Marketing, Trade & Management of Aquaculture & Fishery Resources

W-2004 (2009-2014)

Fisheries & Aquaculture Face Management and Marketing Challenges

Salmon, pollock, shrimp, catfish, and other fishery and aquaculture enterprises in the US provide a significant source of protein, economic activity, and recreation; however, both traditional capture fisheries and aquaculture (cultivating fish on "farms") face numerous challenges. Harvest limitations, new regulatory systems, changing marketing landscapes, increasing competition from imported seafood, and depreciating infrastructure are challenges that demand innovative industry practices. Furthermore, because they are biologically-based and often located in coastal zones, fisheries are susceptible to shocks from environmental events like hurricanes and oil spills. To meet these challenges, producers and policymakers need reliable information concerning the economic implications of regulatory actions, changes in market and environmental conditions, changing consumer preferences, advances in harvesting methods and technology, and changing institutional arrangements in the supply chain.

Consumer preferences surveys conducted by W-2004 indicated that locally grown seafood positively influences willingness-to-pay for products, and price premiums for wild-caught seafood are acceptable to people who grew up in coastal areas. USDA-ARS photo by Peggy Greb.

Multistate Research Project Boosts Economic Sustainability of Fisheries & Aquaculture

In 2009, Multistate Research Project W-2004 formed to coordinate research on and extension of improved management, trade, and marketing strategies for aquaculture and capture fisheries.

- W-2004 has started to address the problem of economic illiteracy in the fishing industry and regulatory processes, helping producers and policymakers make more sustainable decisions. For example, researchers quantified both the biological and economic impacts of sea lice on farmed salmon, and policymakers used this information to set appropriate thresholds at which farms must use chemical treatment or culling to control infestations. Research-based thresholds better protect against costly outbreaks and potential transmission to nearby wild salmon populations.
- W-2004 illuminated ways to structure harvest quotas and incentives to minimize bycatch and wasteful at-sea discards, helping fishers avoid costly penalties and protecting fisheries from overexploitation.
- W-2004's recommendations for effective marketing practices are being adopted, enhancing producer welfare and boosting the competitiveness of the US fishing and aquaculture industries. In particular, the industry is using data on consumer preferences to market farm-raised and wild-caught seafood products to a broader variety of consumers.

Research & Extension Activities

Consumer Preferences & Marketing

Over the past five years, W-2004 investigated seafood product marketing. For example, researchers examined labeling requirements for product safety and traceability and the impacts of eco-labeling on price premiums. The eco-labeling analyses are being used by the industry and policymakers to determine if the benefits of labeling outweigh the costs. Researchers also examined the relationship between consumer preferences and information about health risks and benefits. Results showed a considerable lack of unbiased knowledge of seafood attributes, making it difficult for consumers to balance health risks and benefits. W-2004 members in Hawaii and Kentucky conducted state-wide surveys, which indicated that locally grown seafood increases willingness-to-pay, and price premiums for wild-caught seafood are acceptable to people who grew up in coastal areas. In addition to these studies and surveys, researchers developed new tools and techniques for analyzing seafood markets and demand, including decision support tools and ways to use scanner data.

Fishery & Aquaculture Management

W-2004 also examined the economic and sociological factors that influence fishery management and generated ideas to increase the efficiency and stability of fisheries. Researchers explored regulatory approaches that provide fishers with market-based incentives to target their catch and avoid bycatch of non-target, non-marketed species, including sea turtles and sea birds. In addition, research showed that allowing fishers to trade individual harvest quotas can minimize the number of fish discarded at sea. Related research evaluated the behavior of fishers under different management schemes and documented the emergence of different kinds of management regimes over time.

Researchers also evaluated the impact of the regulatory environment on the development of aquaculture in the US. Using data from an online survey, W-2004 researchers compared the perceptions of aquaculture stakeholders in the US and Norway. Results provided useful information for US aquaculture policymakers, regulators, and stakeholders regarding how policies, practices, and education could change perceptions of aquaculture stakeholders and the future of US aquaculture.

Over the course of the project, W-2004 researchers identified case studies of commercial success and innovation in the global fishery and aquaculture industries. These case studies informed the development of performance-based indicators for estimating long-term wealth generation and sustainability in specific fisheries. These indicators are being used by federal and international agencies (e.g., the World Bank) to evaluate and prioritize fishery management projects.

Outreach

The group delivered research results to stakeholders through scientific conferences, book chapters, reports, databases, and Extension and outreach programs. In addition, the group expanded the development and use of online fisheries economics and management courses. Online materials make it easier for fishers across wide geographic distance to access up-to-date information and training resources. W-2004 also educated scientists and industry representatives on future training and employment opportunities for fisheries economists.

W-2004 researchers identified regulatory approaches that provide fishers with market-based incentives to avoid overharvesting and minimize bycatch. Photo by Bart Eaton.

In fisheries systems, extreme weather events, like hurricanes, and long-term changes in precipitation, such as droughts, can have profound impacts on ecosystems and the sustainability of fisheries. During Hurricane Irene, high flood waters breached some fish rearing pools at White River National Fish Hatchery, leaving some fish stranded among the sediment brought in by the flood waters. W-2004's economic models incorporate environmental constraints and impacts to better inform fishery managers and policymakers' efforts to protect the fisheries, the fishers, and the communities and consumers that depend on them. USFWS photo by Ann Froschauer.

Want to know more?

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Administrative Advisor: Larry Curtis, Oregon State University

Participating Institutions:
University of Alaska, Anchorage
Auburn University
University of California, Davis
University of Connecticut, Storrs
Clark University
University of Florida
University of Hawaii
Iowa State University
Louisiana State University
Mississippi State University
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Purdue University
University of Rhode Island
University of Stavanger
National Oceanic and Atmospheric Administration (NOAA)
Northeast Fisheries Science Center/NOAA
Pacific Islands Fisheries Science Center/NOAA
World Bank

Impact Statement compiled by Sara Delheimer.