Comparison of value chain performance

Value Chain course for Senior Fisheries Officers in the CRFM States

Ogmundur Knutsson
University of Akureyri
Dadi Kristofersson
University of Iceland

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COMPARISON

Value chain analyses

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What makes a resource valuable?

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How do we organize profitable fisheries?

- Fisheries management
  - Property rights based system
- Market system
  - Organization of value chains

Key factor 1
The ability to respond to incentives

- ITQ system changes fishing
  - Firms maximize profits given quota
  - Creates a strong incentive to maximize value
- Keep in mind that quota is the limiting factor in fishing under ITQ's – the resource rents go to the quota owner

Key factor 2
Fish market organization

- Fish is heterogeneous – attributes determine price
- Consumers have preferences for attributes and the value of fish is to a large extent determined by its attributes
- Key market factors
  - Quality awareness
  - Year round demand
  - Standardization (retail chains) …

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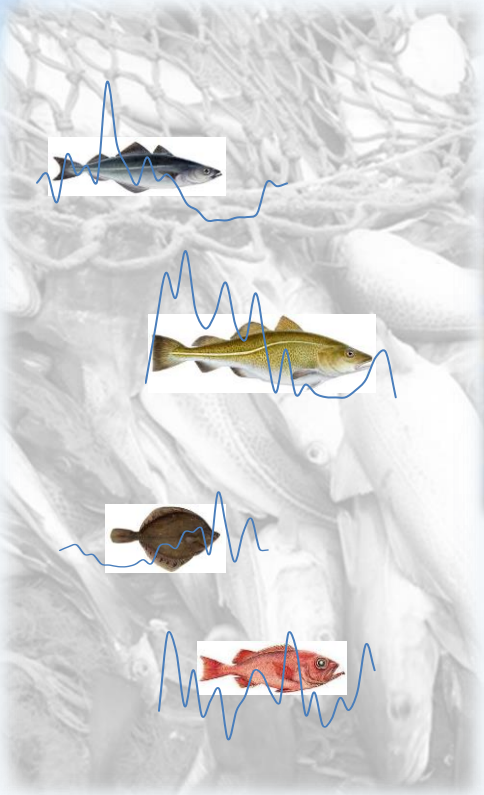
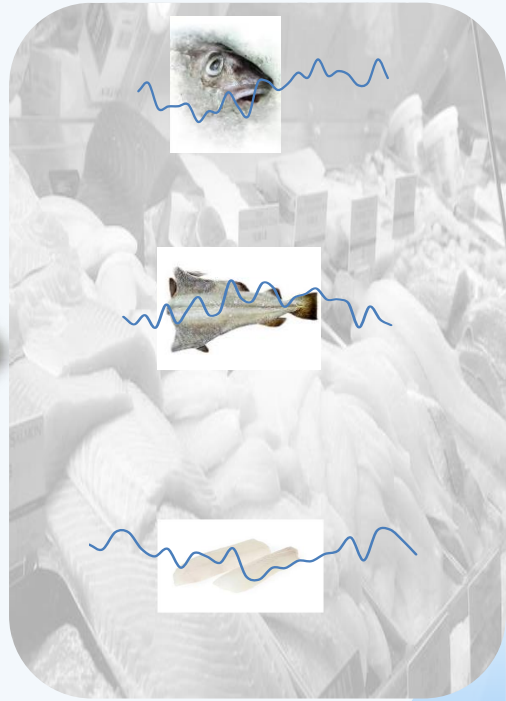
Fitting a square plug in a round hole





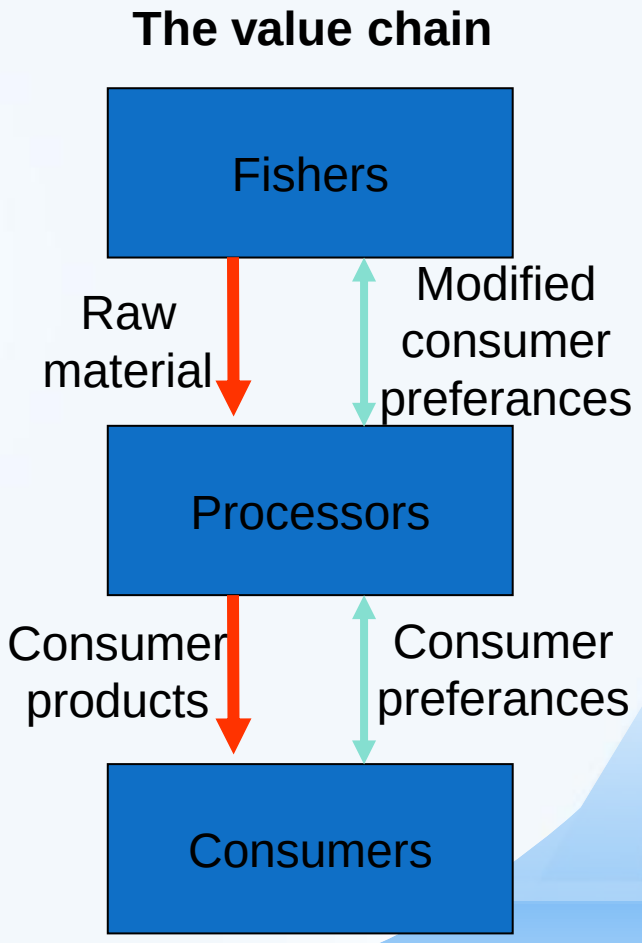
(Heimild: Hagstofa Íslands)

Comparison between Norway and Iceland

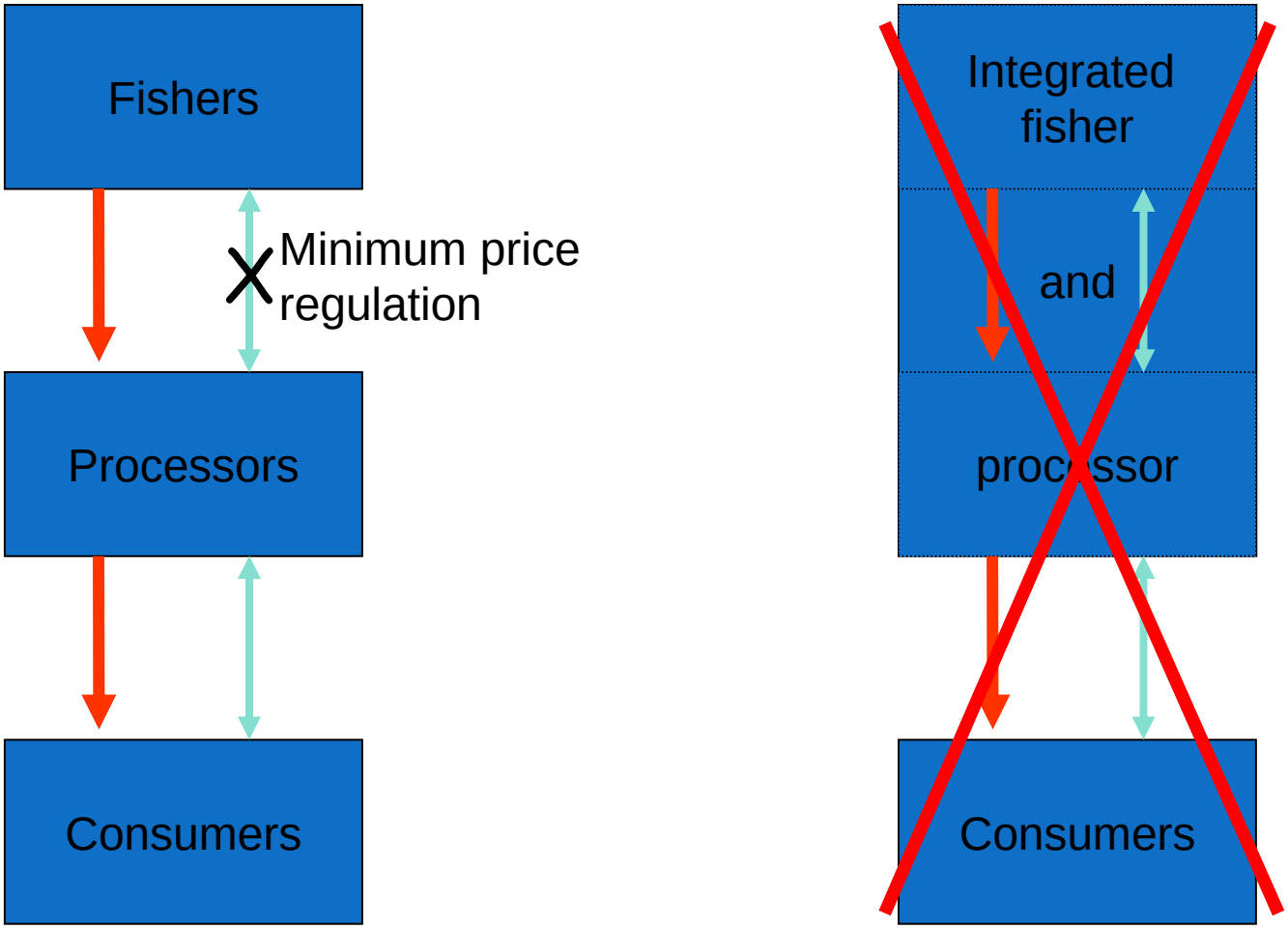
- Similarities
  - Catch composition in demersal fisheries
  - Fisheries management systems
  - Technology
  - Processing
- Dissimilarities
  - Market regulation
  - Economic importance of the fishing industry

Flow in the value chain

- In theory the market pricing mechanism should pass on information up the value chain from consumers, trough processors to primary producers.



Restrictions in Norway



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What difference do we expect?

- Two hypothesis
  - Better quality– should materialize in a higher relative price of Icelandic fish products
  - More profitable product composition – should materialize in different development of product forms
- Overall consequence should be better profitability

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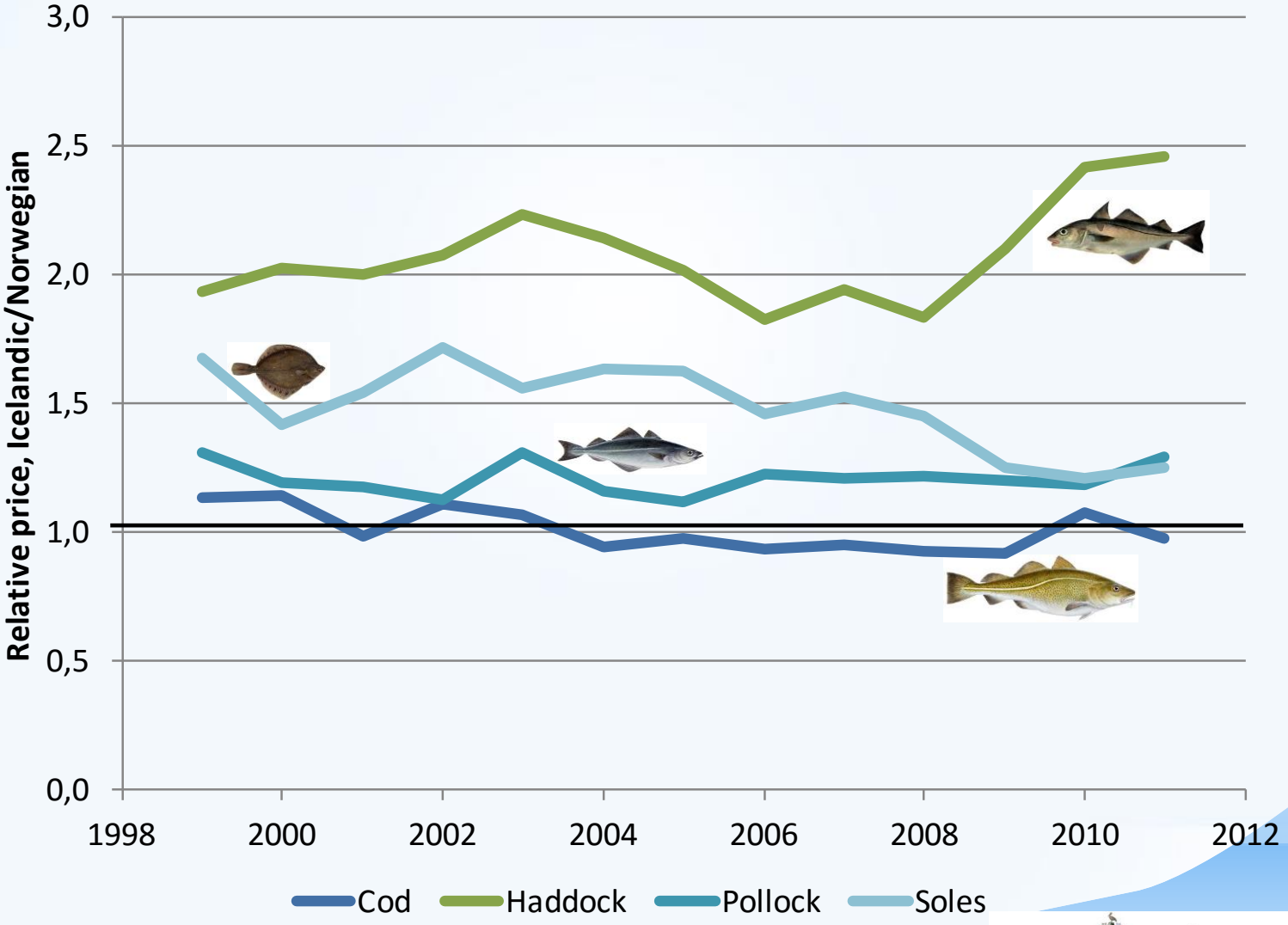
Relative price



(Heimild: Hagstofa Íslands, SSB)

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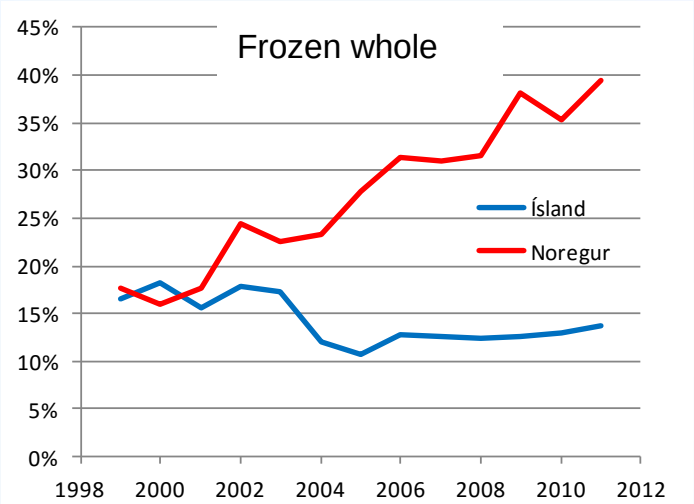
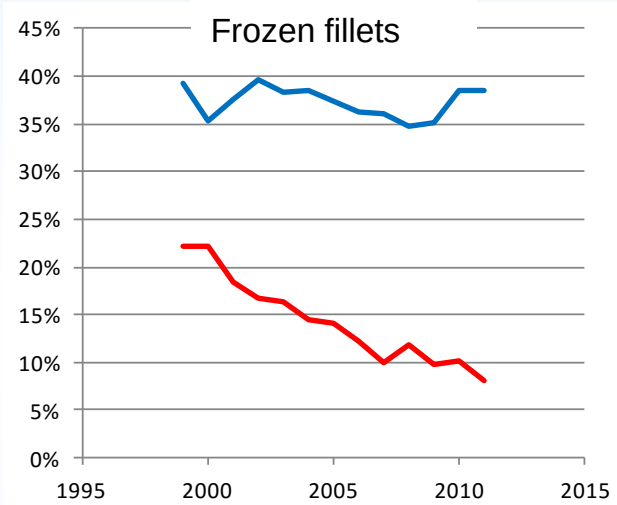
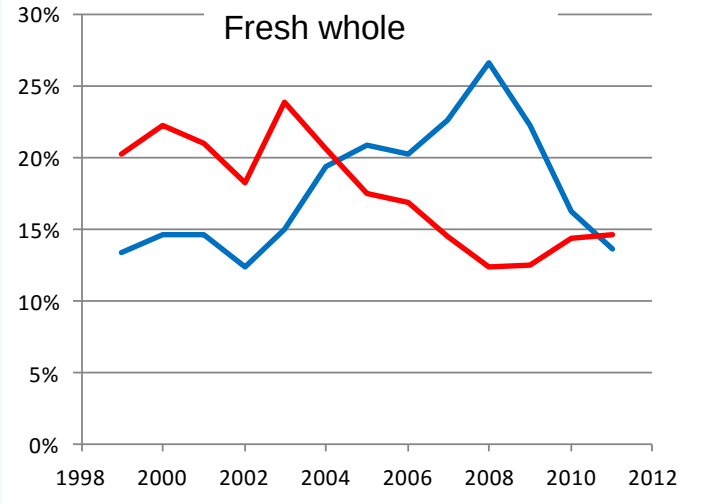
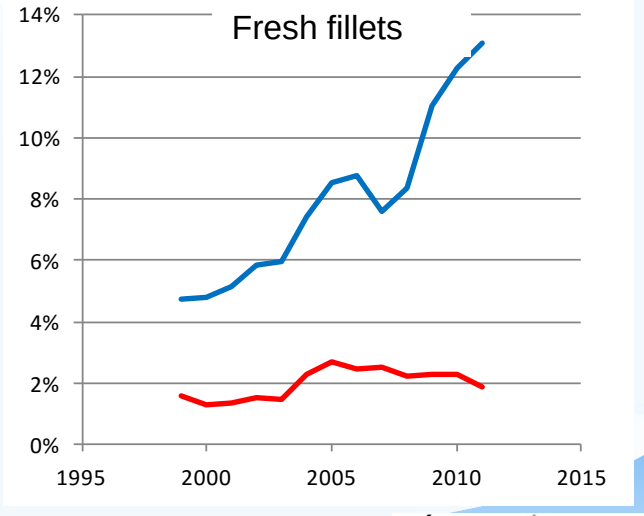
Export composition









(Heimild: Hagstofa Íslands, Eksportutvalget for fisk)

Cod in Iceland and IN Norway 2011

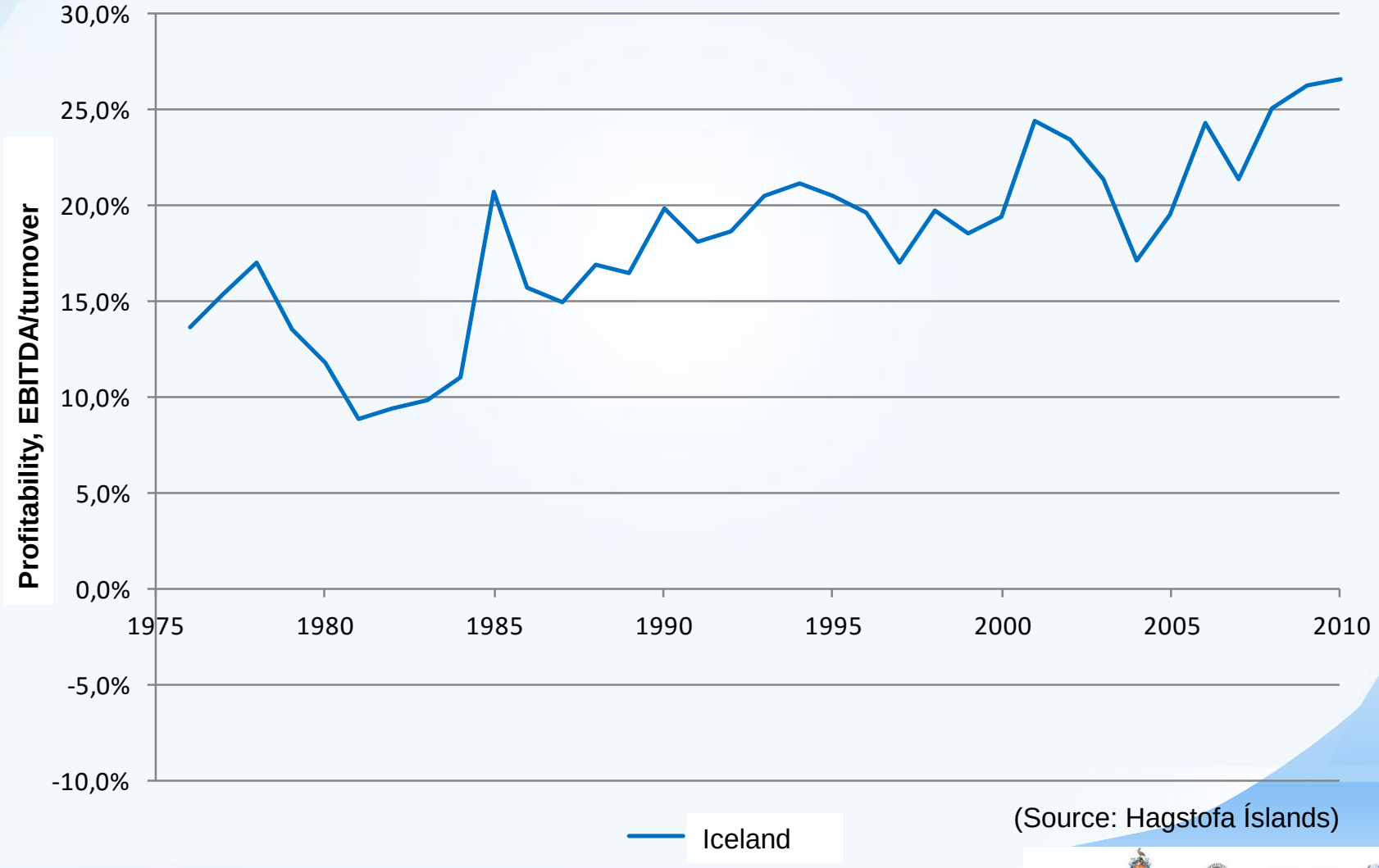
Export	Iceland	Norway
Frozen H/G	7%	40%
Fresh whole	13%	15%
Frozen fillest	39%	8%
Fresh fillets	**13%**	**2%**
Exprt price €/kg	2,3	1,7
Utilization	57%	41%

Value added

Processing	1992-1999	2000-2005	2006-2010
Fresh whole	67	45	34
Fresh fillets	64	94	107
Frozen on land	43	40	26
Frozen at sea	38	47	31
Salted	97	83	80

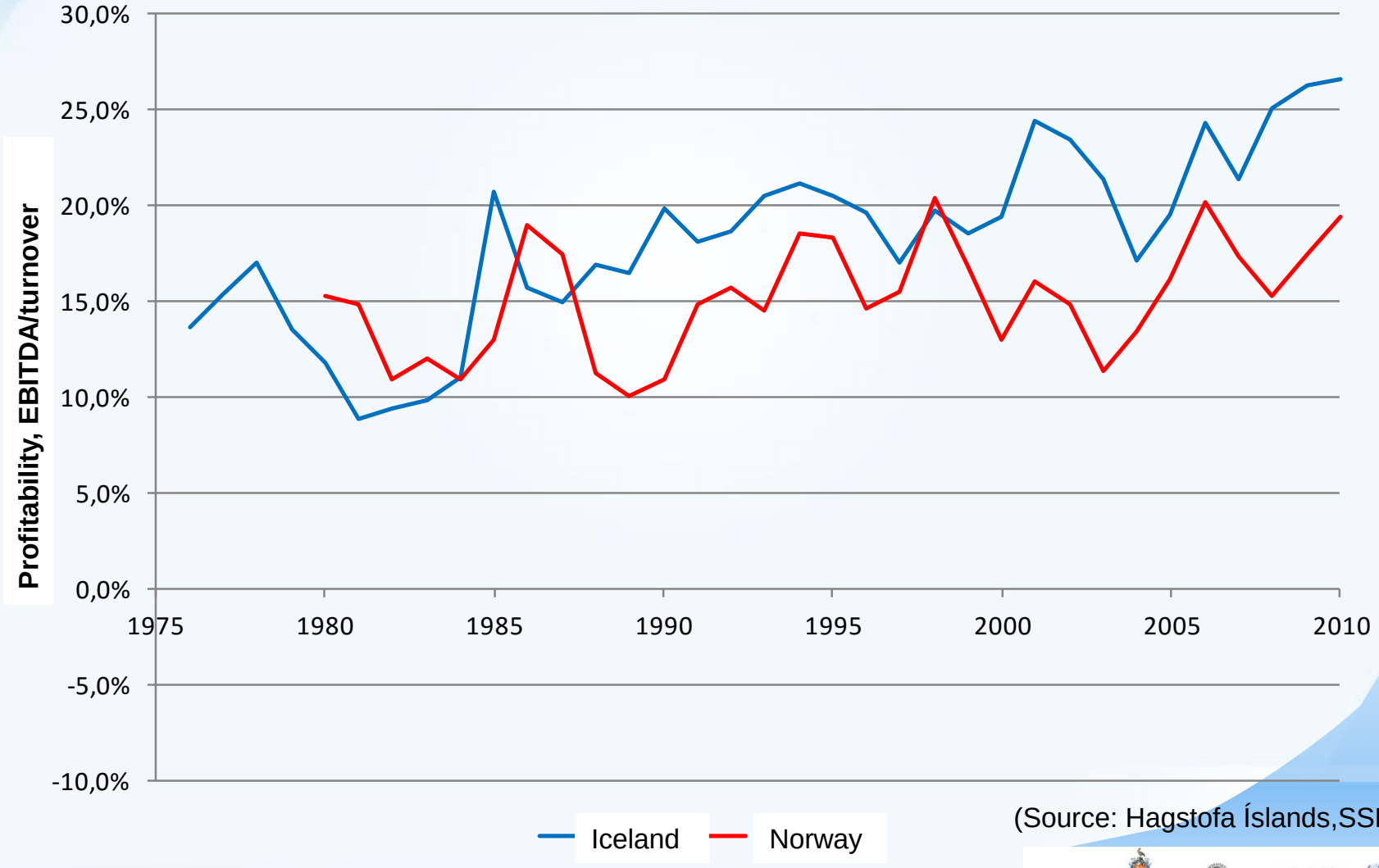
Value relative to price of raw material
(Source: Ögmundur Knútsson, Daði Már Kristófersson og Helgi Gestsson 2012)

Profitability in demersal fishing



(Source: Hagstofa Íslands)

Profitability in demersal fishing



(Source: Hagstofa Íslands,SSB)

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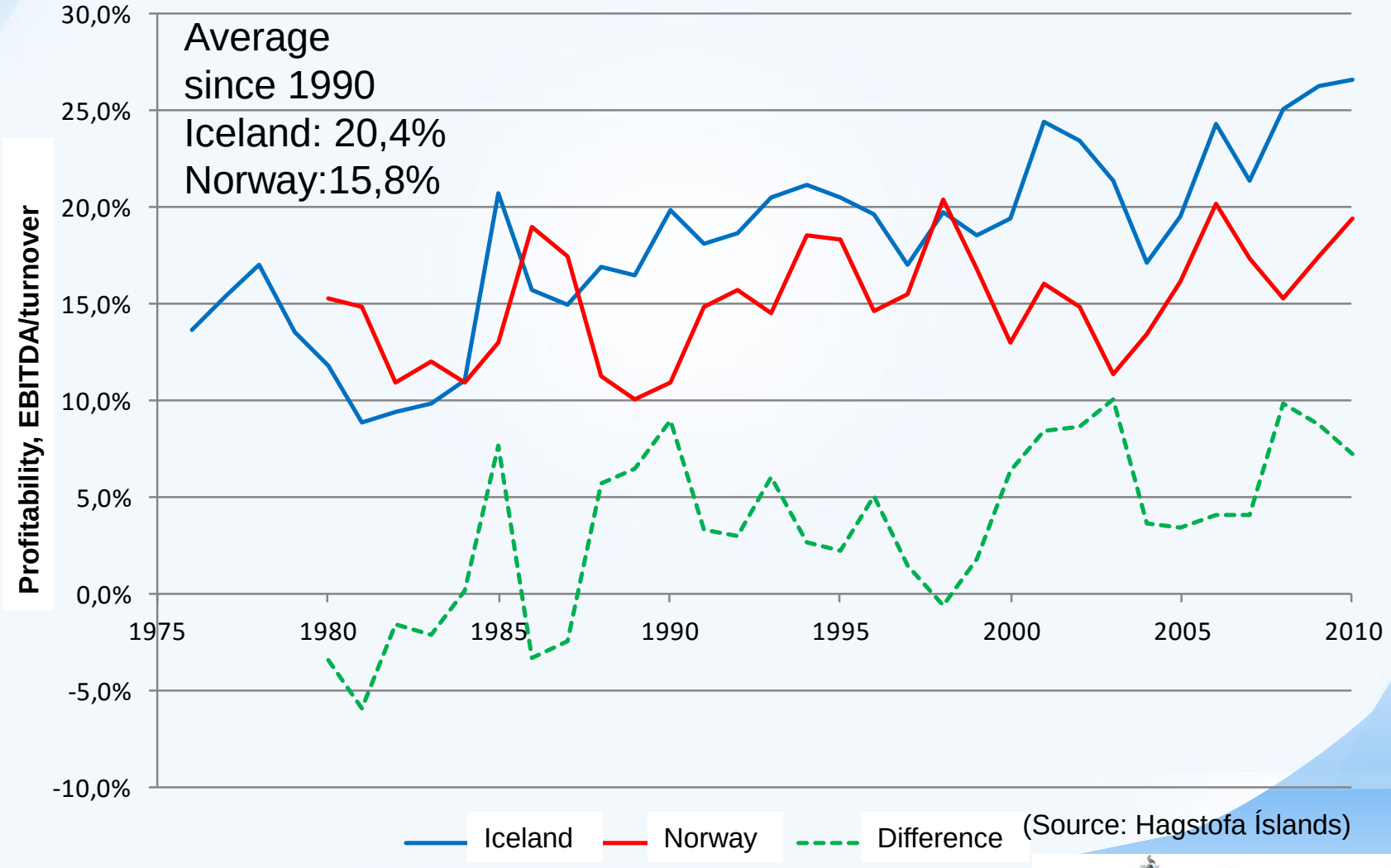
Profitability in demersal fishing



(Source: Hagstofa Íslands)

Difference between Iceland and Norway

Iceland

- Vertical integrated companies
- Fish auction markets
- Transferability in pricing of fish and marketing information
- Strong marketing connection
- Marketing information used to manage fishing and processing

Norway

- Vertical integration banned
- Fish auction markets with guarantied price to fisherman
- Governmental body decides on fish price, no marketing information
- No or limited marketing connection
- Limited use of marketing information to manage fishing or processing

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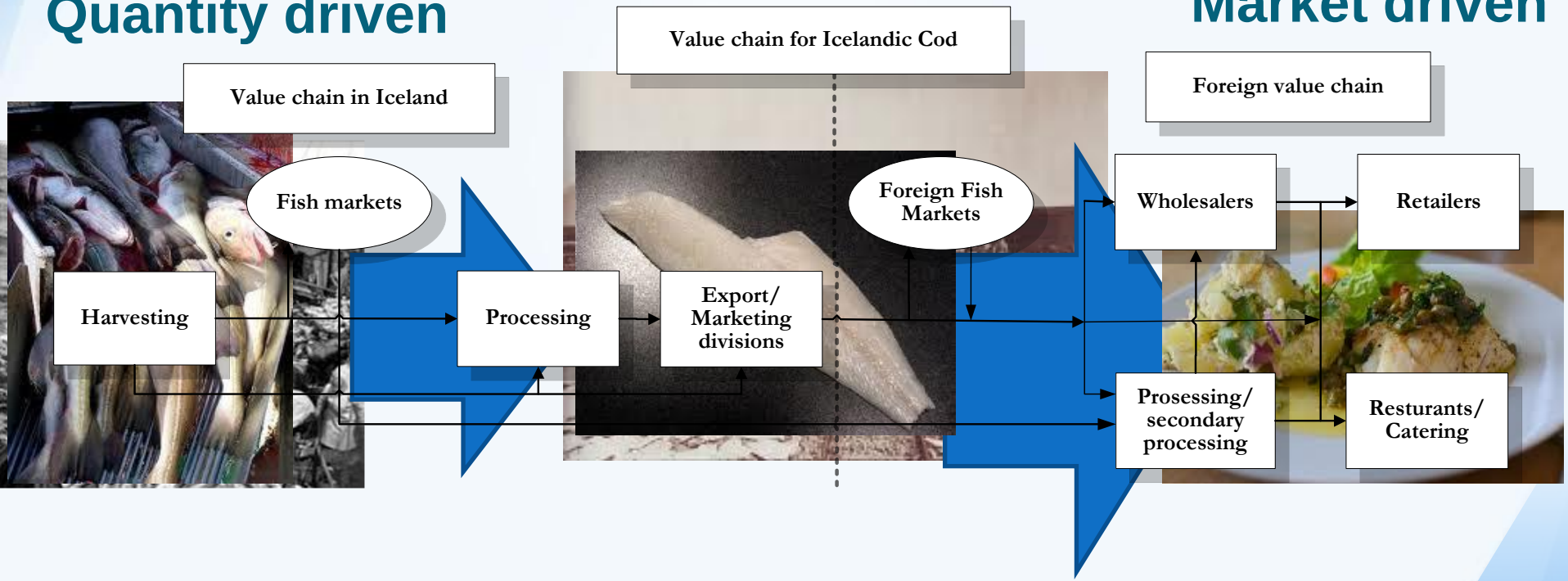
Transformed value chains

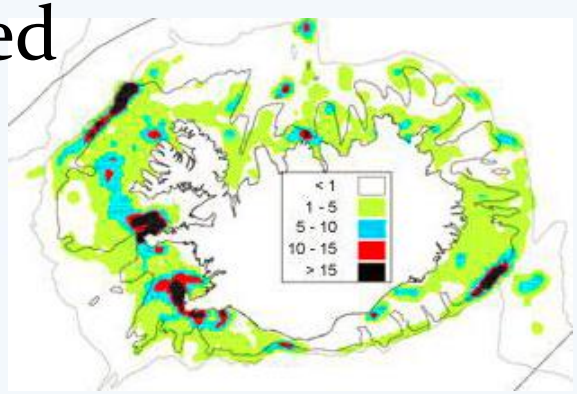
Quantity driven

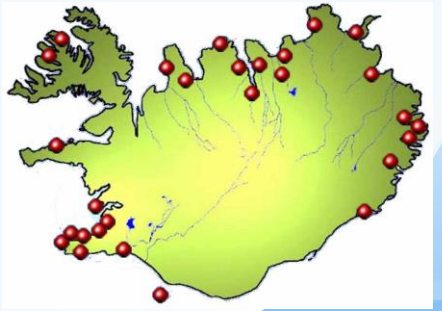
Market driven



Changed emphasis

- 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





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Conclusion – Iceland/Norway

- Market orientation depends on information flow in value chains
- Restricting information flows prevents development of certain value chains, e.g. those that depend on synchronization of fishing and processing
- Effect evident when compared to Norway

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NEW ZEALAND

New Zealand

- World's 6th largest EEZ and 10th largest coastline
- NZ $1.53 billion of seafood exported in 2011; 1.2% of total global fisheries trade (MED, 2012)
- Industry captures very little final market value – bulk commodity driven (MED, 2011)
- Many seafood businesses struggle to create, deliver and capture value. Many struggle to survive
- Wild capture - no major growth opportunities. Aquaculture - limited opportunities (MPI, 2013)

Glen Simmons, SME growth and entrepreneurial abilities: A Penrosian approach to the New Zealand seafood industry 2014

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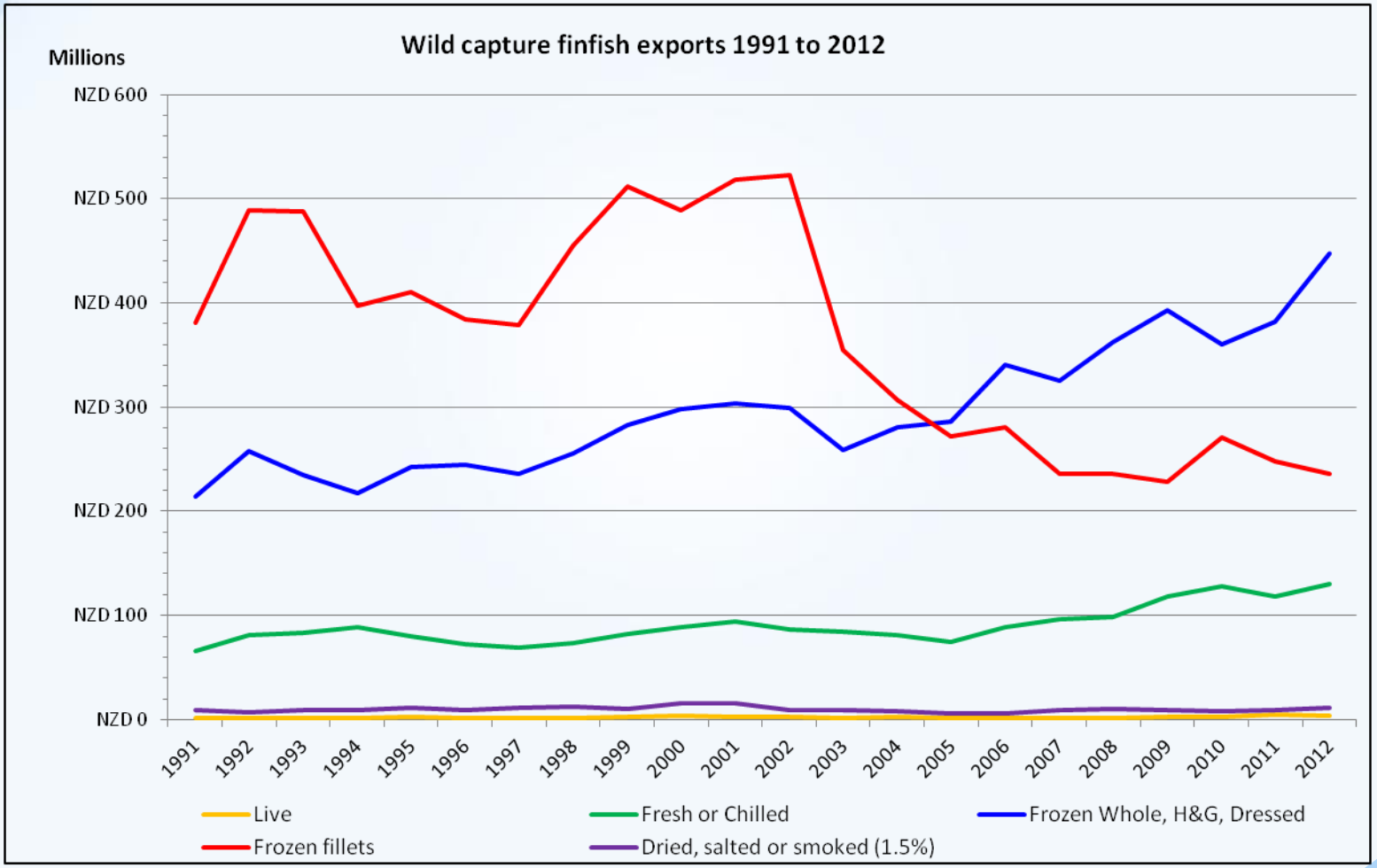
Finfish exports 1991 - 2012



Average nominal export prices for hoki declined from the peak in 2000 of NZ $4.50 per kg to below NZ $3.30 per kg in 2010.

Glen Simmons, SME growth and entrepreneurial abilities: A Penrosian approach to the New Zealand seafood industry 2014

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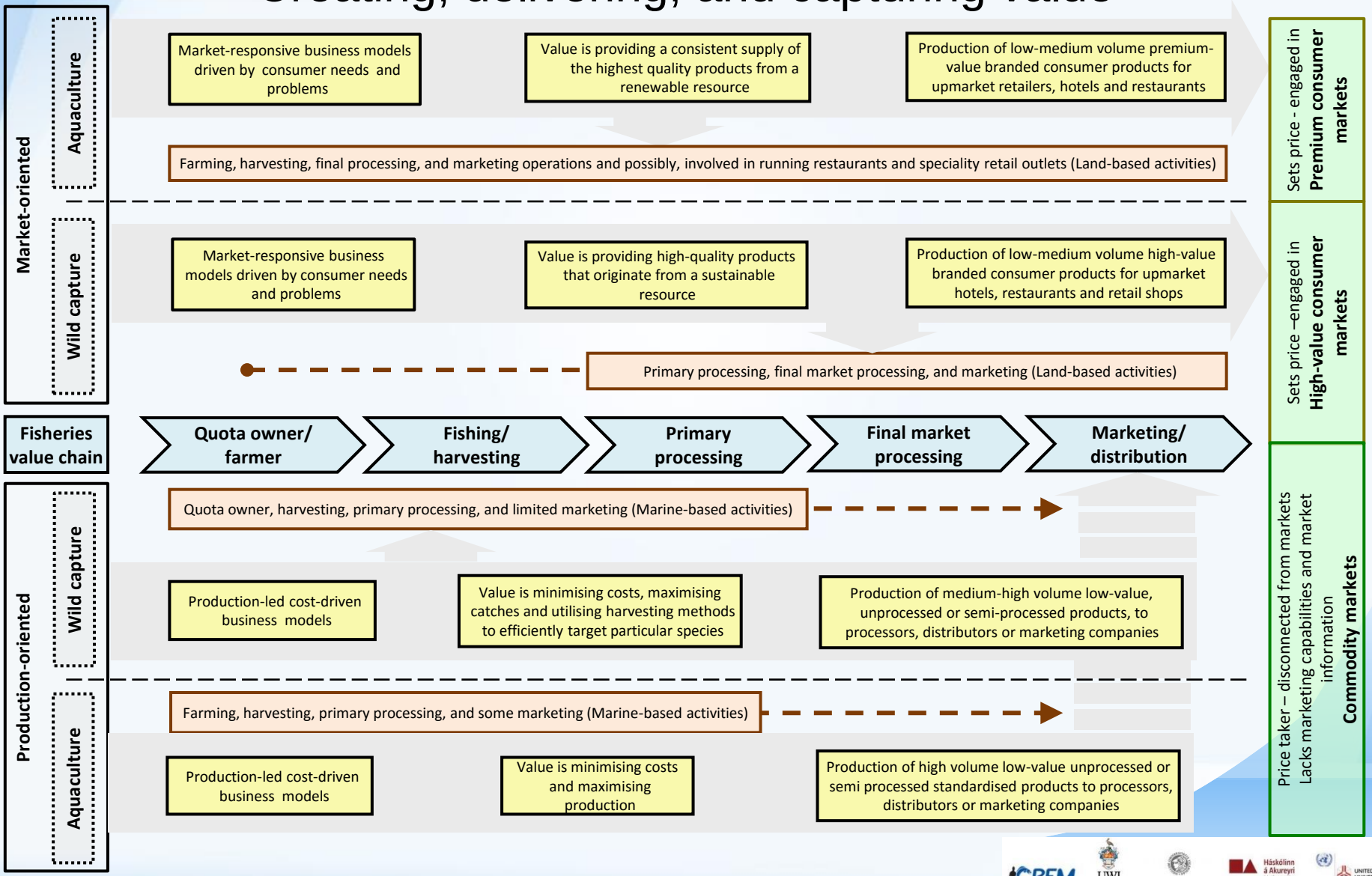
Creating, delivering, and capturing value



Creating, delivering, and capturing value

Production-oriented

Organisation structure
Simple or hierarchal bureaucratic structures designed for efficiency rather than flexibility. Top down decision making.

Culture
Slow-to-change commodity cultures. Values – cost reductions. Norms – undertaking tasks routinely and efficiently. Risk avoiding.

Innovation
Production-focused ad-hoc problem solving. Used traditional technology and did not invest in R&D. Relied on own knowledge.

Market-oriented

Organisation structure
Flat structures, facilitated learning and agile collaborative problem solving that fostered a consultative approach to decision making.

Culture
Entrepreneurial cultures. Values – diversity, independence and innovation. Norms – showing initiative and acting entrepreneurially.

Innovation
Innovatively solved customer problems. Used advanced technology. Undertook R&D and collaborated with universities and research institutions

Glen Simmons, SME growth and entrepreneurial abilities: A Penrosian approach to the New Zealand seafood industry 2014

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Bangladesh

Thailand

Bangladesh/Thailand

- Kelling, I.Knowledge is Power? A marketing orientation approach to the global value chain analysis of aquaculture: Two case linking Southeast Asia and the EU. PhD thesis Stirling 2012.
- Aquaculture products form Bangladesh and Thailand
  - Export to the European markets

Bangladesh/Thailand

- The analysis shows that restricted access to information is limitation to creating value.
- Supplier abilities to respond to market information is be compromised by
  - actions of value chain agents themselves
  - the institutional framework within which they are working in.
- Small producers
- Lack of infrastructure

Kelling, I. Knowledge is Power? A marketing orientation approach to the global value chain analysis of aquaculture: Two case linking Southeast Asia and the EU. PhD thesis Stirling 2012.

Bangladesh/Thailand

- In attempting to meet consumer demands, lead firms in Asia need to
  - invest in increased value chain coordination
  - improve supplier capabilities to respond to market information
  - This occurs to a limited extent by processors within Thailand
  - Bangladesh this dose not at all occur due
    - to a lack of private sector involvement in the value chain to bring about improvements,
    - weak institutional framework.

Kelling, I. Knowledge is Power? A marketing orientation approach to the global value chain analysis of aquaculture: Two case linking Southeast Asia and the EU. PhD thesis Stirling 2012.

Infrastructure Bangladesh/Thailand

- Institutional framework plays a critical role in enabling access and the dissemination of information to value chain agents
- The most important aspects of the regulatory framework that affect chain responses were identified
  - the regulatory scope governing the quality of inputs and outputs
  - as well as documentation and testing.
- Standardized and strict regulation, in line with strengthened governance in resource allocation and environmental integrity, stringent food safety and quality standards, can lead to value creation.
- Enforcing existing laws is also critical but may be compromised due to the number of Ministries involved in aspects of aquaculture in some countries (Table A3.1), but also a lack of political will and unintended consequences of government incentives.

Kelling, I. Knowledge is Power? A marketing orientation approach to the global value chain analysis of aquaculture: Two case linking Southeast Asia and the EU. PhD thesis Stirling 2012.

Bangladesh/Thailand

- Access to market information is one key to unlocking the potential of developing countries to create greater value in seafood supply chains,
- Important investments are required
  - strengthening domestic regulatory frameworks,
  - the sharing of market information between buyers and suppliers
    - with the aid of NGOs, intergovernmental organizations, trade associations and market information providers such as INFOFISH51
  - encouraging investment by the industry in their own value chains.

Kelling, I. Knowledge is Power? A marketing orientation approach to the global value chain analysis of aquaculture: Two case linking Southeast Asia and the EU. PhD thesis Stirling 2012.

Bangladesh/Thailand

- Greater attention needs to be given to the role of the institutional framework, internal governance and relationships in value chains when examining ways for developing country suppliers to create greater value.
- Only when knowledge is shared and suppliers gain power, will the market orientation of seafood value chains be improved, if not optimized.

Kelling, I. Knowledge is Power? A marketing orientation approach to the global value chain analysis of aquaculture: Two case linking Southeast Asia and the EU. PhD thesis Stirling 2012.

Governance and the institutional framework

a) Internal governance		
	Bangladesh	Thailand
Main internal drivers in Asian value chains	Processors	Processors
Internal drivers in overall value chain	Importers	Retailers, Foodservice, Brand manufacturers, Importers
Degrees of driving	Low	High
Main kinds of driving mechanisms	Food safety standards	Product specifications, certification, location of value addition, innovation
b) Main coordination mechanisms		
Farmers-Processors	Market Captive	Captive Market
Processors-Importers	Captive	Captive Modular
EU		
Importers-Wholesalers-Retailers-Foodservice	Market	Relational, modular, captive
c) Overall governance		
Key institutional framework agents shaping overall governance	Weak domestic regulatory framework, low investment by industry	Involvement of the industry in Thailand, strong domestic regulatory framework, certification
Degree of influence of institutional agents in shaping overall governance	Low	High

Source: Jespersen et al. (2012)

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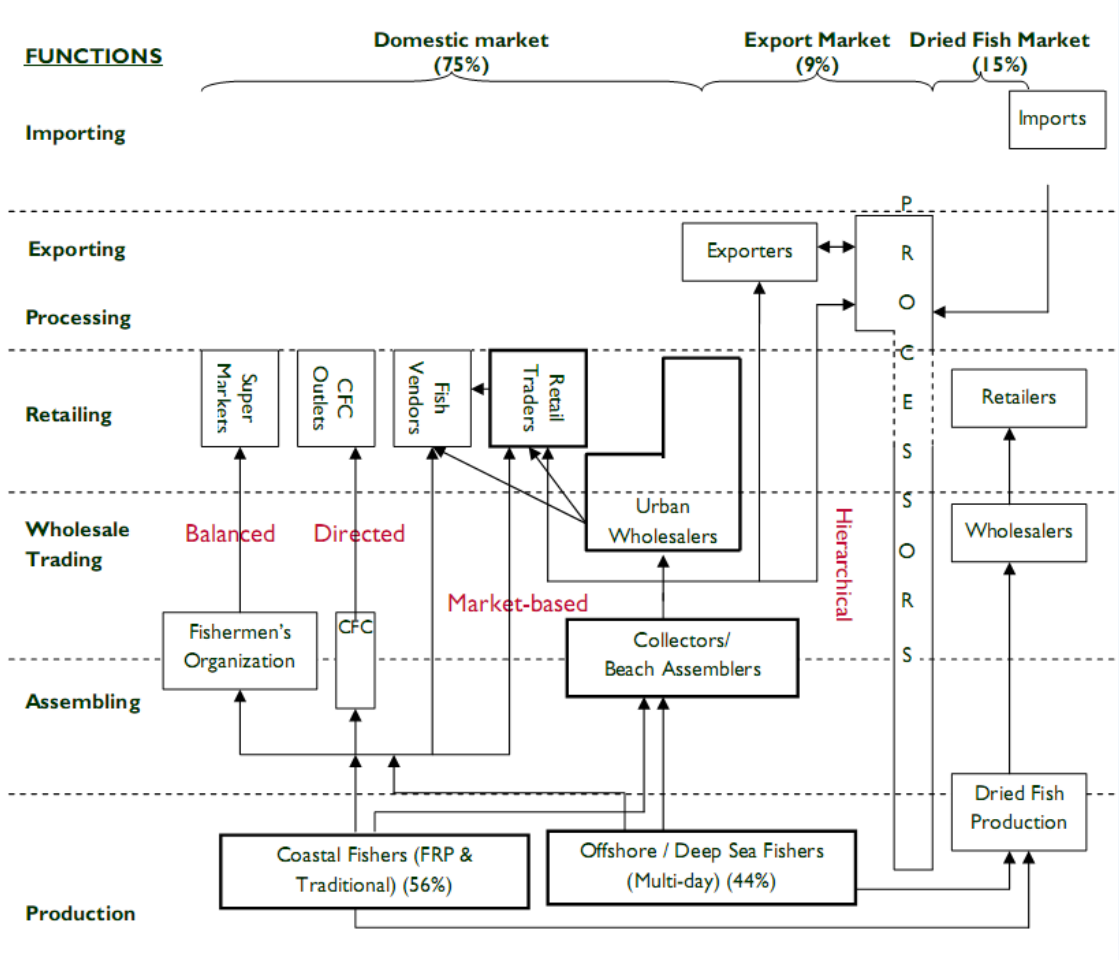
Sri Lanka

A Sri Lankan Fisheries Value Chain Map



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

Price to the Fisherman

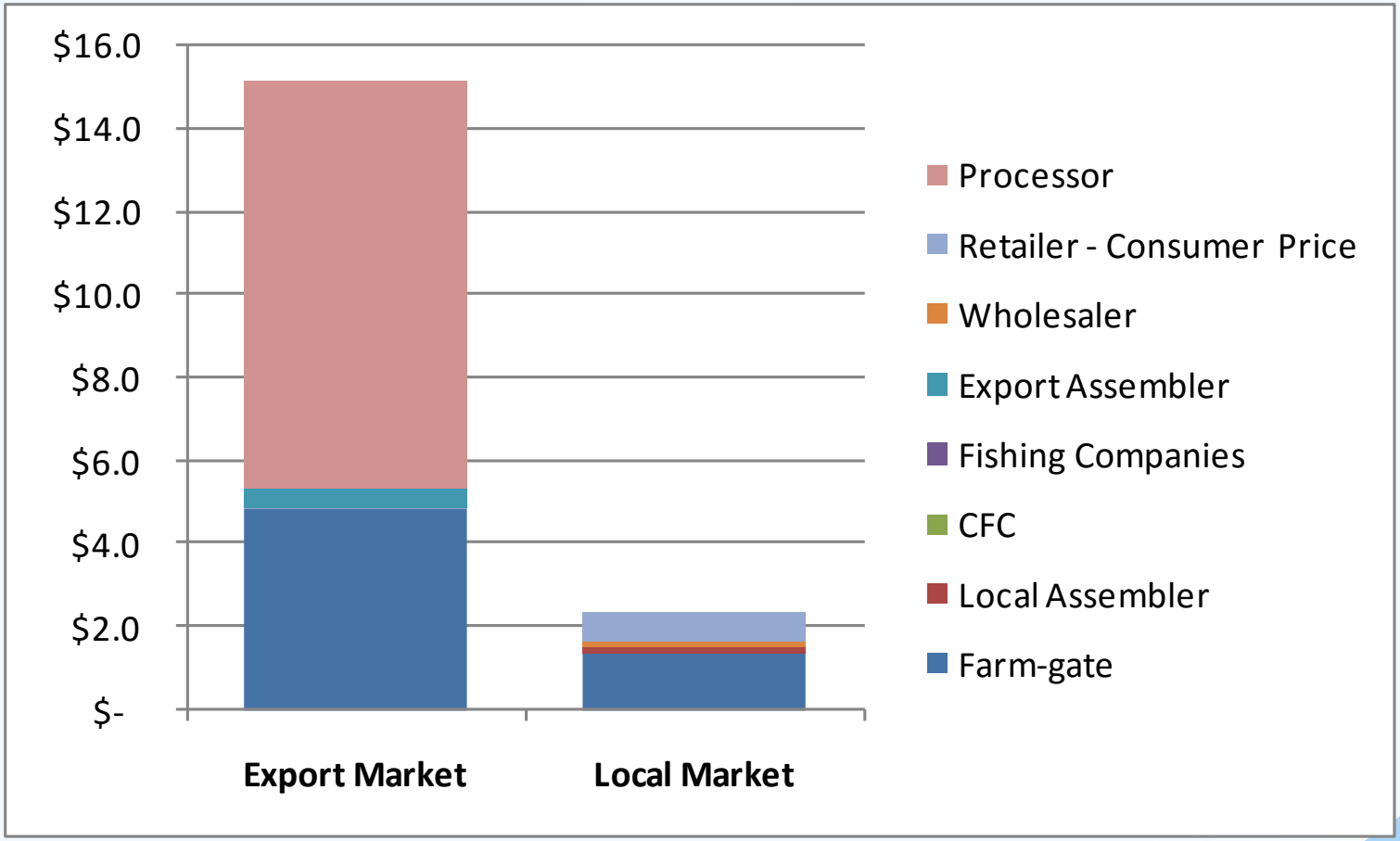
Domestic markets

- **Grade 3** US$ 1,8
- **Grade 4** less than US$ 1

Export

- **Grade 1** US$ 7,5
- **Grade 2** US$ 4,6

Value Adding in the Value Chain



Characteristics of the Value Chain

Domestic	Export
Lack of quality in of the Tuna for domestic markets	Good quality
Lack collaboration in the value chain	Collective fishing and collaboration in the value chain
Information flow is controlled (stopped) by the middlemen	Information is direct
Lack of knowledge and learning	Good knowledge about quality and handling of Tuna
Power struggle between actors and conflict of interest	Power balance and contracts
To many actors (middleman)	In most cases fewer middlemen
Lack of trust	Trust and contracts
No governance of the value chain	Processors and exporters govern the value chain
No vertical integrations	In some cases vertical integrated companies

Governance

	Iceland	Sri Lanka Export	Sri Lanka domestic consumption
Governance	•Mixture •Market-based •Direct •Hierarchical •Relational	•Direct •Balanced •Relational •Hierarchical?	•Market-based
Power	•Quota holders •Vertical integrated companies •Marketing connection	•Processors	•Market •Lack of power by the boat owners
Trust	•High	•Moderate	•Low
Leaders	*•Vertical integrated companies*	*•Processors*	*•No clear leader*

Relationship

	Iceland	Sri Lanka Export	Sri Lanka domestic consumption
Collaboration between actors	•High	•Moderated/High	•Low
Flow of information and knowledge	•Direct information •High knowledge	•High to own boats •Low to others	•Very limited •Lack of knowledge
Key actors	•Large Vertical integrated companies	•Producers	•Small actors •No key actors
Driving forces within the industry	•Market driven •Innovation	•Market driven?	•Harvesting driven

Value Chain
Summary of Iceland/Sri Lanka

- Difference in fisheries management systems
  - Quota system in Iceland and ITQ has pushed for increase of value creation in the value chain
  - Sri Lanka has open access no quota
- Similarity in the Icelandic value chain and the export part of Sri Lanka value chain
- Relationship
  - Direct connection/vertical relationship creates value in Icelandic value chain
  - Too many middle actors in Sri Lanka domestic value can destroy value

Value Chain
Summary of Iceland/Sri Lanka

- Governance
  - Leading company is important in the value chain to maximising value creation
  - Leading companies is the main actors in the Icelandic value chain and the export chain in Sri Lanka
  - No single leading actor in the domestic value chain in Sri Lanka
- Trust and transparency is important and seems to be lacking in the domestic part of Sri Lanka value chain

Recommendations

- Domestic value chain in Sri Lanka needs to improve its efficiency/effectiveness
  - Increase cooperation
    - Collective fishing
  - Improve information flow
    - Actors (middleman) keeps information for them selves
  - Improve knowledge of fish handling and quality
    - Post harvest losses up to 25% of the catch
  - Improve boats, facilities landing sites and transport
  - Increase transparency in the value chain
    - Build up trust
  - Limit the governmental interference in the fish industry
    - Ceylon Fisheries Corporation
    - Subsidise/price guarantee etc.

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Food and Agriculture Organization of the United Nations

Value chain dynamics and the small-scale sector

Policy recommendations for small-scale fisheries and aquaculture trade

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AQUACULTURE
TECHNICAL
PAPER
http://www.fao.org/3/a-i3630e.pdf

CRFM UWI UNIVERSITY OF ICELAND Háskólinn á Akureyri University of Akureyri UNITED NATIONS UNIVERSITY Fisheries Training Programme

Value chain dynamics and the small scale sector

- 54,8 million people engaged in capture fishing and aquaculture
- Three time more people involved in upstream and downstream of the value chain
- Women are about half of the global workforce
- Small scale sector fisheries employs 90 percent's of the worlds
- The sector predominates in developing countries

Value chain dynamics and the small scale sector

- Industrial sector employ 200 people for every 1000 tones of fish
- The small scale sector employs 2400 for the same amount
- Industrial fleet catches 1-2 tones of fish per tone fuel
- Small scale sector 4 – 8 tones per tones fuel

Report of the catch of the small scale sector is often very limited or none exciting.

Value chain dynamics and the small scale sector

- **Policy recommendation 1:** Increased governmental, NGO and private-sector support is a prerequisite for the small-scale fisheries and aquaculture sector to achieve more equitable distribution of benefits.
  - Technical training
  - Infrastructure needs
  - Finance
  - Research and development

Value chain dynamics and the small scale sector

- **Policy recommendation 2:** Organizational models and agreements should be introduced and supported to help the small-scale sector increase its **price negotiation power and share resources**.
  - In order to achieve this, support from governments, protection by legislation and incentivizing (or even mandating) participation in organizational models such as selling desks, private/public partnerships and cooperatives should be considered.
    - Auction markets
    - Single desk
    - Cooperative and single desk

Value chain dynamics and the small scale sector

- **Policy recommendation 3:** Fishers, fish farmers and small-scale traders should be assisted in adopting more **consistent pricing methods** and **documenting expenses** and **net profit**. In addition, prices need to be made more **transparent** and accessible to all chain agent
  - Auction markets
  - Adopting standard pricing methods locally or even regionally
  - Pricing methods could be by weight, bags, hands, or whatever measurement is most accessible to local stakeholders.

Value chain dynamics and the small scale sector

- **Policy recommendation 4:** Provide a **policy** and **financial** environment conducive to establishing new small-scale fish farms and adopting appropriate and sustainable farming methods.
  - Micro loans
  - Innovation funds
  - Improvements fund

Value chain dynamics and the small scale sector

- **Policy recommendation 5:** There is a need for an increased focus on the promotion and marketing of fish and fishery products, especially in countries that currently have low domestic consumption rates.
  - Promotion of domestic markets should be based on estimates for domestic demand of fish and fish products. Where no reliable estimates exist, market surveys are an important first step for this recommendation

Value chain dynamics and the small scale sector

- **Policy recommendation 6:** New markets for the small-scale sector should be researched and developed. In particular, domestic markets in developing countries need to be explored. Factors influencing exports and the cost of the domestic market need to be researched and taken into ac
  - For example, in Honduras, wholesale prices for shrimp were 20 percent higher than export prices to the European Union
  - This was also found with tilapia fillets, as the domestic market gave a price that was 11 percent higher than the United States import price.
  - Domestic buyers in the country are dominated by restaurants and hotels, which are willing to pay prices similar to the international market prices.

Value chain dynamics and the small scale sector

- **Policy recommendation 7:**
  - Improved national and international management regimes should be developed and implemented to protect marine, river and lake ecosystems.
  - Management should be aimed at achieving optimal sustainable yields from fish stocks and identifying areas suitable for sustainable aquaculture.
  - Good practices for fisheries co-management should be developed, implemented, evaluated and documented by national governments in order to sustain the small-scale value chain in the long term.

Value chain dynamics and the small scale sector

- **Policy recommendation 8:** Local food security should be a major consideration in developing markets for fish and fish products as well as management plans and regulatory frameworks for fish stocks and aquaculture

Value chain dynamics and the small scale sector

Areas for further research

- the role of trade in local food security and sovereignty
- the viability of domestic markets
- possibilities for innovative value chains
- the costs and benefits of certification schemes and other marketing tools
- organizational models for organizing the value chain with an emphasis on the first-hand market
- institutional models to support and monitor sustainable fisheries and aquaculture production
- methods of good governance in national and international management of fish stocks and areas for aquaculture, including methods and models for co-management

Value chain dynamics and the small scale sector

Areas for further research

- A final recommendation for future research includes a strategic comparison of value chains in developed and developing countries. This should also be supplemented with analyses of good practices for transfer of knowledge both to national institutions as well as local organizations and communities

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Thank You!