OFFICIAL FEEDBACK FORM



DIALOGUE DATE	Wednesday, 30 June 2021 14:00 GMT +02:00
DIALOGUE TITLE	Aquaculture: Can it sustainably feed the world?
Convened by	Oliver Fredriksson - Editor at FoodUnfolded, EIT Food
DIALOGUE EVENT PAGE	https://summitdialogues.org/dialogue/14085/
DIALOGUE TYPE	Independent
GEOGRAPHICAL FOCUS	No borders

The outcomes from a Food Systems Summit Dialogue will be of use in developing the pathway to sustainable food systems within the locality in which they take place. They will be a valuable contribution to the national pathways and also of interest to the different workstreams preparing for the Summit: the Action Tracks, Scientific Groups and Champions as well as for other Dialogues.

1. PARTICIPATION



NUMBER OF PARTICIPANTS FROM EACH STAKEHOLDER GROUP

2	Small/medium enterprise/artisan		Workers and trade union
2	Large national business		Member of Parliament
4	Multi-national corporation		Local authority
	Small-scale farmer		Government and national institution
1	Medium-scale farmer		Regional economic community
	Large-scale farmer	2	United Nations
2	Local Non-Governmental Organization	1	International financial institution
4	International Non-Governmental Organization	1	Private Foundation / Partnership / Alliance
	Indigenous People	2	Consumer group
14	Science and academia		Other

2. PRINCIPLES OF ENGAGEMENT

HOW DID YOU ORGANIZE THE DIALOGUE SO THAT THE PRINCIPLES WERE INCORPORATED, REINFORCED AND ENHANCED?

We recruited stakeholders from varying backgrounds to discuss solutions based on their professional knowledge and/or personal experience. To accommodate for global perspectives, we organized the dialogue at a time we deemed most suitable to allow participants from different time-zones. In selecting participants, we considered cultural, geographical, and language challenges, and included these considerations in the shaping of discussion group diversity - creating groups where perspectives and agendas may be contrasting. Given the breadth of topical points relevant to the answering of our key question - 'can aquaculture sustainably feed the world?', we split the discussion into four areas - each key to its development. By defining group topic focus, we were able to inspire meaningful discussion between cross-sector actors in the industry that are often indirectly involved, but would not normally interact directly around a common topic. We asked every participant to commit to the "practical" outcomes of the dialogue, to only bring solutions that they would themselves be willing to follow through with in practice. We were transparent with participants about the outcome of the dialogues, and explained we would be taking notes according to Chatham House rules, promising to treat comments confidentially and anonymously. We told participants that we would have liked the conversation to be very spontaneous and positive, trying to build on top of each other's ideas respectfully. We also emphasized we didn't want anyone to feel that they didn't have enough expertise to contribute to the conversation – if they had been chosen to be there, it is because we wanted to hear what they had to say.

HOW DID YOUR DIALOGUE REFLECT SPECIFIC ASPECTS OF THE PRINCIPLES?

Act with urgency: We made sure that the conversation focused on the next 3-5 years and revolved around specific realistic and practical solutions. Be respectful: Everyone in the dialogue was encouraged to be respectful of others' perspectives. Every friction and divergence was dealt with under a constructive approach. We promoted food production and consumption policies and practices that strive to protect and improve the health and well-being of individuals, communities, and ecosystems – while at the same time respecting local cultures and contexts. Recognise complexity: Throughout the dialogue, we always recognised that food systems are complex, and closely connected to (and significantly impact) human and animal health, land, water, climate, biodiversity, the economy, and geopolitics. We allowed and encouraged disagreement with proposed solutions and recognised that solutions likely won't be easy to implement. We recognised that solutions were needed on multiple levels, and asked participants to vote on each group's main suggested solutions. Embrace multistakeholder inclusivity: We encouraged conversation between members of different stakeholder groups, and ensured that everyone was always involved in the conversation and invited everyone to express themselves on each topic of discussion. Complement the work of others: We developed our own unique and relaxed style of hosting and recruited expansively across multiple sectors in an effort to stimulate new discussions that would lead to new and actionable solutions. Build trust: We committed to creating a relaxed and friendly atmosphere to build trust and open airing of truthful views. We created a spreadsheet where each participants know that we would send the final feedback report to them, drafted according to Chatham House rules. Participants also know that they might be offered follow-up opportunities with FoodUnfolded to reach our audience about important issues.

DO YOU HAVE ADVICE FOR OTHER DIALOGUE CONVENORS ABOUT APPRECIATING THE PRINCIPLES OF ENGAGEMENT?

We found that adding an interactive element (such as polls) during the plenary session allowed us to stimulate engagement from the very beginning of the event, avoiding a passive atmosphere and inspiring a higher level of attention throughout the Dialogue. Using polls also made it possible to democratically vote on the solutions that the majority of participants thought should take priority.

3. METHOD

The outcomes of a Dialogue are influenced by the method that is used.

DID YOU USE THE SAME METHOD AS RECOMMENDED BY THE CONVENORS REFERENCE MANUAL?

✓ Yes

No

4. DIALOGUE FOCUS & OUTCOMES

MAJOR FOCUS

Despite a longstanding history of development and expansion within Asia, the value and potential of global aquaculture has only recently surged to the forefront of public attention. With the industry's rapid growth in recent decades, current commercial aquaculture practices have drawn scepticism over the environmental, social and ethical impacts of the industry. The key aim of this dialogue was to address whether scientific findings, personal stories and industry insights support or mitigate these concerns. We did this by questioning the limitations of current practices and by identifying new solutions that could aid us in overcoming barriers that presently limit the industry's ability to sustainably expand and offer an economically, socially and environmentally viable means to feed higher and lower socio economic regions.

We aimed to foster a more open and dynamic form of dialogue between sectors and stakeholders that would infrequently interact so candidly, to see if a more relaxed conversational style of discussion could help to gain mutual trust, understanding and ultimately lead to more rounded solutions that could ensure developments in aquaculture meet all actors' respective measures of sustainability.

Given the breadth of the topic, we broke the discussion down into four key areas in order to delve deeper into major areas of topical importance within the industry's development. We addressed key concerns and solutions through the following groups:

1. Products & Practice: This group focussed on whether or not we are currently focussing our attention on producing the right products and using the right methods to do so. Discussion topics were oriented around the proportional roles of researchers, innovators, the public, and policymakers in shaping what we should produce and how we should produce it.

2. The Role of Research, Innovation & Technology: This group focussed on what role research, innovation and technology will respectively play in shaping and facilitating a more sustainable aquaculture industry.

3. Ethical Considerations & Animal Welfare: This group focussed on how to overcome issues relating to value chain inequities, unevenly distributed allocation of knowledge or resources needed to foster sustainable growth of aquaculture, and solutions for improved animal welfare.

4. Aligning Policy For Social & Environmental Solutions: This group focussed on the critical role of policy as both an inhibitor and provider of positive social and environmental progression within the aquaculture industry. This group discussed solutions that could help to better align policy with other sectors in order to facilitate and encourage sustainable movements.

ACTION TRACKS

- Action Track 1: Ensure access to safe and nutritious food for all
- Action Track 2: Shift to sustainable consumption patterns
- ✓ Action Track 3: Boost nature-positive production
- ✓ Action Track 4: Advance equitable livelihoods
- Action Track 5: Build resilience to vulnerabilities, shocks and stress

- Finance✓PolicyInnovation✓Data & EvidenceHuman rights✓Governance
- Women & Youth Empowerment
- Governance
- ✓ Trade-offs
 - Environment and Climate

Participants (particularly those within industry) identified the need for a reference class with which we can compare advancements in sustainability. By outlining a clear standardised and definable metric for social and environmental sustainability, industries could act with more direction and purpose towards better practice. Many participants felt scientific and regulatory uncertainty has made sustainable progress difficult for industry to achieve in practice - regardless of any intention to do so.

Many members agreed that public opinion, awareness, and consumer demand will be key to establishing more sustainable aquaculture practices. To caveat this, it was also broadly agreed that shifting this awareness should be the responsibility of industry, researchers and governments - not solely on consumers to self-educate. By creating streams of reliable, science-based information both on social media and user endpoints (like supermarkets), consumers can be nudged towards the best options.

A number of groups believe that the environment should be the primary and ultimate beneficiary of sustainability focussed developments in aquaculture. By prioritising the environmental aspects of sustainability first, many participants believed there would be longer term beneficial implications for society and economy to follow. Noted - this was contested by some. Regulatory bodies need to create flexible arrangements to accommodate and support industry during this transition to soften any financial burdens accrued by focussing on environment or animal welfare over profit and immediate production.

While the focus of aquaculture research has shifted towards topics that offer solutions to industry, current funding to enable the translation of research into practice is not sufficient to inspire innovator investment. There was a clear desire to realign research with industry and small-scale producers to avoid valuable knowledge 'gathering dust' in archives. We need greater investment on bridging institutions that can connect research with industry to facilitate their conversion into practical solutions for producers.

The fisheries and aquaculture industries are underpinned by a significant degree of mistrust between policymakers and producers - a culmination of decades of disconnected decision making that neglected to award many producers direct input or voice at the decision making table. Because of this, policy for positive innovation has often misaligned with industry needs and legislation (or lack thereof) has caused bottlenecks to innovative progress. Greater linkages and dialogue between these two sectors is needed - communicators and interdisciplinary actors will be integral to bridging this gap.

On a smaller scale, participants acknowledged the need to build capacity for the implementation of technology locally, in a way that is considerate and adapted to the resources available. Technology has to be affordable, attend to local needs and the focus of development and implementation of innovation must remain on creating value for producers if we're going to see innovation adopted in practice. On a broader scale, international bodies (such as the UN) can help by establishing global sustainability standards for production, providing support for developing regions, and by defining clear attainable goals for sustainable aquaculture in those regions.

The capital intensive nature of commercialised aquaculture restricts buy-in from many seeking to farm in 'unconventional' manners - such as in integrated multi-trophic aquaculture (IMTA) systems, or focussed on lower trophic cultivation. More sustainable farming methods need increased support from innovators and researchers in ways that can reduce operational or upfront capital costs in order to create more viable markets and profit margins for producers in this space. This also goes hand in hand with a dire need for greater education amongst the general population about less common but more alternative seafoods (e.g. lower trophic species) to boost market sizes for these products.

Some participants felt that current SDG indicators (e.g. SDG14) are not sufficient to drive change as they are not sufficiently developed yet (especially in aquaculture). Researchers have a responsibility to start working more closely with industry to make indicators that make industrial, ecological and social sense. This must be a transdisciplinary exercise. Conversely, the industry also has work to do in trying to interpret their business activities in SDGs.

Current feed options are incredibly cheap and are outcompeting innovation. There is a need for legislation to enable the creation of markets for competition between innovators, instead of between innovators and current 'conventional' feed providers. Legislation could create this market by enforcing periodic annual or bi-annual incremental increases in sustainable production. For example: regulations stipulating that this year, 1% of fish production should be 100% 'sustainable', and this percentage should increase over time. We cannot ask industry to volunteer for more expensive alternatives as the likelihood for adoption is low.

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		1	Environment and Climate

Discussion group 1: Product & Practice

The group talked about developments in sustainable aquaculture practices, the challenges that inhibit their regional or international success, and the policies needed to reduce or remove these inhibitions. Factors that heavily influence the development and efficiency of sustainable aquaculture practices were noted as: type of species, type of feed, and financial and legislative incentives (or lack thereof) to pursue more sustainable means of production.

The participants also discussed the need for policymakers to align legislation more closely with both innovator and industry demands in order to free up markets for sustainable alternatives to compete with current practices. Aligning these legislations with practical solutions would require more dialogue between the private sector and government.

Additionally, the group highlighted the importance of alternative feed sourcing as a key factor for reducing environmental impacts. Promoting increased production of lower trophic or passive feeding species (e.g. bivalves or seaweed) through increased consumer awareness programmes or legislative incentives could shift focus away from more resource reliant fed species (e.g. finfish) and open space for 'no-input' alternatives.

Overall, the group identified six possible solutions to promote the development and adoption of more sustainable aquaculture products and practices:

1. Explore restorative and multi-trophic integrated aquaculture (IMTA) systems: More financial and legislative incentives for researchers and innovators to explore scalable solutions in circular and restorative aquaculture practices.

2. Prioritise feed innovations: Alternative feeds and tighter regulation on sourcing of current feed options could offer significant reductions for the industry's footprint.

3. Legislation must protect aquaculture investors, guaranteeing their use of allotted land or water for long periods: In many regions, there is a significant lack of aquaculture legislation which results in excessive delays for investors or prospective farmers to enter the industry. International assistance from industry experts could be useful to guide regional legislators to reduce entry barriers, and promote sustainability measures in early legislative frameworks around aquaculture.

4. Third-party sustainability reporting for the entire food system: Mandatory third-party sustainability reporting could dictate a particular producer's available government subsidisation level and offer investors a standardised sustainability indicator prior to investment.

5. Create a market for innovation with legislation. Legislation that enforces industry adoption of sustainable alternatives could create a market for innovators to compete against each other rather than against more financially attractive, often cheaper and less sustainable options.

6. Increase support for cluster organisations for small-scale and artisanal farmers. Clusters of small-scale farmers allows artisanal producers to group and gain better deals on feed, resources (boats, nets, warehouses etc.) or technology, and would ensure individual producers are accountable to the same sustainability standards as other members of the cluster. Additionally, this would grant smallholders a more cohesive and powerful position as shapers of future policy or regulation within the industry.

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KEYWORDS

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OUTCOMES FOR EACH DISCUSSION TOPIC - 2/4

Discussion group 2: Role of Research, Innovation & Technology

In this discussion group, the participants agreed that current innovation and technological advancements in aquaculture are largely driven by 'luxury' fish producing sectors within the industry (e.g. Salmon). The group also identified a clear challenge in translating these innovations to meet diversity of species, practices and scale in other corners of the aquaculture industry where markets are less consolidated around a few key species.

The group also noted a need for improved links between research and innovation which could be met by increased emphasis on accelerator initiatives (e.g. HATCH or Aqua-Spark). The private sector was noted as a key actor responsible for aiding the facilitation of increased conversion of research into practice - potentially by creating and using pooled industry research funds.

The group also discussed the responsibility of innovators to focus on solutions that offer value to producers, rather than costs. Focussing innovation efforts around improved animal welfare or reductions in environmental footprint will not be adopted within industry unless regulations enforce their implementation, or they offer producers value to enhance their competitive edge at market. To increase markets for more sustainable products or alternatives, the group also acknowledged the role of educators and communicators in providing the general public with a greater depth of understanding about products and practice, with the aim of creating space for new markets and increasing acceptance of 'novel' alternatives.

Overall, the group identified three possible solutions to promote the development and adoption of more sustainable aquaculture products and practices:

1. Develop innovations that add value to producers: Adoption and implementation of sustainability oriented innovation could be improved by placing greater emphasis on producing solutions that add value to producers, not only environment or animal welfare.

2. Improve industry-research links: Innovators and entrepreneurs need greater access to 'accelerator' initiatives that can facilitate the conversion of research into practice.

3. Create new markets: Create new markets for sustainable alternatives or different aquaculture products via educational programmes and transparent production narratives.

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Discussion group 3: Policy For Social & Environmental Solutions

The group agreed that there is no current universal or standardised definition of sustainability, nor a globally specified set of guidelines that could guide legislators, producers or innovators. Added clarity around markers pertaining to the term by international actors (e.g. UN FAO) could aid both small and large scale producers by guiding their development (especially in early phase operations).

The group identified that it is paramount to bridge the social (and physical) gap between policy makers and aquaculture producers, so policy can be guided by the real needs and interests of producers. The inclusion of producers at the beginning (rather than retroactively) of the policy making process can help to build trust and understanding between those parties, while shaping the direction of legislation to be more practically and operationally considered.

Regulators must be conscious to avoid contradictions around sustainability in supply chains, such as allowing importing of more sustainable lower trophic species, like bivalves from cheap production origins, where social and environmental regulations are less stringent. By allowing this, some of the benefits of more sustainable species (e.g. mussels) are offset by added environmental or social costs associated with imports from unregulated regions. Governments have a responsibility to support local producers that attempt to pursue methods deemed to be more sustainable. This could be done via subsidies for local producers, regulations for importers and retailers, and by emphasizing educational programmes that can improve consumer awareness around sustainability of their food with relation to product origins.

The group felt that too much power (economical, political, of communication and marketing) is in the hands of the "big players" (corporations, big producers, supermarkets), leading to a disproportionate representation of the broader industry interests. It is important that this industry influence is more equally distributed in order to promote the diversification of products and spreading of profits to sustainability leaders in production and innovation. Two ways to achieve this could be via the establishment of producers associations (clusters or cooperatives), or by legislative support for local council buy-in as a partial owner over businesses that are established in their region. The latter could evoke greater buy-in from local actors and potentially shift the types of businesses permitted to operate in certain areas in favour of more sustainable options.

The group noted that aquaculture is incredibly diverse in both product and practice, and thus requires a locally tailored approach regarding research and innovation. Research and innovation has to be developed according to local needs and also more closely account for locally available resources (financial, personal, etc). Local producers must have the capacity to implement the innovation and also provide maintenance.

The group identified four main solutions to promote more sustainable production:

1. Speed of change: More support for researchers and innovators is needed to avoid industry growth outpacing sustainable solutions to mitigate any negative impacts.

2. Reconnect policy makers, producers and industry: Policy makers have to be closer to the producers to increase mutual trust and build more functional policies that align with real industry needs.

3. More collaboration: Increased facilitation and formation of cooperatives and clusters is needed to redistribute the voice of the industry away from a handful of key players.

4. Better communication: We need to reshape the narrative of aquaculture through transparent communication of the value and benefits of the sustainable aquaculture activities and products.

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OUTCOMES FOR EACH DISCUSSION TOPIC - 4/4

Discussion group 4: Ethical Considerations & Animal Welfare

The group agreed that there needs to be more reliable scientific information coming from academics and objective third parties on what the best sustainable practices are for aquaculture. These then need to be disseminated to the public in smart and effective ways (e.g. social media, documentaries, information in supermarkets to guide purchasing decisions) to change demand, sentiment, and behaviour. Many felt that large producers will eventually be judged in the court of public opinion, and that this opinion needs to be shaped well.

Others stressed the clear need to educate producers, because creating healthy environments for aquatic animals and aquatic food sources is in the best ethical and economic interest of all producers. The group also noted that not all producers have access to the best knowledge, research and innovation, and thus will inevitably make poor decisions despite the desire to improve.

The third site of intervention identified was regulation, governments, and overseeing bodies. There was general agreement that there needs to be greater standardisation of acceptable sustainable practices in aquaculture to increase transparency among producers and enforce a base level of ecological sustainability. Some offered words of caution that these can unfairly penalize small producers, and so a regulation or sustainability tax system that is proportional to the size of each producer's production was proposed.

Lastly, some members discussed that alternative aquatic food sources (seaweed, bivalues) can be much more sustainable but there is a lack of consumer demand. Members were optimistic that the public could be nudged towards consuming these through government support (subsidies, or levies on less sustainable options), but there was agreement that nonetheless greater sustainability for foods with large demand (salmon, fish) is paramount.

Overall, the group identified four possible solutions to promote more sustainable and ethically considerate production:

1. Raising awareness among the general public: Increase awareness to nudge public demand towards more sustainable types of foods - seaweed, bivalves, etc.

2. International collaboration: Improve trans-boundary collaborations and sharing of knowledge and resources to clarify definitions of sustainability, standardising regulation, block unsustainable practices, and create strategies to incentivise sustainability

3. Connect science & industry: Industry needs to listen more to researchers and be more transparent with IP around their practices to promote research in the right areas. Economical viability and animal welfare go hand in hand.

4. Producers and farmers should give back to the environment: Fish farmers should be asked to give back to the environment via funding for industry research or donations to regional environmental research agencies. This would need to be undertaken with a size-to-contribution consideration that would see larger producers 'paying' more back than smaller producers.

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KEYWORDS

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AREAS OF DIVERGENCE

Most participants were in accordance with the topics discussed, diverging only on the importance and impact of some issues raised. For example, some believe the public resistance for aquaculture products is very high, whereas others believe that there is general resistance to all intensively farmed food, whether in land or water.

While the majority of members agreed that the big corporations hold too much power in aquaculture, some believe consumers should be educated so they can make different choices, demanding more variety of products (e.g. salmon is disproportionately represented in European supermarkets) to skew power balances. On the other hand, some believe it is crucial to increase the power of small producers (following the model of cooperatives of European wine producers, for example) as a more effective means to spread profit and market share.

Some members were in disagreement over which sectors hold the most responsibility to enact and drive change towards sustainability - some believe that consumers and the general public are responsible, while others (particularly those in the research and industry space) felt that government bodies and policymakers have the most power. This divergence is a clear reflection of uncertainty around sector roles within the industry and is common across many other food sectors.

There was also a notable divergence of opinions around the role of eco-labels as a means to drive sustainable developments. While some members felt that third-party regulated eco-certifications could help to incentivise sustainable movements within the industry, a number of members felt that labels could unfairly exclude small-scale producers through financial barriers and that labels hold little merit to consumers if not thoroughly understood by buyers.

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✓ Finance

Innovation

Women & Youth Empowerment

Human rights

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ATTACHMENTS AND RELEVANT LINKS

ATTACHMENTS

Outcomes manifesto