AQUACULTURE III

3. WEEK

Aquaculture: Innovation and Social Transformation

WEEKLY TOPICS

Week	Topics
1. Week	Aquaculture Science and Aquaculture Engineering
2. Week	Aquaculture: Economic and Environmental
3. Week	Aquaculture: Innovation and Social Transformation
4. Week	Aquaculture: Food Ethics
5. Week	Shellfish Aquaculture and the Environment
6. Week	Advances in aquaculture hatchery technology
7. Week	Recirculating Aquaculture
8. Week	Selection and Breeding Programs in Aquaculture
9. Week	Ecological and Genetic Implications of Aquaculture Activities
10. Week	Aquaculture: Biotechnology
11. Week	Aquaculture nutrition: gut health, probiotics, and prebiotics
12. Week	Mucosal Health in Aquaculture
13. Week	Off-Flavors in Aquaculture
14. Week	Sustainable Aquaculture Techniques

Aquaculture: Innovation and Social Transformation

- animal welfare;
- knowledge management and intellectual property;
- environmental sustainability;
- local, traditional, and aboriginal knowledge;
- consumers;
- and integrated coastal zone management.

Culver, K., & Castle, D. (Eds.). (2008). Aquaculture, innovation and social transformation (Vol. 17). Springer Science & Business Media.

Aquaculture: Innovation and Social Transformation

- So what is an aquaculture innovation? Examples include technologies that mitigate the occurrence of animal diseases or parasites, or that reduce or eliminate the use of antibiotics to treat animals; technologies that improve production efficiencies at the hatchery or farm levels while mitigating environmental impact; advances in offshore or land-based recirculation technology; novel feed ingredients; reductions in carbon footprint through improved energy efficiency or regeneration; and social programs designed to improve living and working conditions at the farm or processing levels. The competition is as diverse as the industry itself, as its five recipients represent four different products (aquafeed, Atlantic salmon, Pacific white shrimp and freshwater shrimp) and five different countries (United States, Norway, Brazil, Chile and Israel).

https://www.aquaculturealliance.org/blog/what-is-an-aquaculture-innovation/

The Fisheries and Aquaculture Innovation Platform (FAIP)

- A platform connecting researchers and policy makers
- The platform is a source of information on innovation in OECD countries, identifying policies, research centres, projects and plans. You can use it to connect with potential research partners across the OECD or simply to learn more about what is happening in fisheries innovation.
- It also provides indicators that characterise innovation systems: qualitative indicators, which focus on policy and institutional settings, and quantitative indicators related to the performance and impact of policies that are quantitatively measurable.

http://www.oecd.org/fisheries-innovation/about/

The Fisheries and Aquaculture Innovation Platform (FAIP)

- The Fisheries and Aquaculture Innovation Platform (FAIP) is an initiative developed by the OECD in 2015. Over the next few decades, population and income growth, together with urbanisation and dietary diversification, are expected to create additional and greener demand for fish products. To meet these needs, fish production has to be efficient without harming the environment or using natural resources irresponsibly. It is essential to establish new patterns of production and consumption in order to help decouple growth from natural capital. The OECD green growth strategy highlights the role of innovation in underpinning sustained growth and giving rise to new economic opportunities.

http://www.oecd.org/fisheries-innovation/about/

The Fisheries and Aquaculture Innovation Platform (FAIP)

- Towards Green Growth (2011), points out that “Green growth means fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies (…) to do this it must catalyse investment and innovation”. The 2015, the OECD Innovation strategy reaffirms that innovation, which involves the creation and diffusion of new products, processes and methods, can be a critical part of the solution for green growth. While innovation is not a goal in itself, it provides the foundation for new businesses, new jobs and productivity growth this in turn creates resilient and adaptable economies.

http://www.oecd.org/fisheries-innovation/about/

The Fisheries and Aquaculture Innovation Platform (FAIP)

- Governments play a key role in fostering a sound environment for innovation, by developing policy frameworks that enhance policy coherence, investing in innovation, empowering people to innovate, helping firms overcome barriers to innovation, facilitating the role of knowledge diffusion and ensuring that innovation contributes to key goals of public policy.
- A number of countries have agencies or platforms that have been established to promote national innovation; however, no such organisation exists at the international level on fisheries and aquaculture broad topics. The OECD has a comparative advantage in creating a knowledge base on innovation in the fisheries and aquaculture sectors, enabling stakeholders to bring together different types of expertise, experience and interests across the globe. Complex natural resource management problems involve interactions and trade-offs at different levels including the International level.

http://www.oecd.org/fisheries-innovation/about/

The Fisheries and Aquaculture Innovation Platform (FAIP)

- This platform is dedicated to innovation in fisheries and aquaculture sectors which are divided into five main areas:
- Harvesting or fishing technologies such as more effective ways to find or harvest fish and which are typically associated with improvements in catch per unit of effort (for example: type/size of vessels and their methods of propulsion, search technologies, method of catching or harvesting fish and bringing them on board)
- Conservation technologies such as devices that reduce by-catches or the impacts of fisheries on marine habitats. Conservation technologies can be associated with monitoring and information that measures, controls and monitors the direct harvesting impacts (VMS, video monitoring, etc.) or with the improvement of information, data on the life history, movement and abundance of marine populations and the quality of their habitat
- Aquaculture technologies are defined as methods to more effectively grow fish in captivity (innovation in feeds, improving the health of aquaculture animals, etc.)

http://www.oecd.org/fisheries-innovation/about/

The Fisheries and Aquaculture Innovation Platform (FAIP)

- New products & markets such as the development of new fish products and markets (food technologies/processing such as the development of surimi as a crabmeat substitute) and the improvement of market access (secure or enlarge markets for fish products) that provides important incentives for green growth (for example: eco-certification with fishers adopting by-catch saving technologies or modifying fishing practices and/or territorial user rights in fisheries.)
- Institutional innovation which is intended to improve how fisheries are managed in order to help mitigate market failures and to better deliver on desired outcomes of management, such as ecosystem based fisheries management. This takes into account the myriad of policy initiatives that internalise the external costs of actions by fishers (output control, fishing quotas, etc.) such as market design (incentives payment, regulatory threats, etc.), policy innovation with information collection, dissemination and evaluation. It regroups most of the present activities of fisheries scientists such as information sharing on individual and fleet fishing behaviour as an emergent public good valuable to regulators, the industry and consumers. This can also help align private incentives with public interest such as marine spatial planning, etc. Institutional innovation can also be related to strategic planning, coordination and enforcement tools especially activities of fisheries managers with a green growth goal setting and priority planning along with measures to encourage and/or enforce product and process innovations.

http://www.oecd.org/fisheries-innovation/about/

Aquaculture: Innovation and Social Transformation

Report underlines the value of aquaculture innovation

https://thefishsite.com/articles/unveiling-the-value-of-aquaculture-innovation

FISHERIES AND AQUACULTURE TRANSFORMATION AGENDA

http://www.gcp21.org/Ibadan/Day1/Adegobe_O_FisheriesAquacultureAgenda.pdf

Industrial transformation and shrimp aquaculture in Thailand and Vietnam: pathways to ecological, social, and economic sustainability?

https://www.ncbi.nlm.nih.gov/pubmed/12174602

Aquaculture: Innovation and Social Transformation

Transformation from Rice Farming to Commercial Aquaculture in Bangladesh: Implications for Gender, Food Security, and Livelihood

http://journals.sagepub.com/doi/pdf/10.1177/0971852415618747

Digital Transformation in Aquaculture - a key to productivity, transparency and traceability

https://www.seafoodsource.com/webinars/digital-transformation-in-aquaculture-a-key-to-productivity-transparency-and-traceability

How is Shrimp Aquaculture Transforming Coastal Livelihoods and Lagoons in Estero Real, Nicaragua?: The Need to Integrate Social–Ecological Research and Ecosystem-Based Approaches

https://repository.asu.edu/attachments/142806/content/LagoonsPaperEnvManagement_Benessaiah_postreview.pdf

- References

- Regional Review On Status And Trends In Aquaculture Development In Europe – 2015, Fao Fisheries And Aquaculture Circular No. 1135/1 Fiaa/C1135/1 (En)
- The State Of World Fisheries And Aquaculture 2016, Fao. 2016
- Advances In Aquaculture Hatchery Technology 2013, Woodhead Publishing Series In Food Science, Technology And Nutrition: Number 242
- Aquaculture: An Introductory Text, 2005, Robert R. Stickney
- Aquaculture Farming Aquatic Animals And Plants,2012, John S. Lucas