Summary Notes of Regulatory Work Group Discussions

Seaweed Symposium, March 2-4, 2020

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Day 1: Generate big picture challenges and opportunities

Objective: Generate big picture challenges associated with the regulatory workgroup. Participants given 5 minutes to think about 3 top challenges from the regulatory prospective.

- Different policies between Corps districts (variability).
- NSSP rules are not uniform from state to state.
- Allowing for geneotype introductions to enhance species.
- Conflicting uses (temporal nature, activity, structures).
- Zoning.
- Potential impacts to protected species (whales, salmon).
- Every state is different, different agencies and processes. Locating farm has big impact on who will be regulating.
- Multiple interests, conflicting uses.
- Lack of regulator knowledge, awareness and understanding of seaweed growing and how to manage it.
- Public perception of aquaculture.
- Increased scrutiny of aquaculture versus wild harvest.
- Competition with wild harvesters.
- Entanglements.
- Reaching critical mass.
- Need to establish food safety reciprocity across the US.
- Lack of federal guidance for food safety – no background levels, understaff and funded state agencies to develop.
- Differences among regulators – some are good, some are bad. Have to weigh moving industry forward while balancing other uses.
- Need for robust regulatory structure to protect industry.
- Lack of information to provide to prospective farmers.
- Lack of information on processing and lack of standardization.
- Finding out/understanding/identifying what the food safety hazards are.
- Climate change.
- Regulations for raw v. processed.
- Understanding requirements for imported products.
- Understanding genetic populations of aquaculture products.
- Entanglements (presumption that anything in the water presents a risk) – how to prove a negative.
- Lack of efficient communications across regulatory agencies (federal between Corps and others).
- Monitoring requirements (extensive and some based on shellfish).

- Location – where is it going to be, nearshore/offshore, farms not always placed where there are adequate nutrients.
- Climate change (location, stocks).
- Lack of established markets.
- How do you create a framework for nutrient offsets, develop program?
- Understanding cumulative impacts.

Objective: generate big picture opportunities associated with the regulatory workgroup. Participants given 5 minutes to think about 3 top opportunities from the regulatory prospective.

- Huge opportunity for marketing.
- Having state department of agriculture to regulate instead of fisheries.
- Engaging with people in the hub to work collectively.
- Looking to other products such as saffron and hemp to see if other industries can inform developing a food safety policy framework for seaweed.
- Developing feedback mechanism between growers/regulators/processors.
- Sharing state-to-state feasible now because small group of stakeholders.
- Knowledgeable workforce (sharing resources).
- Diversification of product lines –for oyster growers and others, helps with user conflicts.
- Working waterfront legislation (Pingree's office) – retaining waterfronts for traditional industries.
- Risk management – mitigate risk of harvest collapse.
- Nutrient offsets.
- Opportunity to offset externalities of traditional land-based ag.
- Economics – making money, commerce, new markets. Local economies, providing jobs for small communities.
- Opportunities to move into new areas as other uses transition.
- Seaweed as a buffer if other fisheries have trouble (Dungeness crab).
- Very nutritious, domestically produced product.
- Zoning/marine spatial planning – developing zones to permit seaweed and reduce conflicts.
- Marketing sustainability of product/industry.
- Overseas markets.
- Processing to expand markets or shelf live.
- USDA responsibility for algae (crop)?
- Corps NWP for seaweed?
- Establishing markets, permitting around processing facilities. Seasonality of the product is a challenge, but opportunity to overlap with other seafood.
- Bringing all products under the same regulatory framework makes processing easier to comply with rules. Shared space processing facilities, cooperative models with professional staff.
- Developing and providing nutritional info on products – expensive for grower/processor to do these studies themselves.
- Programmatic-scale reviews among feds.

- Interacting with food safety/nutritional university programs to conduct research.
- Increased coordination and communication among feds.
- What will offshore framework look like?
- Providing helpful tips/outreach.
- Learning from Korea regarding their safety standards – include Korea SG partnership, Joint Panel on SG.
- Entanglement simulator in development.
- Climate change.
- Reaching critical mass to spur development of regulations.
- Genetics – selective breeding for perfect product or diversity of strains to avoid problems with traditional crops. Help to deal with climate change.

<u>Day 2</u>: Develop a Work Plan

Session #1 Objective: Identify short and long-term priorities

Group decided that short-term would be defined as goals that could be accomplished within the timeframe of the Hub (3 years). Long-term would be anything beyond that.

The facilitators presented a consolidated list of challenges and objectives from Day 1. The group engaged in a round of voting to identify short- and long-term objectives. The consolidated list is presented below, with the voting results. (Voting key – blue dots were short-term, green dots were long-term).

Challenges:

- Multiple regulatory jurisdictions on both state and federal level. Policy variability and lack of efficient communication across agencies. (5 blue, 5 green. *Selected as both short- and long-term priority.*)
- Potential impacts to protected species (e.g., entanglements, habitat impacts). Cumulative impacts. (3 blue, one green. *Selected as short-term priority.*)
- Conflicting uses (temporal nature, activity, structures) and existing zoning. (1 blue)
- Location –nearshore/offshore, farms not always placed where there are adequate nutrients. Impact of climate change.
- Lack of regulator knowledge, experience of industry. Many current requirements based on shellfish (application of NSSP, monitoring requirements.
- Need for robust regulatory structure to protect industry.
- Lack of information to provide to prospective farmers. Lack of information on processing and lack of standardization. (1 blue, 2 green)
- Public perception of aquaculture. Increased scrutiny of aquaculture versus wild harvest. (2 blue, 3 green. *Selected as long-term priority.*)
- Competition with wild harvesters.
- Reaching critical mass. Lack of established markets. (1 blue)

- Lack of knowledge/research of food safety hazards. Lack of federal guidance for food safety. Need to establish food safety reciprocity across the US. (10 blue, 9 green. *Selected as both short and long-term priority.*)
- Need to understand genetic populations of aquacultured species. Allowing for geneotype introductions. Impact of climate change. (1 green. *Selected as long-term priority when combined with voting on opportunities related to genetics.*)
- Understanding requirements for imported products. (1 blue)
- How do you create a framework for nutrient offsets, develop program? (2 blue, 6 green. *Selected as both short- and long-term priority when combined with voting on opportunities related to offsets.*)

Opportunities

- Research to answer key questions. (1 blue)
- Ability to generate nutrient offsets. Opportunity to offset externalities of traditional land-based ag (2 blue, 2 green. *Selected as both short- and long term when combined with voting on challenges related to offsets*.)
- Economics – making money, commerce, new markets. Local economies, providing jobs for small communities. (1 blue)
- Marketing sustainability of product/industry. (1 blue)
- Reaching critical mass to spur development of regulations.
- Markets oversees.
- Opportunities to move into new areas as other uses transition. Seaweed as a buffer if other fisheries have trouble (Dungeness crab). Climate change.
- Zoning/marine spatial planning – developing zones to permit seaweed and reduce conflicts. Site-suitability studies.
- Learning from the mistakes of other nations and industries. Peer-to-peer learning among regulators. Sharing state-to-state feasible now because small group of stakeholders. Learning from Korea regarding their safety standards – include Korea SG partnership, Joint Panel on SG.
- Opportunity to influence policy as it is being developed. Developing feedback mechanism between growers/regulators/processors. Knowledgeable workforce (sharing resources). Providing helpful tips/outreach.
- Establishing markets, permitting around processing facilities. Seasonality of the product is a challenge, but opportunity to overlap with other seafood. Bringing all products under the same regulatory framework makes processing easier to comply with rules. Shared space processing facilities, cooperative models with professional staff. (8 blue, 7 green. *Selected as both a short- and long-term priority.*).
- Working with existing industries to support interest in infrastructure (dredging, ports) by increasing total landings. Working waterfront legislation (Pingree's office) – retaining waterfronts for traditional industries. (2 blue, 2 green)
- Risk management – mitigate risk of harvest collapse.
- Entanglement simulator in development.
- Very nutritious, domestically produced product. Transparency can help drive growth.
- Diversification of product lines – as well as for oyster growers and others, helps with user conflicts.

- USDA responsibility for algae (crop).
- Identifying efficiencies in the permitting process. Programmatic-scale or regional reviews. Increased coordination and communication. What will offshore framework look like? (2 blue, 1 green)
- Developing and providing nutritional info on products – expensive for grower/processor to do these studies themselves.
- Genetics – selective breeding for perfect product or diversity of strains to avoid problems with traditional crops. Helps to deal with climate change. (3 green. *Selected as long-term priority when combined with voting on challenges related to genetics.*)

Session #2 Objective: Developing Goals and Objectives for Identified Priorities

The suggested time frame for tasks is provided in parenthesis- short, medium, or long.

Multiple Jurisdictions/Permitting Efficiencies for Lease Site

- Increased coordination between states.
- Understanding how the federal government is involved.
- Communicating value of pre-application meetings.
- Developing baseline criteria for siting decisions across agencies.
    - Task: Compilation of baseline from what states are already doing. Siting decisions have been emphasized (med).
- Mechanism for inventory and sharing of agency resources for seaweed permitting
    - Listing available resources (building off work underway by NMFS in NE).
    - Analyzing whether resources are relevant for seaweed.
    - Task: survey to gather information to enhance/build off state of the states (short).
        - POC, permits needed, systematic questions, # of commercial farms

Protected Species

- Supporting development of simulator tool for evaluating entanglement risks for whales, rigid backbone species. Sharing diagrams, gear info with developers to improve data in model with relevance to seaweed farmers.
    - Task: inquire with advisory board if there is interest in additional information (short).
- Understanding/characterizing what interactions with other protected species beyond whales (birds, turtles, forage fish).
- Developing a model for observing interactions with protected species (citizen science, protocols, tools, apps), potentially could be permitting requirement.
    - Task: develop template, citizen science protocol for documenting observations on interactions of seaweed farms with protected species (long)
- Characterizing ecosystem benefits of farms to protected species.

Public Perceptions

- Low public awareness of how stringent the process is. Transparency to help other industries understand. Outreach to the fishing community on what is involved in starting up aquaculture.
    - Potential venues for outreach:

        - Community meetings? Fishery commission meetings?
        - Taped public meetings that could be a resource for the community.
- Guidance documents to help potential growers going through the process of getting a farm up and running and how to properly engage the public. BMPs include:
    - Starting early, engaging communities
    - Anticipating potential areas of concern
    - Sharing lessons learned
    - Public relations and building good will
    - Farm tours, farmers markets, working with schools
    - Tying to local economies
- Develop BMPs for practices that the public would be most concerned with.
    - Develop solid performance metrics to get bad growers out of the equation.
- Work on public relations/community good will with the community through clean-ups, etc.
- Discussing best ways to convey information (is YouTube better than webinars, etc.).
- Task: Compile what's out there already (short), adapt materials to seaweed (med).
    - Guidance on how to interact with public, working document built by group. Look at models from shellfish (ECSGA), encourage states to share.

Food Safety Hazards

- Facilitate dialogue with FDA CSFAN re: developing model document/guidance (with NSGLC parallel project).
    - Task: serve on advisory committee for NSGLC project, participate in webinars, review documents (med).
- Adapt new CT HACCP model document to ease use in other states.
    - Task: Develop sanitation guidance for seaweed, standard operating procedures to share on Seaweed Hub website (med).
- Communicate need for continued/expanded support for Seafood HACCP alliance.
- Comprehensive hazard analysis – develop research agenda to characterize/identify and fill/address gaps in hazard assessment.
- Identifying and hosting training opportunities for seaweed – such as ServSafe (https://www.servsafe.com/), others.
    - Task: ID training resources (short)

Genetics

- Understanding genetics to assist with permitting or reviewing potential impacts of projects.
    - What selective breeding do you want? ID native, non-native species.
    - Task: Develop research needs lists (med).

Establishing Nutrient Offsets

- Research needed to understand uptake of nutrients by seaweed (Inc. different species).
    - Task: compile list of research needs, considerations, and regulatory benefits; priorities for funding; what questions need to be answered? (med).
    - Task: literature review to understand what research exists for seaweed (short).
- IMTA (benefits, nutrient balance).

- Developing mechanism for recognizing the benefit/offset within trading programs or other incentive programs (paying farmers for benefit).
- Identifying metrics that are functional for farmers that fit within standard practices.

Establishing markets, permitting around processing facilities.

- Research markets/cooperative models.
  - Identify case studies.
  - Opportunity to learn from Local Catch network.
- Understanding minimum needs for processing/kitchens for seaweed.
  - Existing shared spaces, incubators aren't set up right.
  - ID what equipment might be needed, publish case studies.
- Nutritional information not available, regulatory requirement to put on label on processed food (not paid by growers).
- Model HACCP for processing in context of manufactured food product (post-harvest).
  - Task: guide/decision tree on how to get to marketable product. Why am I growing? If food, now what? Audience would be growers (short).

Session #3 Objective: Identifying regulatory objectives, timelines, tasks, etc.

Multiple Jurisdictions/Permitting Efficiencies for Lease Site

- Survey (short)
  - Collect information on point of contact, department, what permit is required
  - Commercial v. research farms
- Compilation of baseline requirements for siting requirements (medium)
  - Water depths, type of habitat, etc.

Protected Species

- Additional design models for entanglement model (short)

Public Perception

- Navigating the permitting process for seaweed (short)
  - Collect information to post on Seaweed Hub website.
  - Pull from documents for shellfish (short)
    - East Coast Shellfish Growers Association and others may already have resources.
  - Adapt to seaweed (medium)

Food Safety Hazards

- Sanitation guidance (medium)
  - Guidance documents, BMPs for sanitation
- Identifying existing training and/or host regional trainings (short)
  - Identifying existing training and programs
    - Produce safety alliance, HACCP alliance
- Collaborate with NSGLC on food safety grant (short/medium)
  - Webinar series
  - Advisory committee

    - Compilation Reviewers

Genetics

- Research needs list (medium)
    - What characteristics to help pick right stock- selective breeding component
    - Test for invasive species as they develop
    - What is the correct amount of broodstock?

Establishing Nutrient Offsets

- Research needs list (medium)
    - Development of practical considerations
    - Literature review- place documents on the seaweed hub website
- Trading models (long)

Establishing markets, permitting around processing facilities

- Model HACCP for Processing (medium)
    - Meant to help get a manufactured food permit
    - CT for production, transport, storage
    - Task:
        - Identifying hazards for processing steps
        - Needs to cover packaging, temperature controls, etc
        - Create guide, decision tree on how to get seaweed to a marketable state

Final Session: Planning for the Virtual Workgroups

- Facilitators will initially send follow-up email with summary of discussions.
- Conference call after symposium to get organize. Review priorities and tasks, form subgroups for each task. Subgroups will meet as needed.
- Quarterly conference call for work group to check in and share progress.