

Science, Service, Stewardship



Examining the profitability of Community Supported Fisheries Programs

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Outline

- Community Supported Fisheries (CSF) Programs
- Overview of fishing and fishing regulations
- Comparing and contrasting CSFs and CSAs
- Benefits of CSFs
- Investment model of CSF formation
- Future Research



CSF definition

- Arrangements between fishermen, shore-side operators and consumers
- Upfront payments in exchange for weekly seafood deliveries
- Support from *locavore* movement and those wishing to minimize *food miles*
- Received start-up support from NOAA SeaGrant and NGOs



Courtesy: <http://www.capeannfreshcatch.org/>



Fishing and Regulations for CSF species (Where, When, Who, How Much)

Northern Shrimp

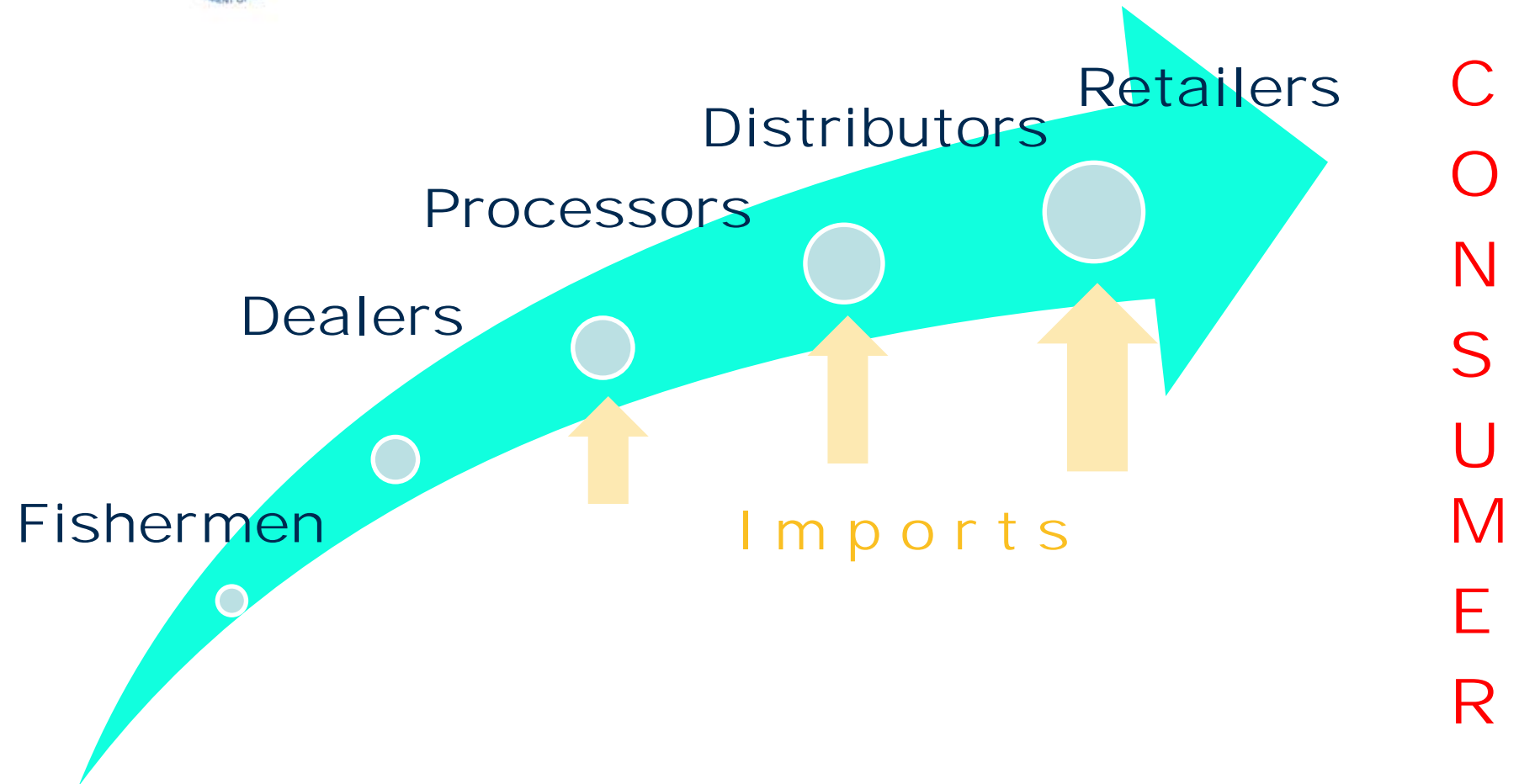
- Managed by states and ASMFC
- Regulations: TAC, seasonal, trip limits, size limits
- Small, day boats (mostly Maine)
- Mostly trawl gear
- Low market price

NE Multispecies

- 13 species managed jointly with NEFMC and federal government
- Transferable quota program replaced effort control system

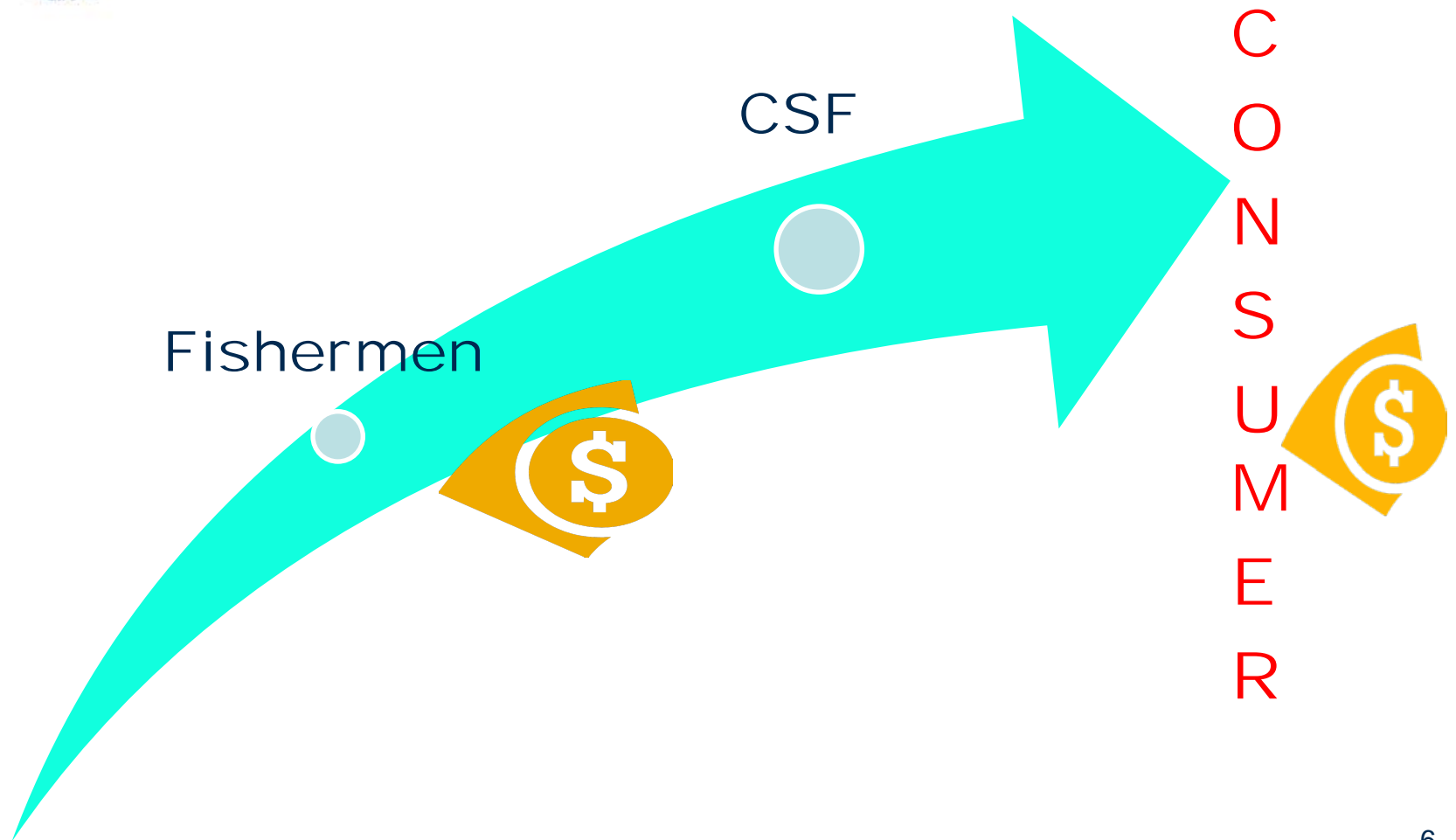


Traditional Marketing





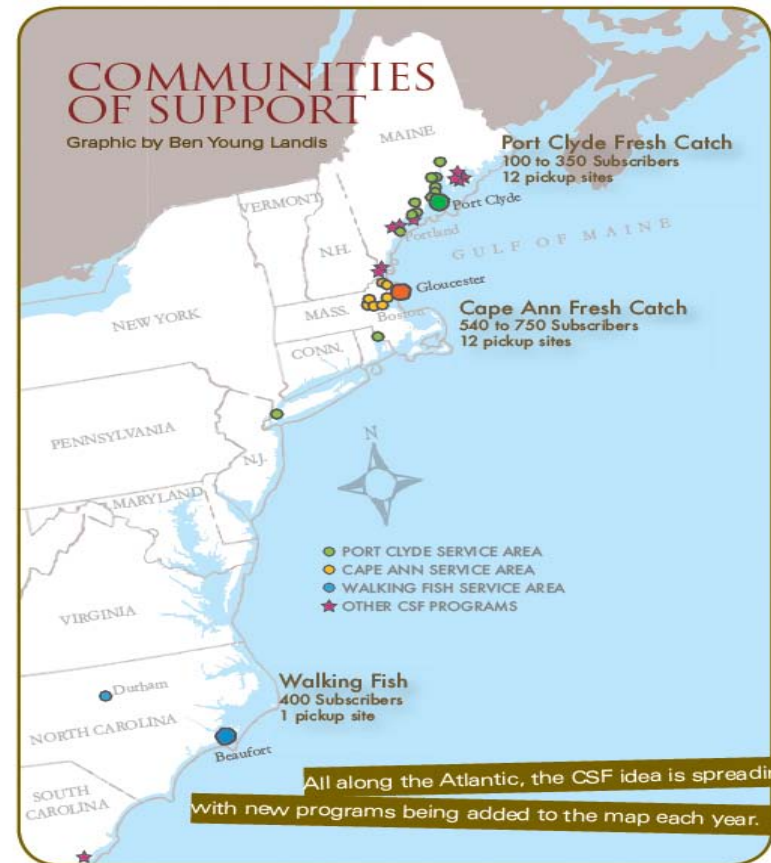
CSF alternative market





Distribution of CSFs

- Relatively new innovation that follows CSAs
 - First program began in 2007
- Currently 10 CSFs in New England and 2 in North Carolina





Diversity of CSFs

- Variable levels of success
- Products vary by catch, region, season, permit holdings, and product delivery type
 - Northeast products
 - Northern shrimp
 - Groundfish (e.g., cod, haddock, pollock, grey sole)
 - Lobster
 - Southeast products
 - Shellfish (blue crab, oysters, clams)
 - Black sea bass, mackerels, groupers, dolphinfish



CSFs program characteristics

	Risk Sharing	Advance payment	Social connection
Blue Dragon Mussel Wagon			Direct
Cape Ann Fresh Catch	✓	✓	Indirect
Carteret Catch	✓		Direct
Eastman's Local Catch	✓	✓	Direct
Hannah Jo	?	✓	Direct
Linda Kate Lobster Coop	?	✓	Direct
Maple Ridge Farm & Fishery	✓	✓	Direct
Penobscot East	?	?	?
Port Clyde Fresh Catch	✓	✓	Indirect
Revolutionary Fish	?	✓	?
Walking Fish	✓	✓	Indirect
Yankee Fishermen's Coop	✓	✓	Direct



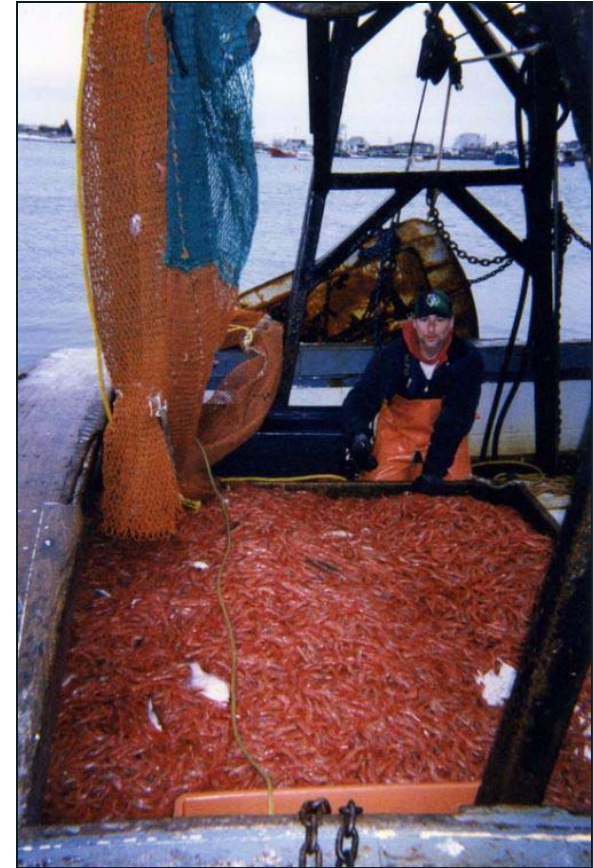
Risk sharing

- CSF risk sharing is slightly different from CSA model
- Fish market shares are offered in terms of price per pound versus price for total pounds
- Timing risk instead of production risk
 - May receive an oversized “make-up” share or an extended season.



Product availability

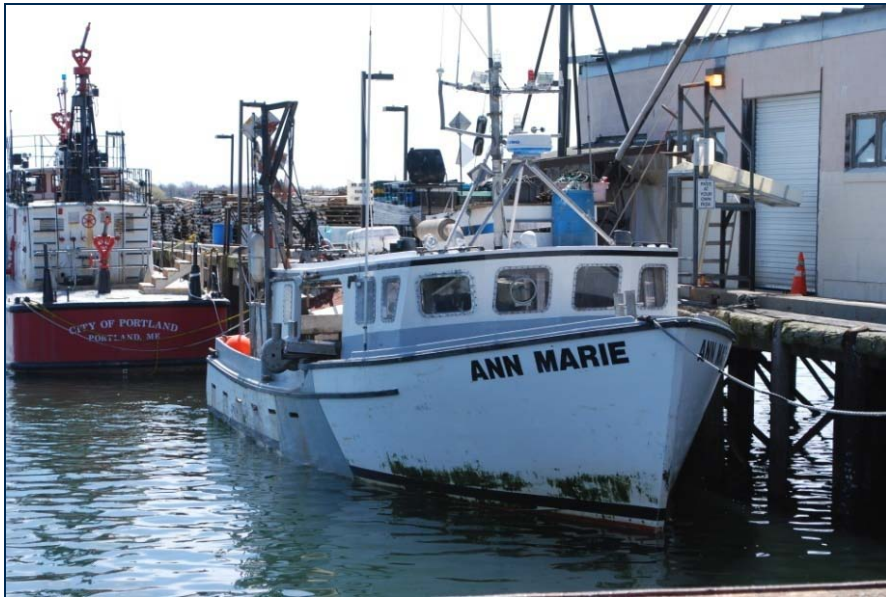
- Less product variation in CSFs
- Lack of diversity may be explained by:
 - Share size does not allow for delivery of more than 1-2 fish
 - Limited ability to control catch
 - Gear
 - Seasonal availability



Courtesy: <http://www.eastmansfish.com/gallery/28828>



Social connections



- Major goal of CSA programs is to foster a social connection between farmers and consumers
- Difficult to visit production site
- Main connection is at the pick-up location
- Other connections include cooking, filleting demos, tastings or photos of fishermen/vessels



Product delivery

- Minimal processing
- Shrimp – with heads on or shelled
- Whole fish versus fillet
- Many tried whole fish delivery
 - Strengthen connection to consumers
 - Avoid permitting and capital constraints
 - Difficult to find fish small enough to fulfill share size
 - Consumer preferences



<http://maxport.21food.com/showroom/44737/product/Froze-n-COD-fillet/showing.html>





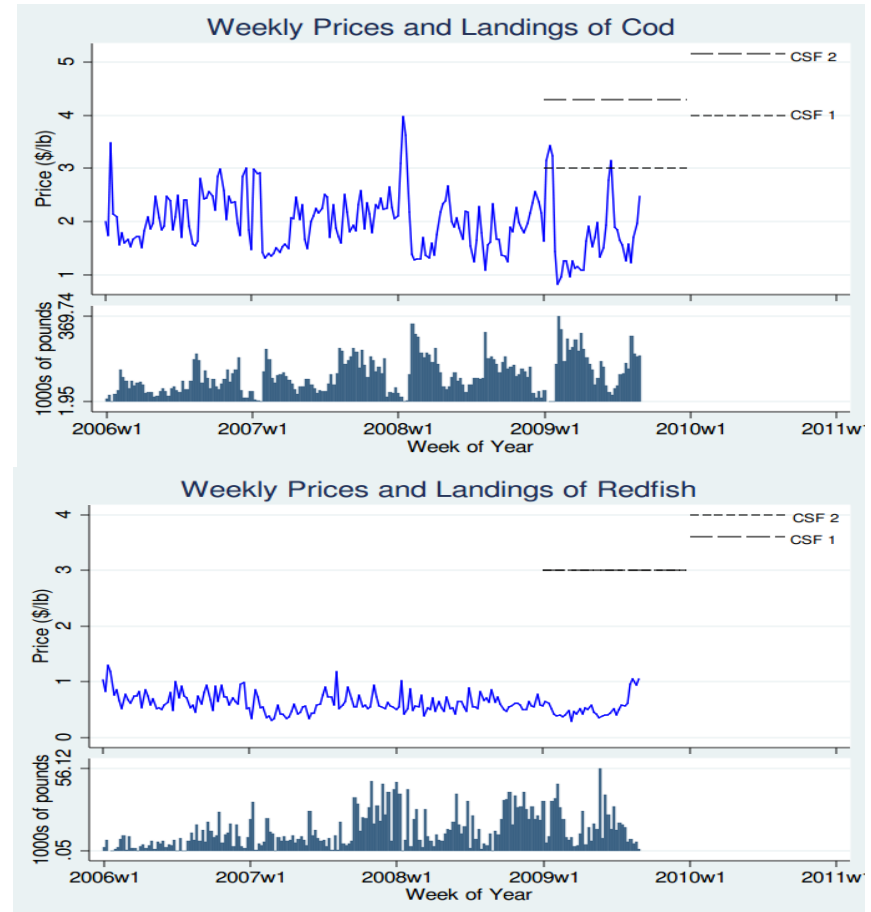
Traditional seafood pricing

- Species-by-species variation
 - High prices: cod, witch flounder, haddock
 - Low prices: pollock, redfish, Northern shrimp
- Price fluctuation may be due to:
 - Difficult to store fish without compromising quality
 - Seasonal variation affects conditions, regulations and physical availability
 - No forwards/futures to reduce volatility



Benefits to fishermen

- CSFs can insulate fishermen from price volatility
- Provide a market outlet for species that have traditionally low values





Benefits to fishermen (con't)

- CSF pricing is closer to retail pricing than the traditional dealer pricing
- CSFs could increase fishermen's income by providing a constant price for all fish
- Outlet for fish with low market prices



Consumer benefit

- Consumers benefit from the increased freshness and diversity of fish
 - Pricing is similar to traditional retail prices
- Some species, such as redfish and hake, are difficult to process, highly seasonal, and may only infrequently appear in the retail market
- Opportunity to consume novel types of fish may be valued by consumers



Investment model

$$\Pi = [p_c - w(x_c)] x_c + x_t - F$$

- A firm can produce CSF-fish (x_c) or traditional fish (x_t) from a bundle of landed fish
- At most θ of the CSF-fish can be sold, where $\theta \in [0, 1]$.
 - θ can be interpreted as the fraction of fish distributed through the CSF
- Producing CSF-fish requires both quasi-fixed and variable costs



Inside the Math

- Capture profits from a greater portion of marketing chain and higher quality
- There are investment costs
 - Human capital – marketing or accounting skills
 - Physical capital – trucks or processing facilities
- Transaction costs could be low if wives are integrated
 - Traditionally responsible for these activities



Firm profitability

$$\Pi = [p_c - w(\theta)] \theta + (1 - \theta) - F$$

$$\Pi = [p_c - 1 - w(\theta)] \theta + 1 - F$$

A CSF may be sustainable if:

- The market for CSF fish is “large”
- Costs are relatively low
- The “price premium” for CSF fish is large



Future Research



Courtesy: <http://www.eastmansfish.com/gallery/28828>

- Food miles research
- Comparing revenues for CSF-fish vs. traditional dealer fish
- Implications for catch share management
- Monitor evolution of CSFs