

WDC4004

Marketing, Trade, and Management of Aquaculture and Fishery Resources

Annual Meeting Minutes

Dates: February 13-14, 2020
Location: Gilmore Hall Room 202A
College of Tropical Agriculture and Human Resources
University of Hawai‘i at Mānoa (Honolulu, HI)

List of participants

Frank Asche	University of Florida
Kuan-Ju Chen [^]	University of Guam
Kirsten Leong	NOAA Pacific Islands Fisheries Science Center
Kwamena Quagraine	Purdue University
Andrew Ropicki [^]	University of Florida
Andrew Scheld [^]	Virginia Institute of Marine Sciences
Brian Szuster	University of Hawaii at Manoa
Melva Trevino-Pena	University of Rhode Island
Hirotsugu Uchida	University of Rhode Island

[^] Attended online

Meeting objective

1. Develop and complete the first draft of the proposal for renewing the USDA Multistate Research Project “Marketing, Trade, and Management of Aquaculture and Fishery Resources.”
2. Networking among the participants and facilitate future collaborations.

Activities at a glance

Feb 13, 5 – 9 pm Networking reception with all on-site participants.
Feb 14, 9 am – 3 pm Group discussions on the proposal and future collaboration possibilities.

Meeting minutes for Feb 14th

- Meeting commenced at 9 AM with full participation.
- Sharing research interests and current/pending projects of the members (Attachment A).
- Discussion on the proposal renewal.
 - Presented the most recent proposal draft submitted as W_TEMP_4004 (Attachment B).

- Discussed additional topics that could be included to the draft proposal based on the research interests of the participants. Examples include community-supported fishery and aquaculture concept application to increase resilience of coastal communities to external shocks, impacts of marine debris and pollution, and economics of net-pen and cage aquaculture.
 - Discussed new objectives and research topics to be included in the new proposal (Attachment C).
- Discussion on submitting a joint grant proposal to NOAA Sea Grant Program's RFP "Addressing Economic and Market Needs of the U.S. Aquaculture Industry"
 - Participants from URI, UFL, UHI, and UOG agreed to submit a joint proposal.
 - Discussed the proposal objectives based on the draft prepared (Attachment D).
- Because the grant proposal topics mostly overlap with those planned to be included in W_TEMP_5004 proposal, it was decided unanimously to first focus on the grant proposal first (due April 22nd). A conference call will be scheduled in late April ~ early May to resume the proposal writing for W_TEMP_5004.
- Meeting adjourned at 3 PM.



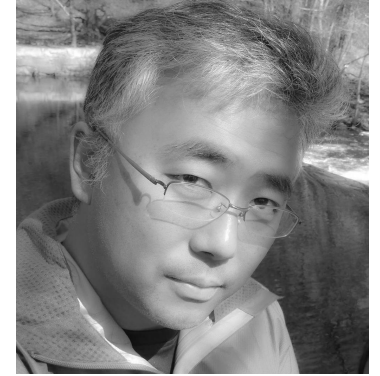
WDC4004: Marketing, Trade, and Management of Aquaculture and Fishery Resources

February 14, 2020
University of Hawaii at Manoa
Honolulu, HI



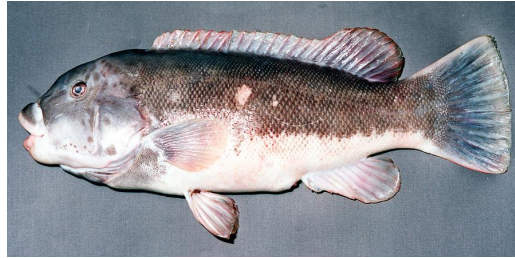
Hiro Uchida

Associate Professor and Chair
Department of Environmental and Natural Resource Economics
University of Rhode Island



- Research interest/field
 - Economics of fisheries management (incl. developing countries)
 - Co-management of natural resources (fisheries, etc.)
 - Consumers demand of seafood (wild & farmed) and certifications / labels / attribute information
 - (New) Marine plastic pollution and ghost gear
- Research projects (past & present)
 - Evaluation of Rhode Island fluke sector pilot program (NOAA; MRE 2012)
 - Are Two Rents Better than None? When Monopolies Correct Ill-defined Property Rights (MRE 2016)
 - Long-term health effects, risk perceptions, and consumption of farmed seafood (USDA, AJAE 2017)
 - Evolution and future of the sustainable seafood market (Packard F, Nat. Sus. 2018)
 - Risk of food-borne diseases in farmed oysters: Economic analysis of consumer response and producer's strategy (NOAA)
 - Fishery co-management, SES, and institutional fit (Abe Fellowship, submitted to EE)

Hiro Uchida (2)



- Ideas for WDC4004 (Sep. 2021-26)
 - a. Mainstreaming underutilized fish species for more resilience and eco-friendliness of fishing industry
 - b. Aquaculture as a mean to enhance resilience of coastal communities
 - c. Genetically modified farmed seafood: consumers' perception, market acceptance, new "blue revolution"?
 - d. Marine plastic pollution / marine debris in general
 - i. Impacts and solution for ghost gear (commercial fishing sector)
 - ii. MPP and recreational fishing sector
- Upcoming funding opportunities
 - a. NOAA Sea Grant: Addressing Economic and Market Needs of the US Aquaculture Industry (RFP available)
 - b. USDA-NIFA: Special Research Grants Program Aquaculture Research (RFP available)
 - c. NOAA Marine Debris Program (<https://marinedebris.noaa.gov/funding/funding-opportunities>)

Kwamena Quagraine



1. Research Focus: Farmed-fish markets; consumer seafood demand; local food & aquaculture; farm profitability;
 - a. Commercial kitchens for processing farmed fish / product development.
 - b. Market channel analysis – restaurants & retailers (*with Michigan State Univ*).
 - c. Economic and market potential for farmed walleye in Illinois and Indiana.
 - d. Consumer demand for Great Lakes aquaculture products (*with Michigan State Univ & Loyola Univ*).
 - e. Economics of indoor pacific whiteleg marine shrimp production (*with Kentucky State Univ & Auburn*).



2. Ideas for WDC4004 (Sep. 2021-26)
 - a. Economics of net pen / cage aquaculture
 - b. Impact of diseases on aquaculture development
 - c. Market risk assessment for small-scale producers
 - d. Aquaculture and the economics of local food system – processing & product development

Kuan-Ju (Kuan) Chen

Assistant Professor

College of Natural and Applied Sciences
University of Guam



- Research area
 - Consumers' preferences for sustainable and local products
 - Farmers' willingness to adopt bio-technologies that can improve profitability and reduce environmental harm
 - Risk analysis of market inter-relationships in biomaterial, energy, and agricultural markets
- Research projects (past & present)
 - Performance and Adoptability of Biodegradable Plastic Mulch for Sustainable Specialty Crop Production (USDA-NIFA-SCRI 2014-07894)
 - Applying Abundant Plants to Develop Battery Materials and Benefits to the Agricultural Economy (USDA-NIFA-A1521 2014-04184)
 - Develop Profitable Food Markets and Sustainable Agriculture on Guam (USDA-NIFA)
 - Agritourism: Develop Profitable Local Business and Sustainable Agriculture (GEDA-QCCC)





Kuan Chen (2)



- Ideas for WDC4004 (Sep. 2021-26)
 - a. Consumers' preferences for sustainable and locally grown seafood



Andrew Ropicki

Assistant Professor and Marine Economics Extension Specialist
Food and Resource Economics Department/Florida Sea Grant
University of Florida



- Research Interests
 - Analysis of rights-based management
 - Economic feasibility of new forms of aquaculture
 - Development of online extension tools for fishers and fishery managers
 - Impacts of harmful algal blooms on fisheries and aquaculture
- Research Projects (past and present)
 - Network analysis of quota trading markets (GMFMC 2020)
 - Economic impacts of red tide (NOAA 2019, West Florida Inland Navigation District 2019)
 - In situ oyster setting for stock enhancement and restoration purposes (SG 2019)
 - Analysis of recreational angler information sharing networks (NOAA Fisheries 2019)
 - Economics of marine baitfish aquaculture (NMFS SK 2017)

Andrew Ropicki (2)



- Ideas for WDC4004 (Sep. 2021-26)
 - Economics of offshore (netpen/cage aquaculture)
 - Risk analysis of small scale aquaculture production/Evaluation of impediments to U.S. aquaculture growth
 - Economic contributions of aquaculture on local communities
 - Economic feasibility of copepod aquaculture
 - Analysis of rights-based management program attributes across fisheries - what works and what doesn't
- Upcoming funding opportunities
 - NOAA Sea Grant: Addressing Economic and Market Needs of the US Aquaculture Industry

Andrew Scheld

Assistant Professor, Department of Fisheries Science,
Virginia Institute of Marine Science, William & Mary



- Research Interests
 - Decision-making and preferences of recreational anglers
 - Costs associated with non-selective harvest in multispecies fisheries
 - Fleet behavior in response to changing environmental/fishery conditions
 - Economic impacts of marine debris and derelict fishing gear
 - Impediments to aquaculture industry growth
- Research Projects (past and present)
 - Economic impacts of wind energy development on commercial fisheries for Atlantic surfclam and Atlantic sea scallop (BOEM 2019, NOAA 2020)
 - Use and non-use of subaqueous ground leases for shellfish aquaculture (VASG 2016; Front. Mar. Sci. 2020)
 - Assessing economic costs of derelict fishing gear (NOAA 2014, NFWF 2019, NOAA 2019; Nature Sci. Rep. 2016; Mar. Pollut. Bull. 2019)
 - Angler preferences & decision-making in Atlantic bluefin tuna and Atlantic cobia recreational fisheries (NOAA SK 2015, VMRC 2017; N. Am. J. Fish. Manage. 2018, Mar. Policy 2020, Fish. Res. 2020)



Andrew Scheld (2)



- Ideas for WDC4004
 - Socioeconomic barriers to aquaculture growth (broadly defined)
 - Diversification within and outside of commercial fisheries (including aquaculture) to enhance community stability & resilience
 - Marine plastic pollution & ghost gear drivers, impacts on fisheries and aquaculture, solutions
 - Conflict/externalities between fisheries, aquaculture, and other sectors (e.g., wind energy)

Melva Treviño Peña

Assistant Professor
Department of Marine Affairs
University of Rhode Island



Research interests:

- Human dimensions of fisheries
- Small-scale fisheries
- Sustainable seafood systems
- Resource use and property regimes
- Cultural, emotional, and spiritual attachments to natural spaces

Previous research:

- Socio-cultural and gendered impacts of shrimp aquaculture development in northern Ecuador

Current projects:

- Uses of and accessibility to coastal resources among different ethnic and racial groups in Rhode Island
- Community-driven ecotourism in coastal Ecuador: Creating alternative livelihoods for subsistence shellfish gatherers



Melva Treviño Peña

Ideas for WDC4004

- Diversifying local seafood diets and markets as a means to increase food security
- Social carrying capacity of emergent aquaculture industries
- Equitable aquaculture development

Frank Asche

Professor of Natural Resource Economics
Institute for Sustainable Food Systems and School of
Forest Resources and Conservation
University of Florida

Editor, Aquaculture Economics and Management

- Research Interests
 - Seafood markets
 - Aquaculture production
 - Seafood trade and supply chains
 - Fisheries Management
- Research Projects (past and present)



Brian Szuster

Associate Professor
Department of Geography
University of Hawai'i



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1. Research interest

- Aquaculture management
- Shrimp farming in SE Asia
- Community supported fisheries and aquaculture
- Marine and coastal tourism
- Environmental impact assessment

2. Projects

- Climate change adaptation for fisheries and aquaculture
- Management issue at West Hawai'i Manta Ray Dive sites
- Marine recreation at the Molokini MLCD
- Coastal and estuarine land conservation plan for Hawai'i
- Small island planning in Thailand
- Coastal Society of Hawai'i

Kirsten Leong

Social Scientist
NOAA Pacific Islands Fisheries Science Center



NOAA
FISHERIES



1. Research interests

- a. Risk perception/risk communication
- b. Conservation marketing/community-based social marketing
- c. One Health (human, wildlife, and environmental health)
- d. Stakeholder engagement

2. Research Projects (Past and Present)

- a. [Media portrayal of offshore aquaculture in the Pacific](#)
- b. [Encouraging safe wildlife viewing](#)
- c. [Seascape of compliance in U.S. Pacific islands fisheries](#)
- d. [Human well-being and cultural ecosystem services](#)
- e. Noncommercial fishing, including [cultural fishing](#) and traditional ecological knowledge

Attachment B: From most recent proposal draft

Title: Marketing, Trade, and Management of Aquaculture and Fishery Resources

Objectives:

1. Marketing, Niches, and New Products
 - Improve the development of seafood markets by focusing on analyses of new marketing themes, market niches, and alternative seafood products.
2. Production Support for Dynamic Markets
 - Enhance fishery and aquaculture production efficiency by developing decision support tools that integrate management and marketing.
3. Impacts of Regulations, Industry Organization, and Infrastructure
 - Increase the organizational and institutional efficiency of the aquaculture and fishery sectors by analyzing the regulatory and/or infrastructure environment and developing ideas to support these sectors.

Methods:

Objective 1. Marketing, Niches, and New Products

1. Expanding market opportunities for aquaculture through the local food system
2. Consumers' preference for genetically modified seafood and the impact of labeling
3. Examining the economic feasibility of new aquaculture production practices and species

Objective 2. Production Support for Dynamic Markets

1. Development of aquaculture industry in Guam
2. Increasing production efficiency of the shrimp fishery
3. Analyzing the decision to enter the rights-based management fishery

Objective 3. Impacts of Regulations, Industry Organization, and Infrastructure

1. Efficient allocation of coastal leasing for shellfish aquaculture
2. Impacts of regulatory and external shocks to small-scale coastal communities
3. Rights-based system and imperfect quota market

Potential additions

- Community supported fishery/aquaculture
- Marine debris/pollution/ghost gear
- Economics of net-pen/cage aquaculture
- Climate change impacts
- Recreational fishing sector
- Tourism

Attachment C: Proposed topics for the new proposal

Aquaculture in the US

1. Community impacts/involvement (Andrew R.)
 - a. Increasing economic resilience of rural and coastal communities
2. Social carrying capacity
 - a. Media coverage affecting public perception
 - b. How to communicate with stakeholders (positive/negative)
3. Market impacts (Kuan, Frank)
 - a. Price impacts on wild-caught fisheries
 - b. Or replace 'imports'
4. Disease risks
5. Impediments to growth
 - a. Local community preference (Andrew S., Kirsten, Kuan)
 - b. Conflicts with other sectors (wild fishery, rec fishery, cultural fishery, tourism etc.) (Melva, Kirsten)
 - c. Regulations on aquaculture operation
 - i. Cost of regulations
 - ii. Benefit of regulations

Local (sea)food system

1. Diversifying (production) and consumption (species) (Melva, Kirsten)
 - a. Mainstreaming underutilized fish
 - b. New species/non-mainstream aquaculture industries (Andrew R., Hiro)
 - c. Food security (less reliance on imports)
 - d. Increasing local economic resilience
2. Tapping ethnic & racial minority/immigrant communities to boost demand (Melva)
3. Community supported fishery
 - a. Should be "community supported seafood", if include farmed seafood
4. CSF and "triple bottom line" assessment (UH) -- sustainability

Marine and Great Lakes debris/pollution (Kwamena; Hiro, Andrew S.)

1. Microplastic in fish
2. Recreational fishing sector
3. Impacts of ghost gear (Andrew S.)
 - a. Competing with live gear; Ecological impacts; Opportunity cost for other fisheries
4. Risk perception with respect to (micro)plastic pollution in seafood (Kirsten-could be folded in with larger risk perception?)
5. Is awareness of marine debris just reducing demand for seafood?

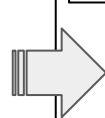
Labeling certification of seafood (Frank, Brian, Kirsten, Hiro)

1. Cost of having multiple labels in the market (both wild-caught and aquaculture)
2. Benefit of a single, government-backed label (like USDA Organic label)
3. Label/certification for "organic" farmed seafood by US entity

Advancing the U.S. Aquaculture Sector: Opportunities, Overcoming Impediments, and Assessing Impacts

Market Demand for Farmed Seafood

- 1) Consumer perceptions of farmed seafood benefits:
 - Food security (less imports)
 - Alleviate pressure on wild stocks
 - Difference b/w seafood vs. bait fish?
- 2) Aquaculture and the local food movement:
 - is locally farmed seafood more “acceptable”?
 - Can CSF include aquaculture? (community supported seafood)
- 3) Market substitutions among:
 - Local farmed / wild seafood
 - Domestic farmed / wild seafood
 - Imported farmed / wild seafood
- 4) Effect of labeling on credence attributes
 - Organic / Local / non-GMO



Community Impacts

- 1) Assessing social carrying capacity: Space-use conflicts vs.
 - Wild-caught/commercial fisheries
 - Recreational fishing
 - Cultural fishing
 - Non-fishing use of coastal areas/waters
- 2) Resilience to external shocks
 - Conditions for this to be true?
 - Do communities value this?



3.5) Impact on wild-caught fisheries via market

Regulations Impacts

- 1) Baseline information/data on what is working / not working
 - Types of regulations
 - Nature of conflicts and issues
- 2) Lessons for “good” regulations
 - Assessing the benefit of regs

Aquaculture of interest for this project:

- Net pen (finfish)
- Shellfish
- Seaweed
- Marine and Great Lakes
- Macrobrachium (land-based, potentially organic, crustacean)

Some thoughts needed for land-based aquaculture (should be possible to include?)