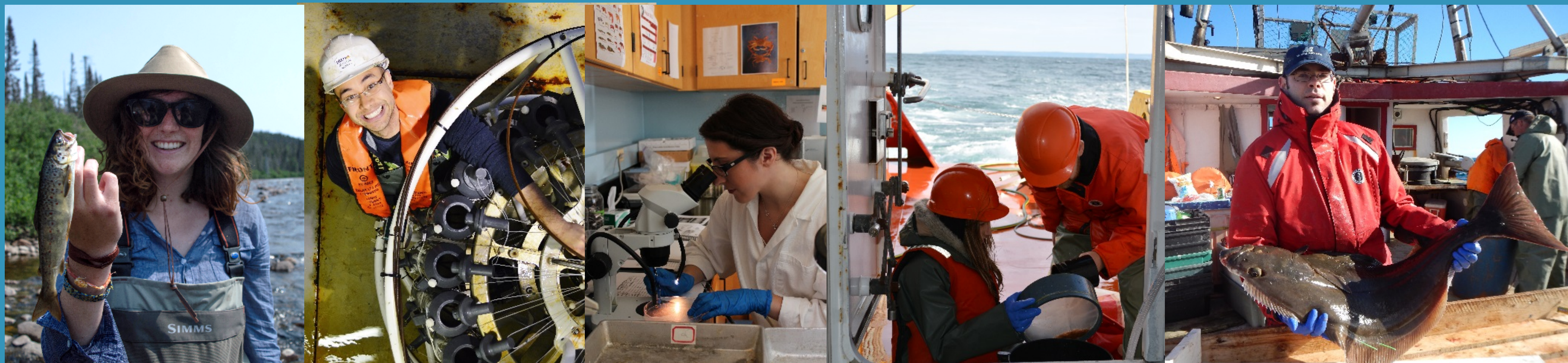


Future of Seafood Industry in Newfoundland & Labrador

It's Not all Doom & Gloom

Carey Bonnell
Head – School of Fisheries
Fisheries and Marine Institute of
Memorial University

MARINE INSTITUTE

MEMORIAL UNIVERSITY

Outline for Today

- Seafood Sector Profile & Trends
- Global Trends Affecting NL Seafood Sector
- Role of MI in Advancing Seafood Value Chain
- Northern Peninsula Situation
- Outlook

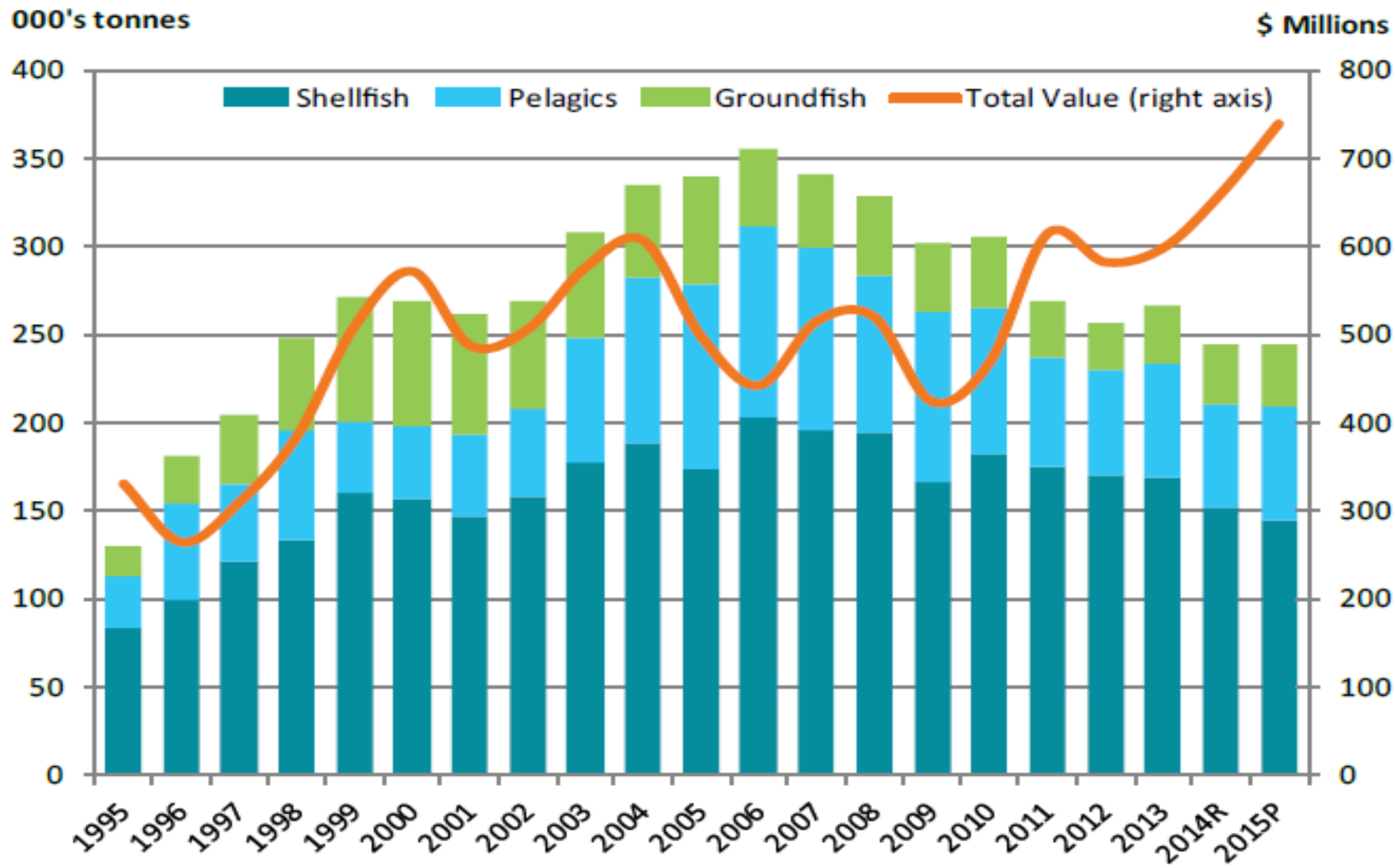
SEAFOOD SECTOR PROFILE & TRENDS

Industry Snapshot

	1989	2014R	2015P
Value of Production ($ millions)	650	953	1,266
Volume of Landings (tonnes)	506,000	244,787	240,785
Value of Landings ($ millions)	242	661	738
Harvesters (# registered)	16,000	9,453	9,334
Licensed Plants (primary)	214	73	74
Plant Workers (processing)	21,000	7,881	7,721

R = Revised, P = Preliminary
Source: Professional Fish Harvesters Certification Board; DFO; DFA

NL Fish Landings by Species Group

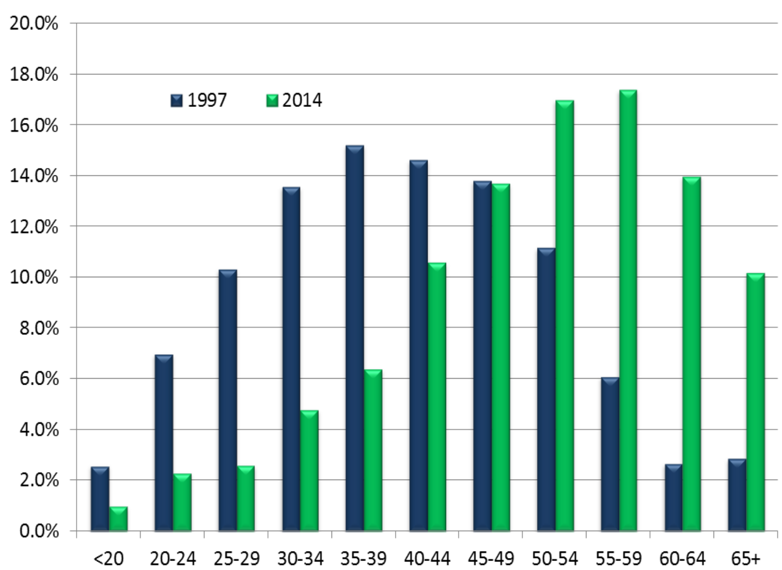


R = Revised; P = Preliminary
Source: DFO; DFA

*Shellfish represents approximately **82%** of industry landed value*

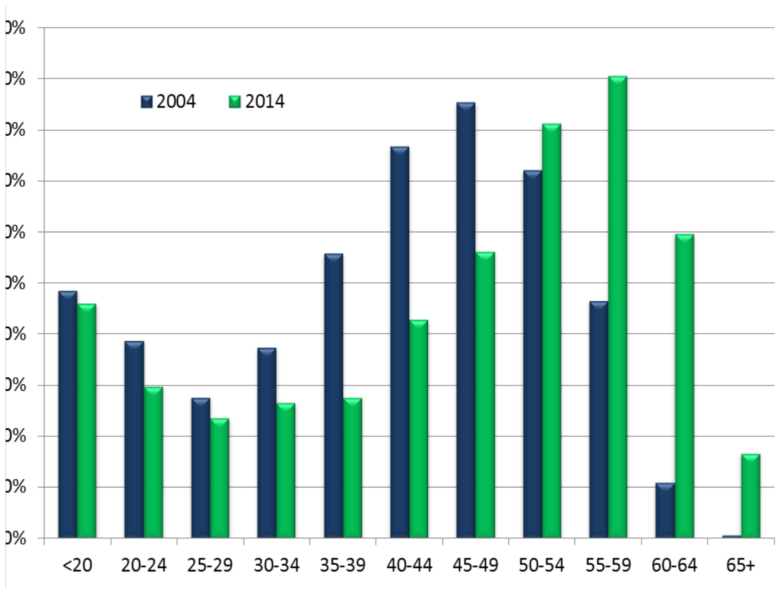
Age Profile of Industry

Fish Harvesters



Source: PFHCB; DFA

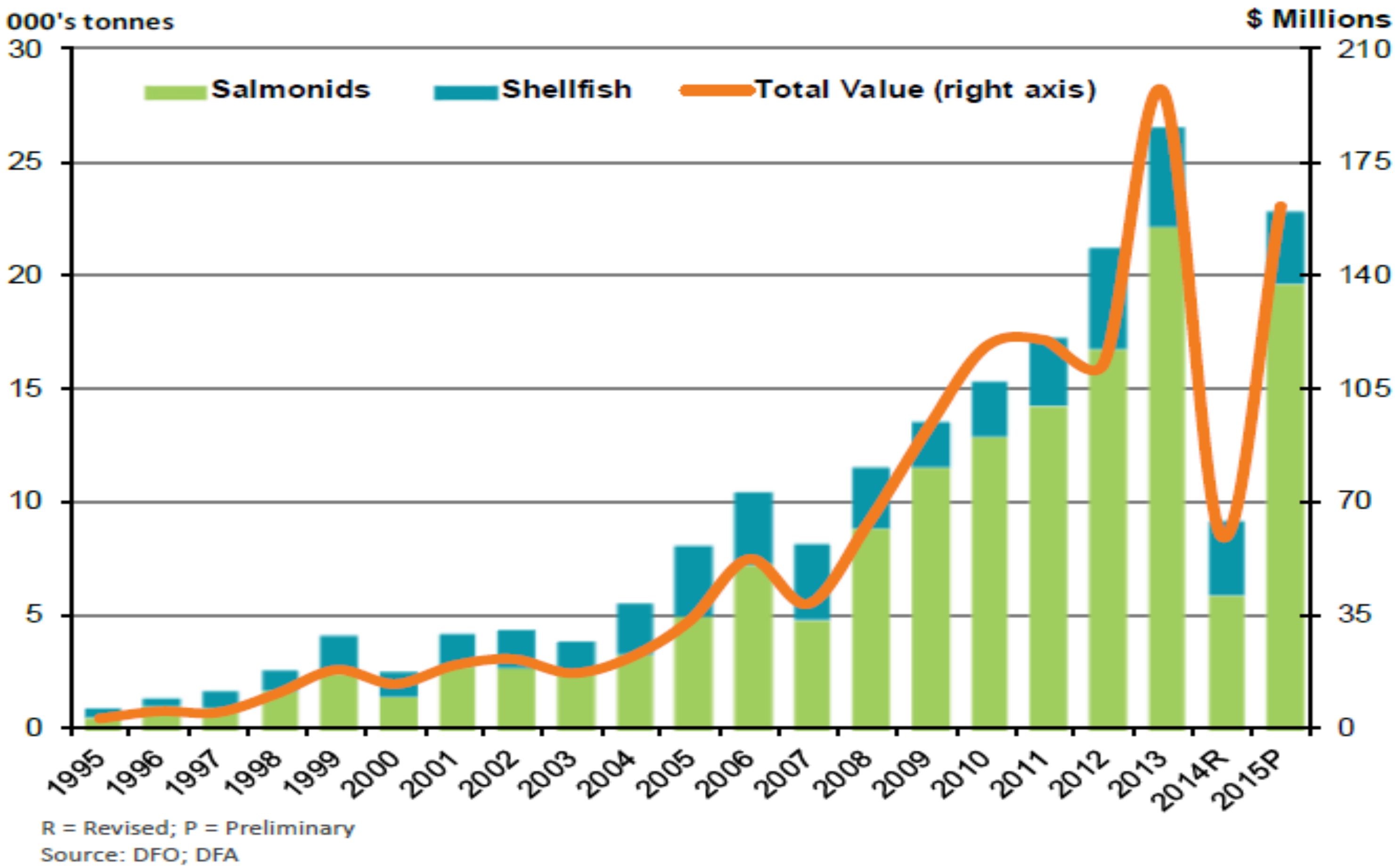
Processing Workers



Source: DFA

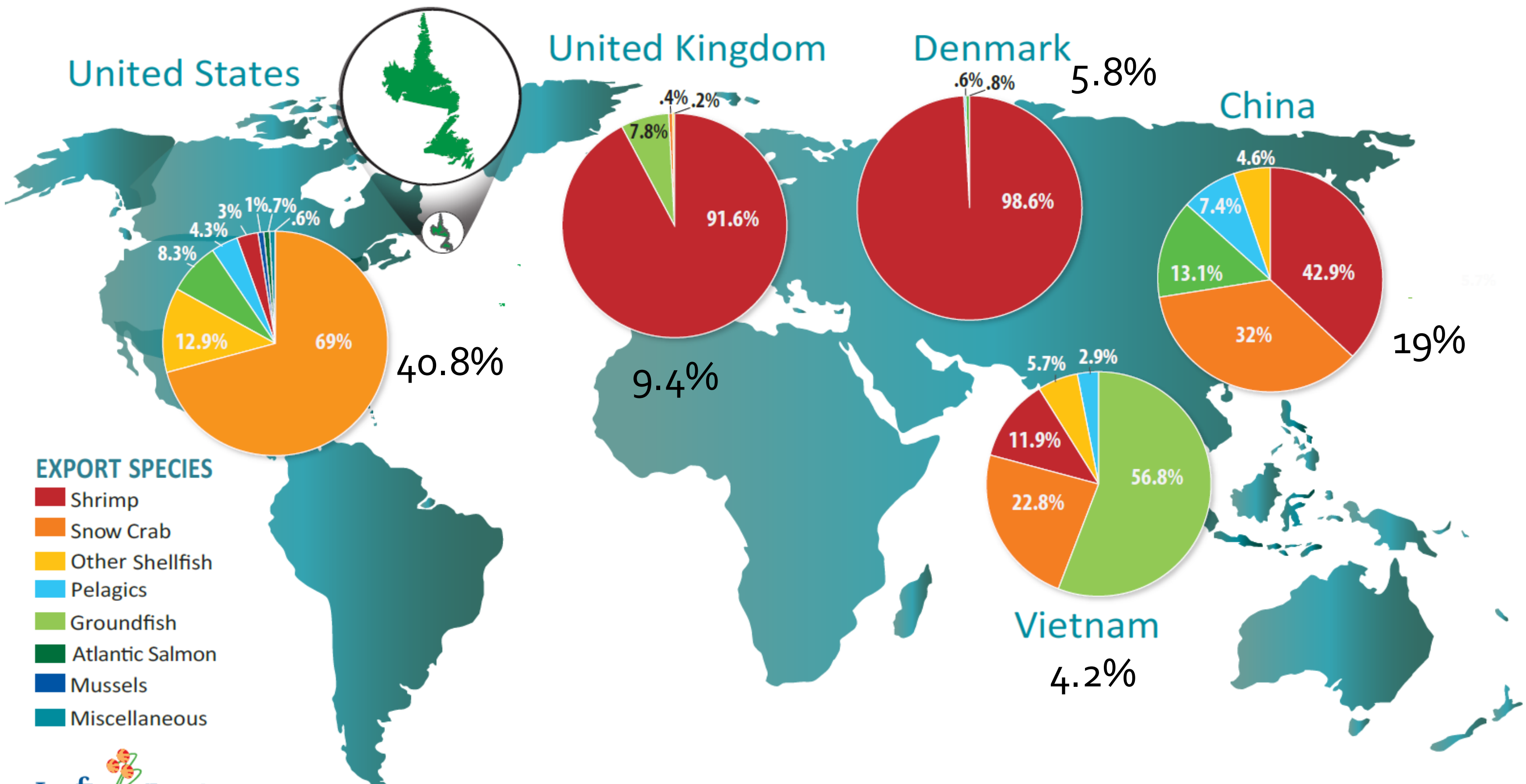
Labour Market Outlook 2025 - Projected labour supply of fishing masters/fisherman is expected to lag projected job openings. Significant labour supply responses will be required to meet demand

NL Aquaculture Production



*Total aquaculture employment of approximately **439** workers in 2015*

Top Five World Market Destinations for NL Seafood Products 2015



Newfoundland Labrador CANADA

Note: Each pie chart represents the distribution of products within the identified country based on export value.

Data source: Statistics Canada

*Export value exceeding **$1** billion in 2015 with products sold in more than 40 countries*

2015 Record Year for NL Seafood

- Record Prices for Northern Shrimp

- Near record prices for Snow Crab

- Rebound in aquaculture production
  - Salmonid production increases over 2014
    - Aided by weak CAN$

- Production value for 2015 well over $ 1.2 billion
  - Significant revenue generation in rural NL in particular

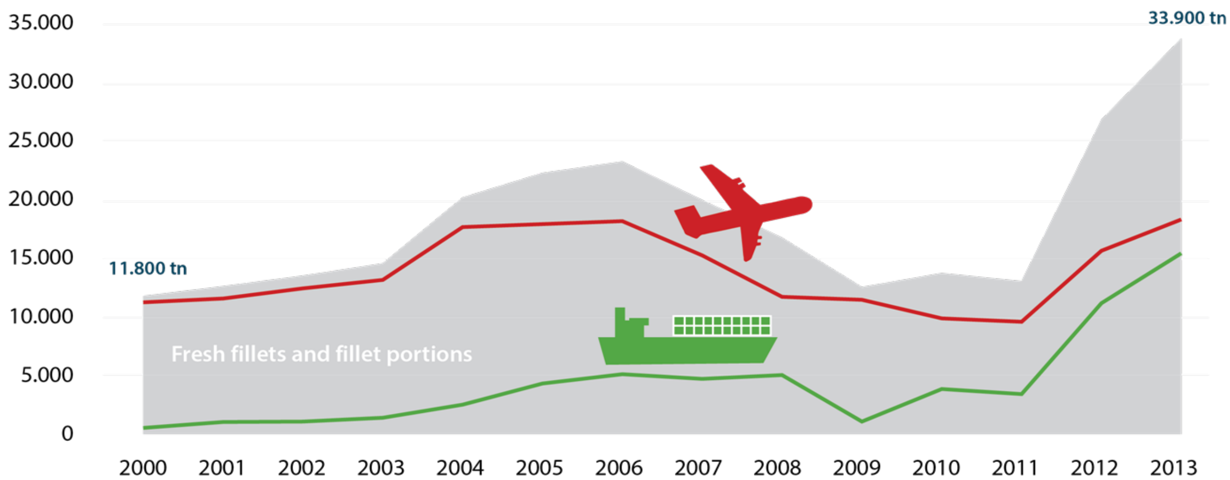
Interesting to note that in a period where many other sectors are struggling seafood is contributing significantly to the provincial economy

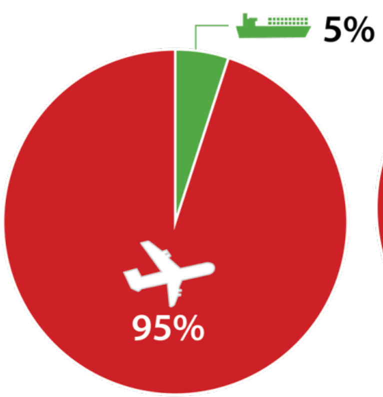
Industry Competiveness Issues

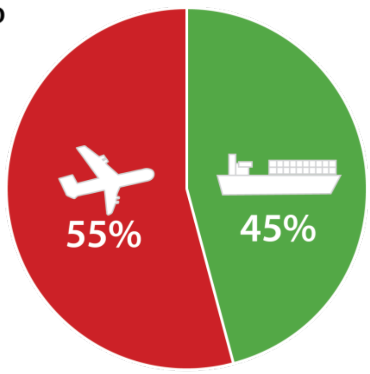
The Icelandic Cod Story

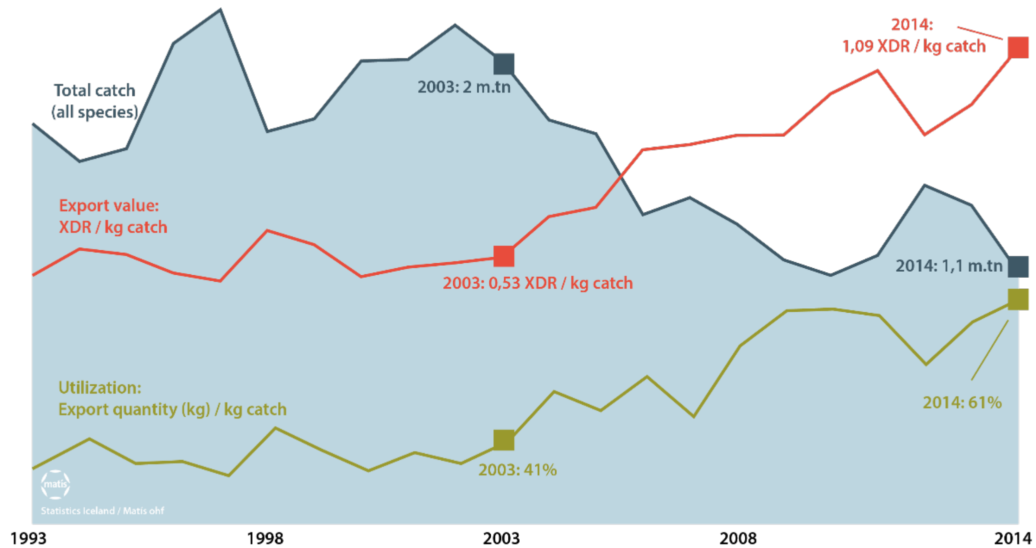
Growth in fresh cod production

Source: Matis

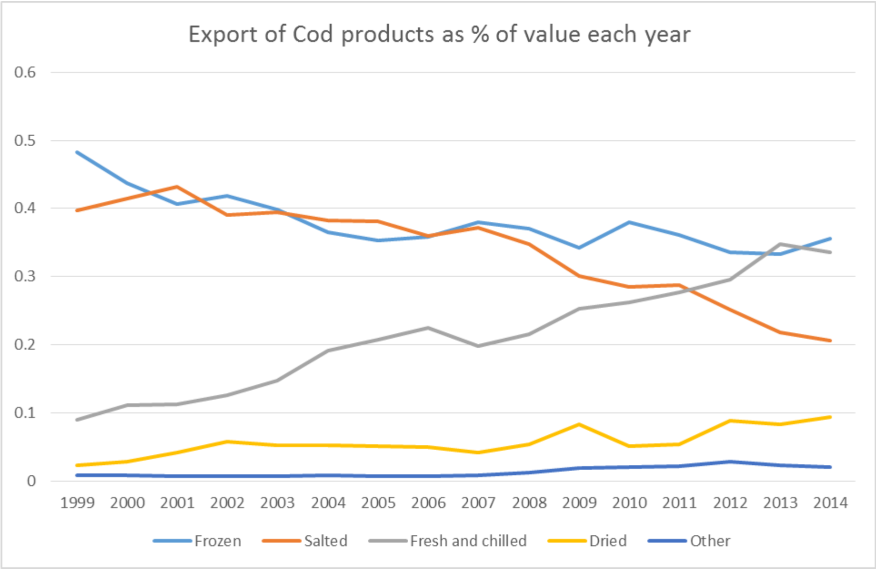


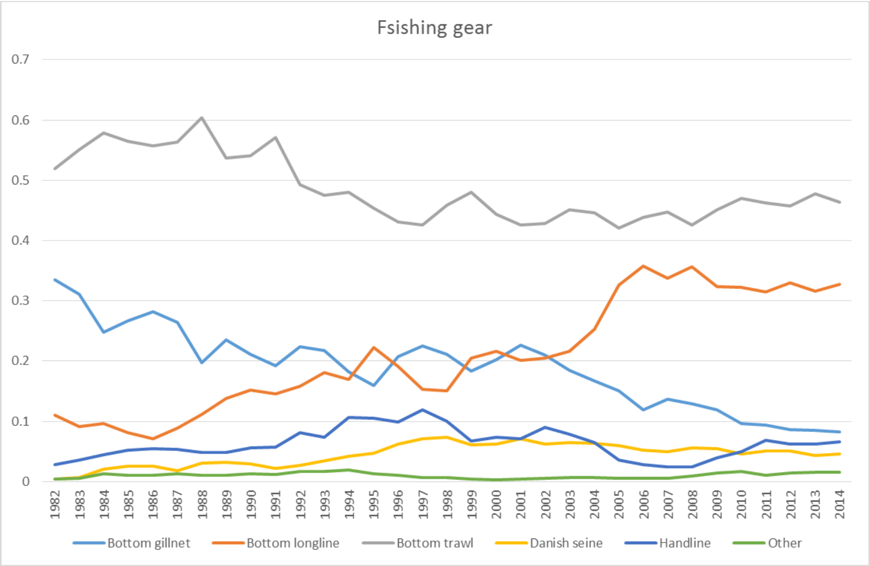


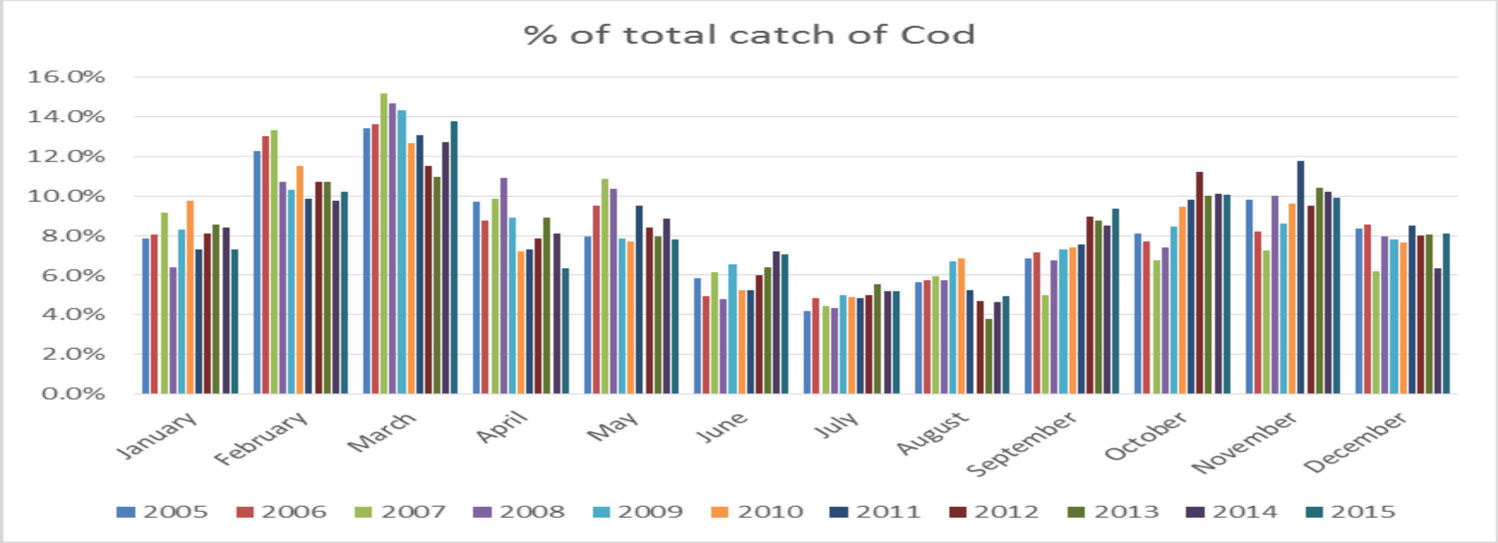




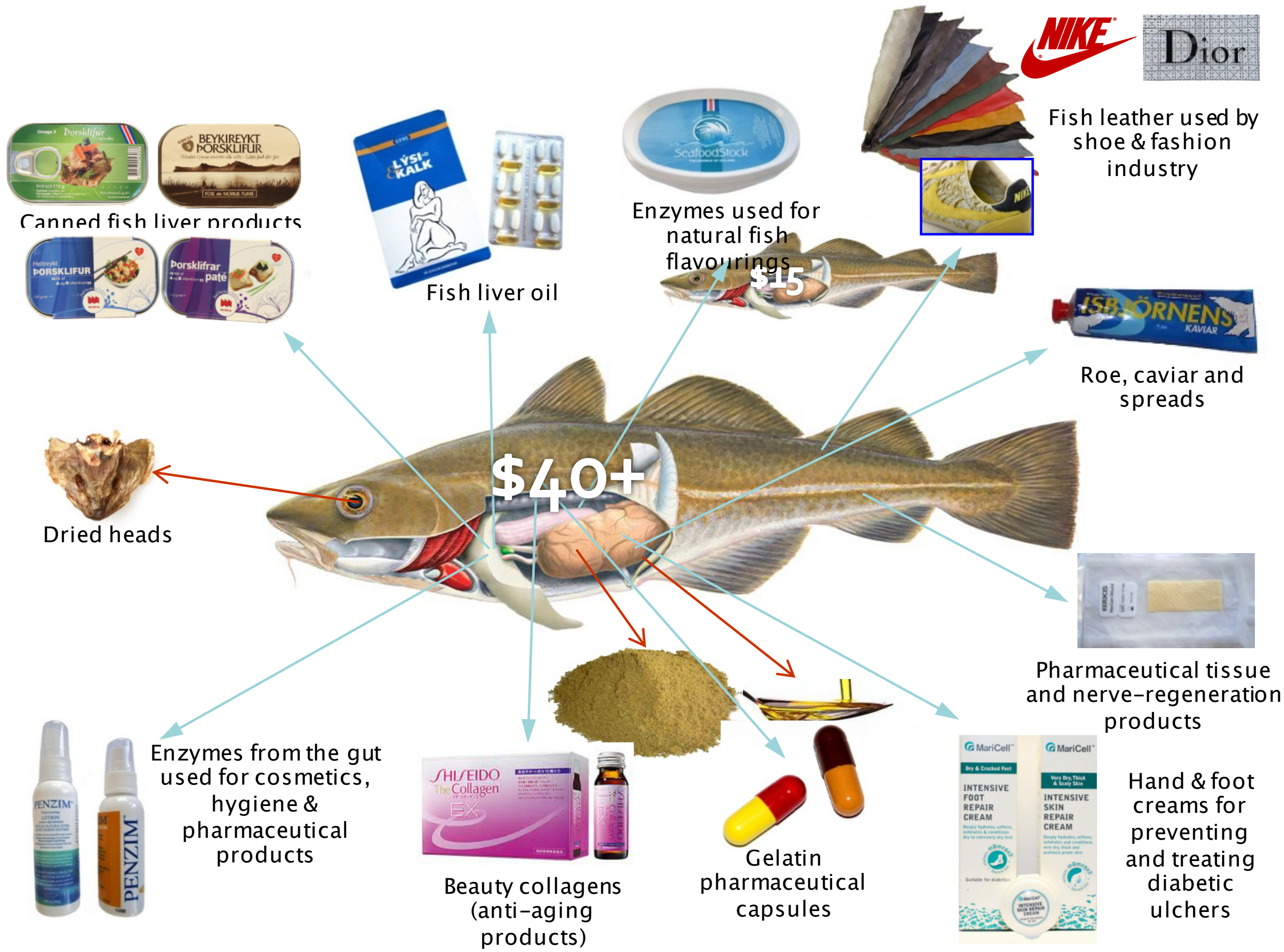
Icelandic Trends







Source: Dr. Ögmundur Knutson UNAK



Canned fish liver products
Fish liver oil
Enzymes used for natural fish flavourings
$15
Fish leather used by shoe & fashion industry
NIKE
Dior
Roe, caviar and spreads
Dried heads
$40+
Pharmaceutical tissue and nerve-regeneration products
Enzymes from the gut used for cosmetics, hygiene & pharmaceutical products
Beauty collagens (anti-aging products)
Gelatin pharmaceutical capsules
Hand & foot creams for preventing and treating diabetic ulchers

UK Supermarket Visit – September 2015

£17.39 per kg

Chilled

£14.62 per kg

Fresh

£13.50 per kg

Frozen

London Billingsgate Fish Market – Sept 10, 2015

Icelandic Cod – 12-16 oz

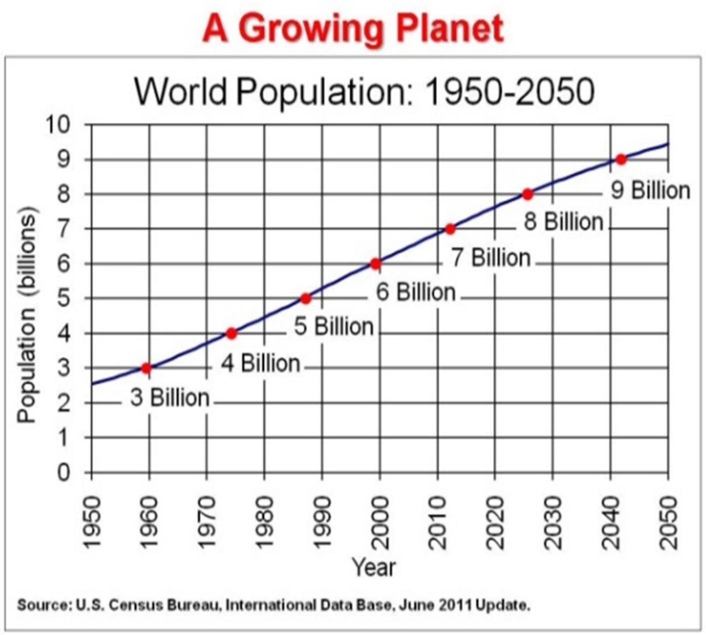
Production date – 08/09/15

Use By Date - -14/09/15

Strong markets continue to exist for top quality cod that can be supplied on a consistent basis

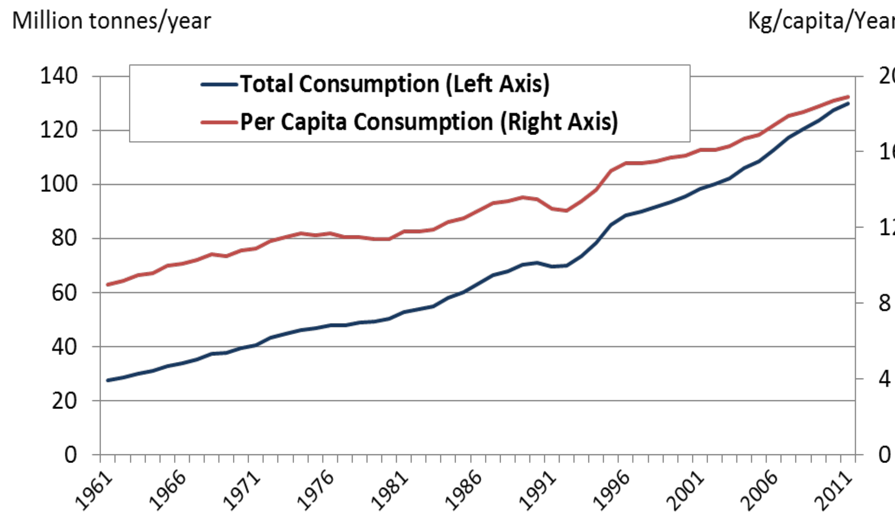
GLOBAL TRENDS AFFECTING NL SEAFOOD SECTOR

World Population Growth



FAO estimates that 40 million tonnes of aquatic food needed by 2030 just to maintain current per capita consumption

Global Seafood Consumption

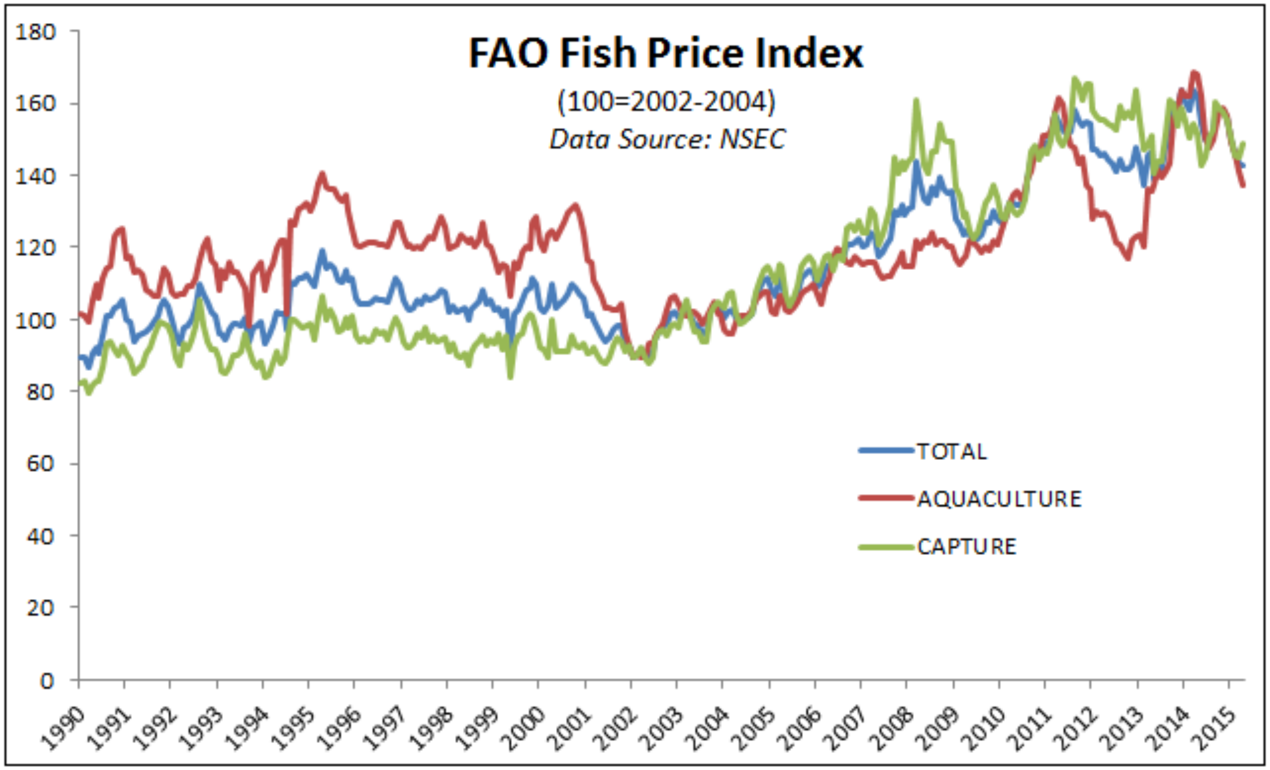


Source: Food and Agriculture Organization of the United Nations (FAO)

Per-capita seafood consumption rose from 9.0 kg/year in 1961 to 19.9 kg/year in 2014

OECD-FAO estimate total consumption to increase to 165 million MT in 2023

Growth in Global Seafood Prices

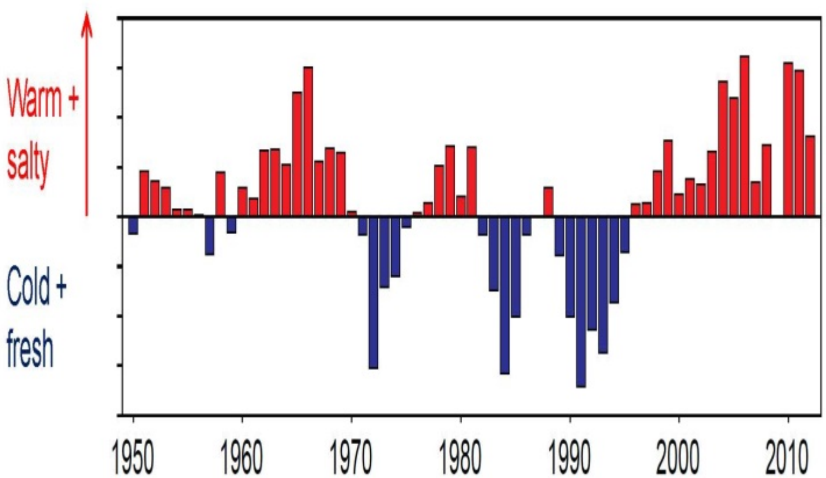


FAO estimates that average price of traded seafood products is expected to grow by 30% by 2022

Sustainability Certification Schemes

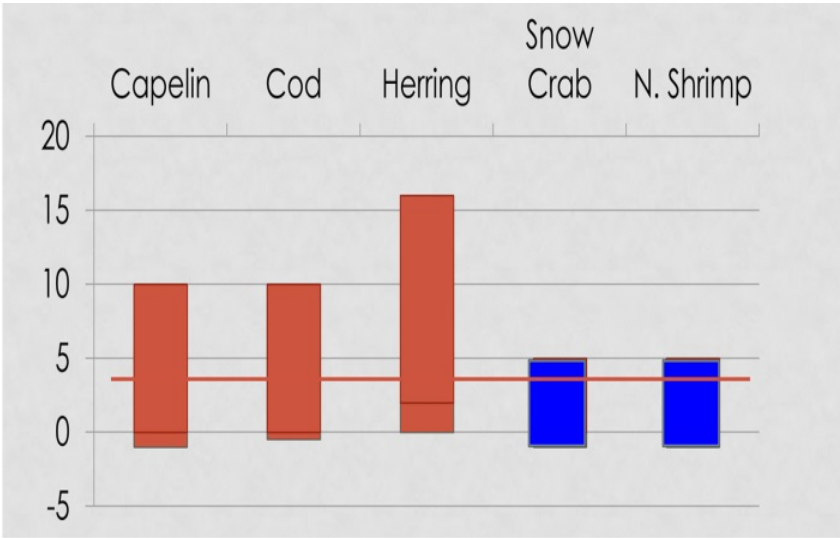
Potential Ecological Shift

Water Temperature



Source: Colbourne

Temperature - Production



Source: G. Rose

CETA Agreement

- Agreement in Principle on October 18, 2013
- Final Agreement Signed October 2016
- Ratification expected in early 2017
- Elimination of Tariffs
  - 99.1 % upon signing
  - Up to $25 million in gains on signing
  - $100 million potential through new opportunities
- Removal of end-use restrictions (branding opportunities)
- $400 million Fisheries Investment Fund?

- *EU largest seafood market (32.2 billion in imports in 2015) in the world with a population of 500 million & per capita seafood consumption in the range of 24 kilos. This is a game changer for CAN seafood industry*

Other Global Trends

ROLE OF MI IN ADVANCING NL SEAFOOD VALUE CHAIN

MI School of Fisheries

Structure

- 3 applied research centres
- 1 industrial training centre
- 2 undergraduate programs
- 4 Graduate diplomas
- 2 Post-graduate certificates
- 2 Masters programs
- Supporting research based graduate students

By the Numbers

- More than 90 employees
- Manage 90-100 applied research projects per year
- Approximately $8 million research & training project value
- Excess of 1000 participants in industrial training programs annually
- More than 100 diploma/degree students

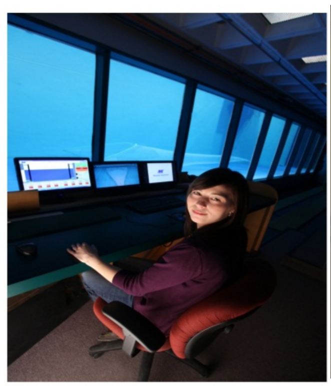
Offers complete seafood value chain approach

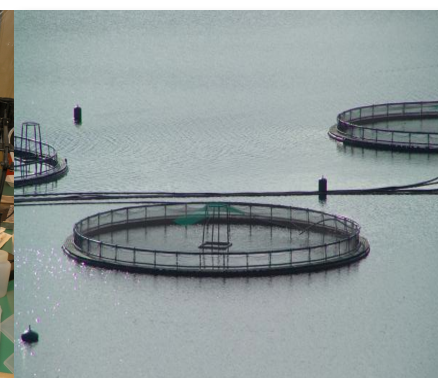
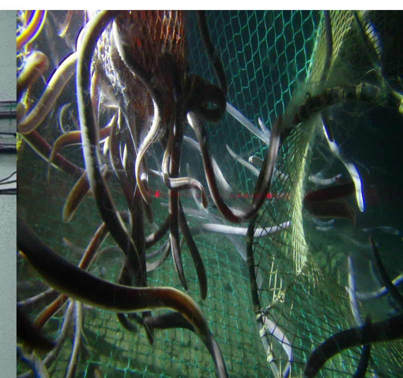
Most comprehensive academic and research capacity in Canada

Specialized Research Centres

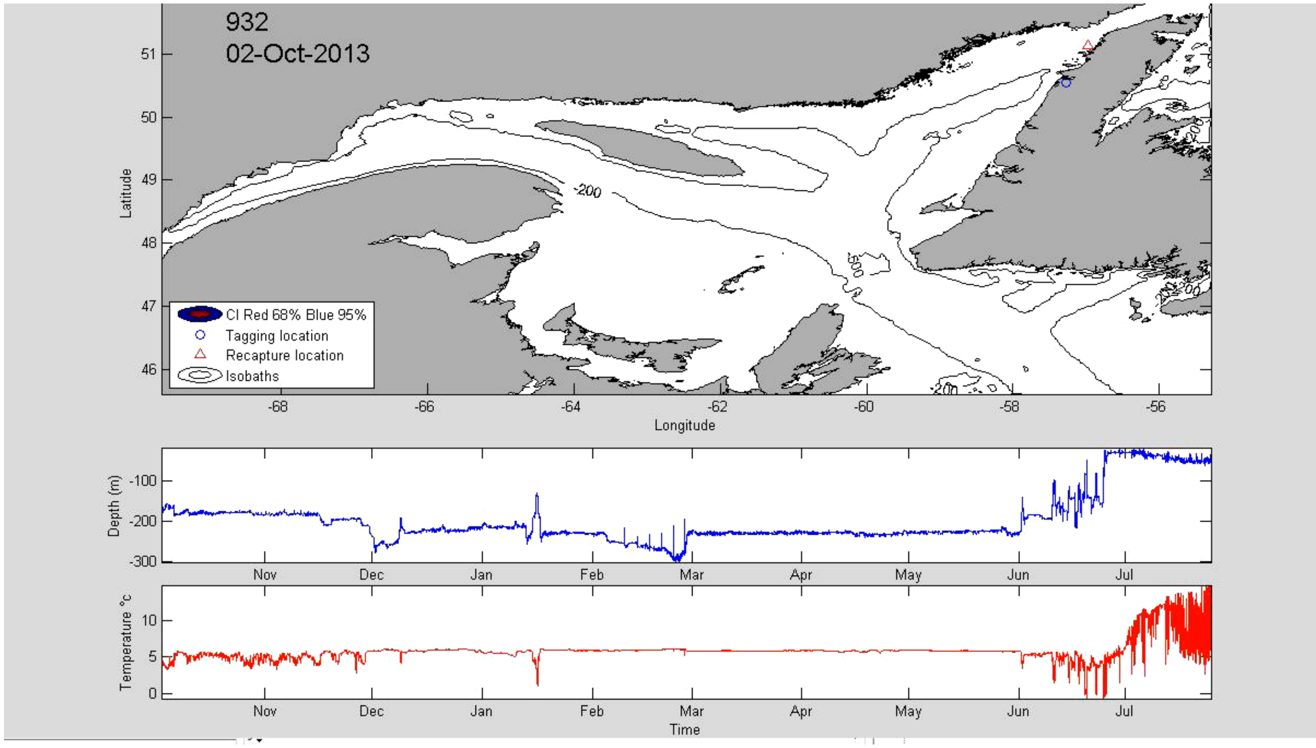
- Centre for Fisheries Ecosystems Research - Largest non-government research capacity in Canada that studies fisheries ecosystems
- Centre for Sustainable Aquatic Resources - Global leader in sustainable harvesting technology & houses largest flume tank in the world
- Centre for Aquaculture & Seafood Development - Comprehensive industrial response unit focused on seafood processing, sustainable aquaculture and marine bioprocessing.
- Centre for Community Based Education Delivery (CBED) – Supports the industrial response education and training needs of industry

Fisheries Science → Harvesting → Handling/ Landing → Processing → Logistics → Marketing

Case Study: Halibut Research



- Results will guide development of new survey for the stock
- The survey will allow setting quotas based on abundance of the resource and increasing value through MSC certification

Fisheries Science → Harvesting → Handling/ Landing → Processing → Logistics → Marketing

NORTHERN PENINSULA SITUATION

Northern Peninsula Industry Snapshot

- Harvesting – 40,000 tonnes of fish landed at 62 ports (2012 data)
  - Diverse fleet sector from small multi-species vessels to larger shrimp fleet
  - Significant offshore sector employment and trans-shipment of product
  - Hundreds of inshore sector harvesters

- Processing – 13 Active fish processing plants processing nearly 11,000 tonnes of end-weight fish and employing 750 workers (2015 data)
  - 4 active shrimp processing facilities

Northern Peninsula Industry Advantages

- Critical mass in shrimp processing sector
  - Despite resource decline NP operations likely to remain as strategic locations and operations
  - Access to both gulf and northern stocks critical
- World Class Cold Storage operation and trans-shipment facility
  - Eimskip provides direct access to global markets
    - Europe & US in particular (former critical with CETA)
- Strategic proximity to recovering Northern cod resource
  - Above infrastructure critical to maximize opportunity
- Emerging opportunities with other recovering resources
  - i.e. Gulf redfish, Atlantic halibut, etc.

Northern Peninsula Industry Strategic Considerations

- Regional hub for Northern Shrimp fishery
  - Ensure critical support services are in place i.e infrastructure, servicing, etc.
- Strategic opportunities around groundfish recovery i.e. N. cod, redfish, halibut, etc..
  - Allign value chain to support this;
- Become an innovation hub demonstrating best practices for industry success
  - Quality initiatives, marine bioprocessing, etc.
  - Better utilization of available resources
- Place particular focus on the needs/future of the inshore fleet
  - Requirements for viable operations
  - Assess best practices elsewhere
- Focus on needs of next generation
  - What will attract/keep youth interest in this industry
    - Consider future industry leaders forum

Outlook

- Harvesting & Processing sector continued employment decline
  - Those remaining should see improved economic returns
    - Decline in non-renewable sector may drive renewed interest in seafood
- Continued growth in Aquaculture sector particularly on south coast
  - Grieg Aquaculture expansion in Placentia Bay could be game changer
- Continued groundfish recovery (cod in particular)
  - Focusing on quality and value will be critical
- Fisheries regime shifts due to climate change will require adaptive strategies
- Global seafood consumption will continue to expand
  - NL seafood sector can capitalize on this through market based approach
- Continued expansion of innovation and technology adoption
  - Driven by demographics & competitiveness requirements
  - Direct role for government in supporting and enabling this

Final Thought

- The historical public policy consideration of the fishery in our province was one of a high volume and low value approach that was focused primarily on employment maximization.
- The future public policy consideration will have to be one that is focused on value over volume and places resource sustainability and economic viability for participants as its primary objectives.
- Northern Peninsula can play a significant role in the fishery of the future but it has to be a value based approach