	Data sources
<p>Poor indicators of profit</p> <p>1. Return on equity</p> <p>2. Margins on sales</p> <p>3. Share of total value chain profit</p>	<p> Ignores gearing through use of loans or payment schedules to debtors and creditors</p> <p> Sales margins generally slimmest when value added is thinnest, but this may bear little relation to return on net assets</p> <p> Enterprises typically feed into a number of value chains; takes no account of investments</p>	<p> Balance sheets</p> <p> Interviews with finance function in firms; balance sheets</p> <p> Balance sheets and interviews with finance function in firm</p>
<p>Better indicator of profit</p> <p>Returns on net assets</p>	<p>Takes account of equity and loans and payment schedules to debtors and creditors</p>	<p>Balance sheets</p>

Calculating returns to all factors in the value chain

Factor	Indicator of distribution	Method of calculation	Data sources
Labour	Incomes sustained	Overall wages and salaries bill divided by numbers of employee hours; to include temporary and part-time workers Repeat procedure with main suppliers and calculate overall average	Balance sheet and financial and personnel functions in the enterprise
Capital	Rates of profit (on net assets or shareholders funds)	Read off balance sheets	Balance sheet and financial and personnel functions in the enterprise
Natural resources	Rates of profit (on net assets or shareholders funds) Royalties	Read off balance sheets Read off official documents	Balance sheets and financial function of the enterprise Government publications; financial function of the firm



What is creating value?

Networking/Business perspective

What is creating value ?

- The structure of the value chain and the main actors and activity
 - Key actors
 - Main activity
 - Consolidation
- Governance of the value chain
- Relationship within the value chain
 - Cooperation between actors along the value chain
 - Culture
 - Power and trust
 - Leading companies in the value chain
- Knowledge and use of IT in the value chain
- The strategic position within the value system

Structure of the value chain

- The structure of the value chain, **mapping** the value chain
- The main actors and activity inside, description
 - Key actors
 - Size
 - Number
 - Main activity
 - What actor control the key activities
 - Stakeholder analyses
- Consolidation inside the value chain
- Degree of vertical integration
- Leaders in the value chain

Middleman in fisheries value chain

- Who are they
 - Fisherman's associations
 - Auction markets
 - Wholesalers
 - Assembler buying fish for reselling
- Role of the middleman
 - Increasing value
 - Establishing business relationship
 - Spreading risk
 - Putting in place right incentives
 - Decreasing value creation
 - Blocking information flow
 - Pre cooking information
 - Make fishermen dependent on them through funding fishing gear, engine, etc.
 - Price mechanism that ignore marketing signals

Analysing connection to the final market

Issues in buying	Method of data collection	Data required
Identification of key buyers	Analysis of key market segments; ask suppliers for names of major buyer	Concentration ratios in market segments'; names of key buying firms/individuals
Dynamics of the buying function	Analysis of key market segments; discussions with key buyers	Changing distribution of sales through different marketing channels
CSFs of different buyers	Interviews with key respondents	Use 1-7 CSF methodology discussed above; time trend of competitiveness of suppliers
Strategic judgements on sources of supply	Interviews with key respondents	Judgements of which supply sources are likely to be winners, and why this might be the case
Supply chain management policies	Interviews with key respondents, both amongst buyers and suppliers (to triangulate results)	Overview of strategic policy; number and concentration of suppliers; length of relationship with key suppliers; use of open-book costing ; frequency and depth of communication between buyers and suppliers; frequency and nature of visits to and by suppliers, and who makes visits
Supply chain upgrading policies	Interviews with key respondents, both amongst buyers and suppliers (to triangulate results)	Specific steps taken to upgrade (or prevent upgrading) by suppliers; size and budget of supply chain management function in buyers; frequency and nature of visits to and by suppliers, and who makes visits

Critical Success Factors

- Limited number of pilot interviews to get feeling for the CSFs in the market
 - Different between markets
- Key respondents asked about important of these CSFs are in each market segments, using scale from 1-7 or 1-10

Assessing relative import ants of CSFs

Industry specific CSFs		1 Not Important	2	3 Moderately important	4	5 Fairly important	6	7 Critically important
Fresh Fish	Frozen fish							
Quality	Quality							
Freshness	Freshness							
Quantity	Quantity							
Price	Price							
Delivery reliability								
Size	Size							
Conformance to specification	Conformance to specification							
Packaging	Packing							
Flexibility	Flexibility							
Innovation	Innovation							
Financial stability	Financial stability							
Responsiveness								
Other:								

Governance Mechanisms

- Coordination
 - Written rules and control
 - Personal coordination and communication
 - Group decision and team work
- Strategic leadership (strategic centre)
- Information openness
- Mutual support
- Personal networks

Governance in value chain

- Some value chain exhibit very little governance at all, or at best very thin forms of governance
- In most value chain there are multiple points of governance
 - Legislation, judicial and executive governance
 - Overlapping between vertical and horizontal
- Some have both producers- and buyer driven governance

How to identify the key governor/lead firm in the chain

Indicators	Strength and Weaknesses	Source of data
Share of chains sales	Not a strong indicator as may only be a reseller of bought-in materials and may lack influence	Balance sheets
Share of chain value added	A better indicator for measuring size since it reflects the share of the chain's activities	Firm-level interviews
Share of chain profits	May be a good reflection of chain power, but may also arise from monopoly control over scarce raw materials (e.g. platinum) and may have little influence over downstream processing	Balance sheets, but it is likely that this data will only be available for publically-owned companies
Rate of profit	A poor indicator since minor players in the value chain may be relatively profitable but have little influence	Balance sheets, but it is likely that this data will only be available for publically-owned companies
Share of chain buying power	A good indicator power, particularly if there are asymmetries, that is its dependence-on its suppliers is less than their dependence on the lead firm	Firm-level interviews
Control over a key technology (e.g. drive-train autos) and holder of distinctive competence	A good indicator in producers-driven chains such as autos since this defines the distinctive competence of the chain (BMW's image as a quality, refined car) while smaller firms "fill in the p-gaps" in the chain	Firm-level interviews
Holder of chain "market identity" (e.g. brandname)	May be critical in markets where brand image is very important	Firm-level interview; studies of market share of brands in final markets

Example of rules

Type of standard	Product	Food hygiene standards; lead content in toys	G3 standards for cellular phones	“Homogenisation” of regulations on product types (e.g. for automobiles in the EU)	Firm standards supporting brand name
	Process	Health and safety standards in work	ISO9000 (quality) SA8000 (labour)	QS9000 (quality in autos, originating in the US), BS5750 (quality standards originating in the UK)	VDA6,1 (VW quality standards)
Raphael Kaplinsky and Mike Morris 2000, A HANDBOOK FOR VALUE CHAIN RESEARCH		Legal codification	Internationally agreed	Regionally specific	Firm specific
Type of codification					

Culture

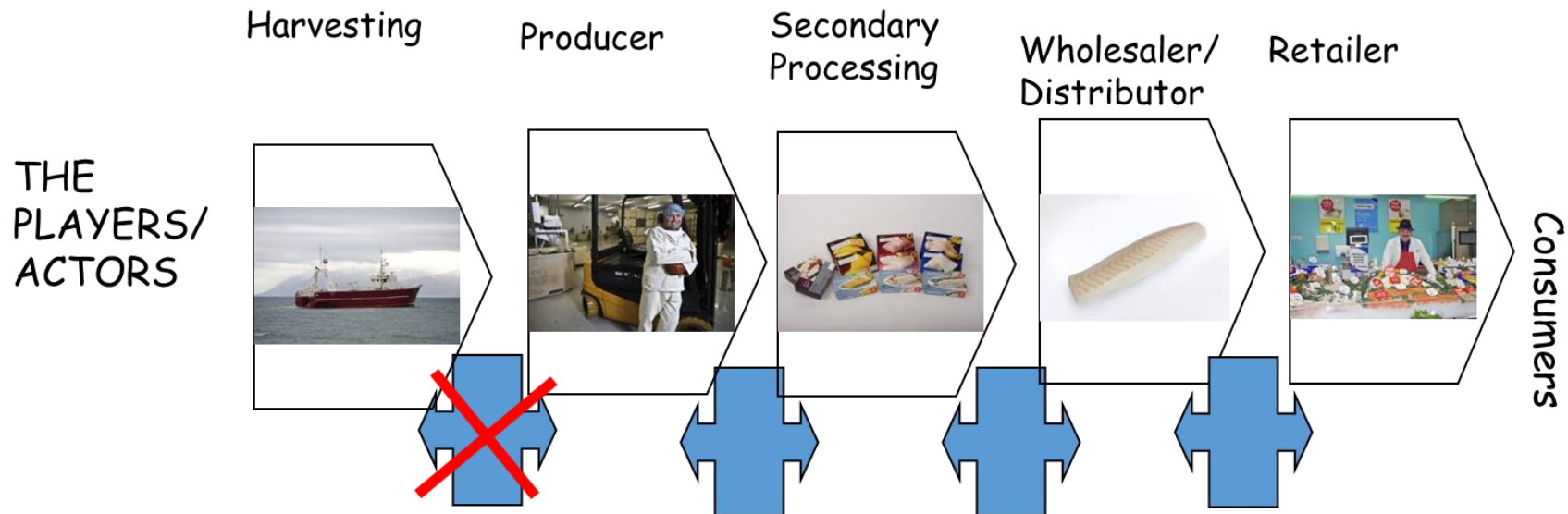
- National Culture
- Companies culture
 - corporate culture is the way that management mobilizes combinations of values, language, rituals and myths Thompson P. and McHugh D., page 198
- Necessary to be aware of different culture
- Necessary to build up positive and supportive culture

Power

- Power is often difficult to analyse in Value chain
- Power struggle is dangerous to value chain governance
- Mismatch of power between partner can be dangerous
- Larger firm usually have more power
 - Share of chain activities
 - Share of chain value added
 - Share of chain profits
 - Relative rate of profit
 - Share of chain buying power control over key technology and distinctive competence
 - Holder of chain “marketing identity (e.g. brandname)

Trust and Attitude

- Trust and attitude, are the key element in successful cooperation in the value chain
- Transactional Cost Theories and Competitive Analysis of Porter build on lack of trust and dominate position
- It takes time to build up trust and it needs positive and supportive attitude



Assessing trust relationship in the Value Chain

Raphael Kaplinsky and Mike Morris 2000,
A HANDBOOK FOR VALUE CHAIN
RESEARCH

	Low trust chains	High trust chains	Data sources
Length of trading relationship	Short-term	Long-term	Sales function in suppliers, purchasing function in buyers
Ordering procedure	Open bidding for orders, with prices negotiated and agreed before order commissioned	Bidding may not take place, or likely winner known in advance. Prices settled after contract awarded	Sales function in suppliers, purchasing function in buyers
Contractual relationship	Supplier only starts production on receipt of written order.	Supplier more flexible about instructions and will start production without written order	Sales function in suppliers, purchasing function in buy
Inspection	Inspection on delivery.	Little or no inspection on delivery for most parts.	Sales function in suppliers, purchasing function in buyers
Degree of dependence	Supplier has many customers, and customer has multiple sources	Few customers for supplier and single- or dual-sourcing by customer	Sales function in suppliers, purchasing function in buyers
Technical assistance	Expertise rarely pooled, and assistance only when paid for.	Extensive unilateral or bilateral technology transfer over time.	Production control, quality and product development functions in both supplying and purchasing firms
Communication	Infrequent and through formal channels. Narrowly focused on purchasing department.	Multi-channeled, including, engineers, personnel department and top management; frequent and often informal	Production control, quality and product development functions in both supplying and purchasing firms
Price determination	Adversarial, with hiding of information	Non-adversarial with "open books	Sales function in suppliers, purchasing function in buyers
Credit extended	Punitive or no credit extended	Easy access to letters of credit, longer payback period, easy terms.	Nature of letters of credit, finance section in suppliers and buyers
Outsourcing payment terms	Long delays in paying agents and informal economy producers	Payment on receipt of finished goods	Outsourcing agents, outsourcing firms, informal economy producers

Analysing knowledge intensity in the value chain

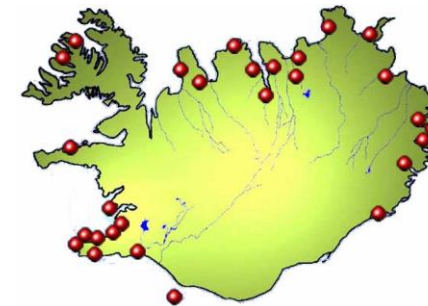
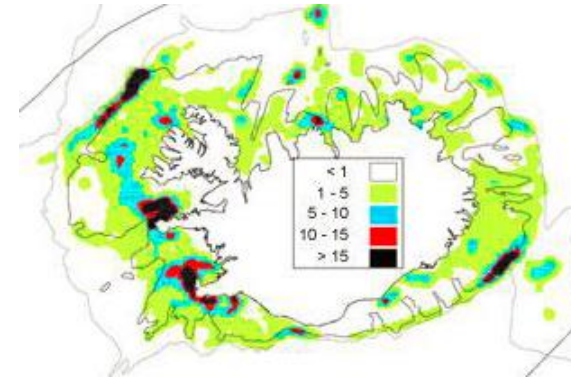
Area of knowledge focus	Subject of analysis	Data source
<i>Skilled and unskilled workers</i>	Numbers, division of labour and rewards of different labour skills in each link in the chain	Finance and HR functions in the enterprise
<i>International mobility of skills and knowledge</i>	<p>Mobility of skilled personnel (number and nature of visits)</p> <p>Division of labour around skills in the value chain</p> <p>Use of email and the internet</p>	<p>Public data sources on travel</p> <p>Interviews with various functions in enterprises throughout the chain</p> <p>Use of www</p>
<i>Use of IT in value chains</i>	<p>Inventory and analysis of use of IT within each link in the chain</p> <p>B2B links</p> <p>B2C</p> <p>B2G</p>	<p>Interviews with IT function and production control in enterprises</p> <p>Sales and purchasing functions; analysis of specialised web-portals</p> <p>Sales function; analysis of specialised web-portals</p> <p>Finance function</p>

Strategic Position

- The strategic position of each company in the value system
 - Is there leading company
- Key success factors for the industry and the Value chain
 - What companies has those key success factors
- Driving forces within the industry
 - Marketing driven
 - Product driven
 - Harvesting driven

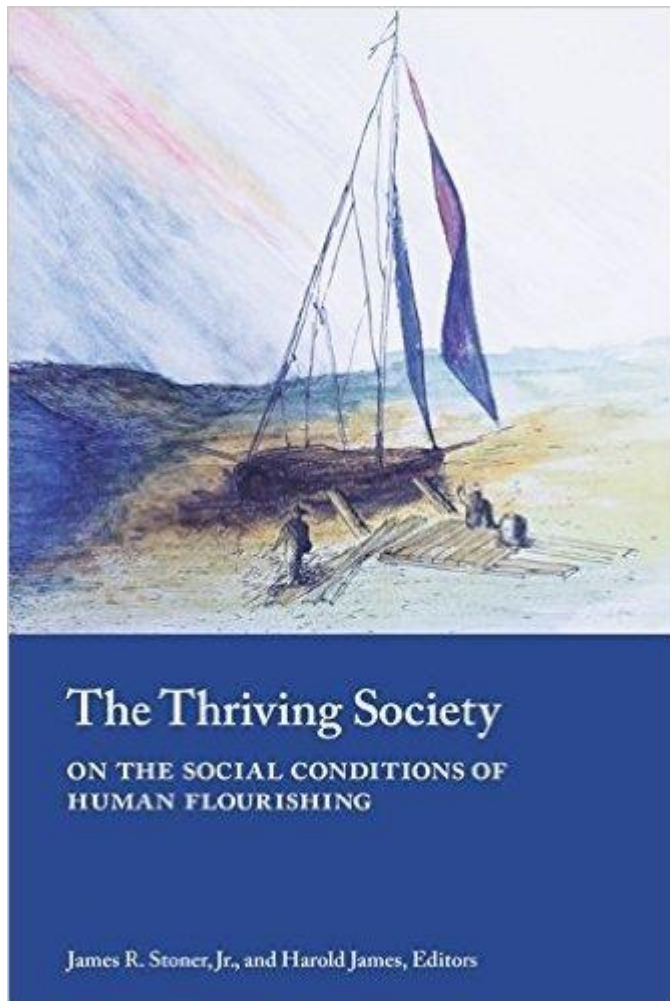
Drive force of the value chain

- Harvesting driven
 - Access to fishing ground
 - Small scale fishing
 - Seasonal
 - Minimize catching cost
- Quantity driven value chains need
 - Proximity to fishing grounds
 - Large capacity
 - Minimize processing cost
- Market driven value chains need
 - Marketing
 - Product development
 - Quality awareness
 - Maximize profitability



External forces on the value chain

- Government intervention
 - The Fisheries Management Systems
- Pressure groups
 - Environments
 - NGO's
 - Consumers
 - Etc...
- Legislations and standards
 - ISO
 - Etc..



What else than value?

Social responsibility perspective

Value chain analyses

Socio-economic impacts of base industries on societies

- Socio-economic returns
- Stakeholders interests
- Socio-economic returns
- Resource
- Spatial structure
- Gender issues
- Labour market information
- Regional development
- Social status of fisherman
- Carbon footprints

Benchmarking

- Whom to benchmark against?
 - Its own historic performance
 - Companies in doing similar activities
 - Companies in the same sector
 - Companies in other sectors, but with similar processes
- Generally it is best to benchmark against companies that are producing like-for-like product or services

Benchmarking

- What to benchmark?
 - Which activities to benchmark?
 - Physical transformation of inputs
 - Important activities for the chain competitiveness
 - Design
 - Marketing
 - Office activities
 - Performance outcome, % of waste
 - Practices, numbers of improvements projects etc.

Benchmarking

- Cost competitiveness
- Quality
- Lead times to satisfy customers orders
- The capacity to make minor and frequent changes (continues improvement)
- The capacity to make fundamental changes to products and processes

Benchmarking

Market drivers	Operational performance measures	Linked organisational practices
1. Cost control	Inventory use (raw materials, work in progress, finished goods)	Single unit flow, quality at source, cellular production, production pulling (kanbans)
2. Quality	Customer return rates, internal reject, rework and scrap rates, return rates to suppliers g	Quality control structures, statistical process control, quality circles, team working, multi-skilling
3. Lead times (value chain flexibility)	Time from customer order to delivery, delivery frequency of suppliers and supplier delivery reliability, delivery frequency to customers and delivery reliability	Business process engineering, cellular structures in order processing and dispatch, value chain relationships and supply chain management
4. Flexibility (Internal operational flexibility)	Manufacturing throughput time, machine changeover times, batch and lot sizes, inventory levels, production flow	Production scheduling, JIT, single minute exchange of dies, multi-tasking and multi skilling, cellular production in manufacturing
5. Capacity to change (Human resource development)	Literacy and numeracy levels, employee development and training, suggestion schemes, labour and management turnover rates, absenteeism rates, output per employee	Continuous improvement (kaizen), work organisation, worker development and commitment programmes, industrial relations
6. Innovation capacity	R&D expenditure (process and product), contribution of new products to total sales	Concurrent engineering, R&D
Source: Barnes, 1999; Industrial Restructuring Project: Policy Brief no 5, 2000		

Summary



Indicators of Innovation and Upgrading

Type of upgrading	Practices	Performances
Improving process efficiency		
Within the chain link	R&D; changes in logistics and quality practices; introducing new machinery	Lower costs; enhanced quality and delivery performance; shorter time-to market; improved profitability; enhanced patenting activity
Between chain links	R&D; supply chain management procedures; e-business capabilities; facilitating supply chain learning	Lower final product costs; enhanced final product quality and shorter time to-market; improved profitability throughout value chain; enhanced patenting activity
Introducing new products or improving existing products		
Within the chain link	Expansion of design and marketing departments; establishment or strengthening of new product development cross functional teams;	Percentage of sales coming from new products (e.g. products introduced in past year, past 2 and past 3 years) Percentage of sales coming from branded goods
Between chain links	Cooperating with suppliers and customers in new product development – concurrent engineering	Number of copyrighted brands Increase in relative unit product prices without sacrificing market share
Changing the mix of activities		
Within the chain link	New higher value added chain-specific functions absorbed from other links in the chain and/or low value added activities outsourced	Division of labour in the chain Key functions undertaken in individual links in the chain Higher profitability; increase in skill and salary profile
Between chain links	Moving into new links in the chain and/or v	
Moving to a new value chain	Vacating production in a chain and moving to a new chain; adding activities in a new value chain s	Higher profitability; proportion of sales coming from new and different product area

Blockers and enablers to upgrade

	Blockers	Enablers
Inside the firm	<ul style="list-style-type: none"> • Resistance from middle management to new work practices; • failure of senior management to commit resources to new product development; • lack of adequate skills 	<ul style="list-style-type: none"> • CEO committed to upgrading; • effective R&D management; • structured processes for continuous improvement
Outside the firm	<ul style="list-style-type: none"> • Buyers who block suppliers from using own designs • Intellectual property rights • Lack of skills in the economy • Poor IT infrastructure 	<ul style="list-style-type: none"> • Chain governor which promotes and assists upgrading by chain members • Well established and proactive business service providers allied to facilitative government programmes • New legislation forces firms to upgrade • Rising prices for inputs and/or increased competition

Fish value chain

- Analysts conducting the value chain analysis should break down the **key activities** of the company according to the activities entailed in the framework, and assess the potential for **adding value** through the means of **cost advantage** or **differentiation**.
- It is important to determine strategies that **focus** on those **activities** that would enable the industry or a company to attain **sustainable competitive advantage**

Fish value chain

- Value chain analysis is an innovative, sector-based approach to competitiveness focuses on getting **more value from goods and services produced for export**.
- Value chain analysis can help fish export of developing countries to be competitive in the international market.
- Goal of value chain is to offer the customer a level of value that exceeds the cost of the activities, thereby resulting profit margin.

Fish value chain

- Reconfiguration or structural changes of value chain refers to activities such as
 - new production processes,
 - new distribution channels
 - different sales approach.
- Differentiation advantage may be achieved either by changing **individual value chain activities** to increase **uniqueness** in the final product or **reconfiguring the value chain**.

Helpful tools

- SWOT analyses
- Stakeholder analyses
- Porters 5-force models
- Porters diamond models
- Strategic positioning models
- Clusters models
- Interview framework
- Fishery Performance Indicators
 - http://siteresources.worldbank.org/INTARD/825826-1111129171182/23192329/ARD_DP12_BlueCrab_web_final.pdf

Thank you

