Aquaculture Governance Indicators (AGIs) assessment synthesis report

Country:
China

Species:
Sea cucumber (*Apostichopus japonicus*)

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Country overview

The increasing scale and yield of sea cucumber mariculture brings significant economical profits in China, of which *Apostichopus japonicus* being the most single productive breeding species (Yang, Zhou, Zhang, 2014). According to the "China Fishery Statistical Yearbook", 175,000 tonnes of sea cucumbers were produced in 2018 and mostly from Liaoning (92,200 tonnes) and Shandong Province (47,100 tonnes). These two provinces together take near 80% of national sea cucumber yield.

The major cultivation method in China for sea cucumber is pond farming. For now, the main sustainability issues existing in pond farming of sea cucumbers include the misuses of chemicals and disinfectors, occupying the coastal wetlands in the northern China, as a result, the loss of habitats would have a negative impact on East Asia-Australia migratory birds. The diseases control is also impeding the sustainable development of this industry.

Legislation

The sea cucumber aquaculture industry is under the governing of 12 national legislations (six of these are aquaculture specific), such as Regulations on Quality and Safety Management of Aquaculture and Guidelines for the Use of Fish Drugs for Pollution-free Food.

Sufficient and appropriate legislation exists, however, the coverage of specific sustainability concerns could be improved, and the precautionary approach is insufficiently used. The producers can receive implementation guidance of the legislations from trainings, though the guidance is not provided systematically, and not all of the producers can be actively engaged. Although the obligation to make information transparent is codified, the rule is not always followed, as not all the information is available and searchable.

There is clear evidence that illegal pesticide and herbicide are illegally used, and illegal enclosure of tidal area exists, which is prohibited or need permissions according to the regulations. Monitoring is in place but is not always reliable and/or independent, because the monitoring mainly focuses on the food security instead of environmental performance.

Voluntary codes and standards

Relevant codes and standards include: China National Organic Certification (CNOC); China Good Agricultural Practice (China GAP); Pollution-free Food - Sea Cucumber Aquaculture Practice Standard; China Green

Food; and Guidelines for the production and management of sea cucumber pond culture which were created in response to the widespread illegal chemical usage issue exposed in 2020.

In terms of scope, the main limitation is that not all identified issues are covered—precautionarity and attention to cumulative impacts are lacking in these national standards. Involvement of the government and the public is absent, as the standards are not explicitly encouraged/promoted by the government, except for Pollution-free Food Standard. For the transparency of standards, the information is obscure, as the data/reports are not often available to public.

Collaborative arrangements

The two associations involved in the sea cucumber aquaculture industry are: i) China Aquatic Products Processing & Marketing Association (CAPPMA) Sea Cucumber Subcommittee; and ii) China Fisheries Association (CFA) Sea Cucumber Subcommittee. The collaborative arrangement follows a public-private governance model: CAPPMA acts as the bridge between the government and the industries, and The Sea Cucumber Subcommittee communicates with the government as an industry representative.

Deliberation processes are not fully transparent or open, and the public are not actively engaged and informed despite participation of the industry. The collaborative arrangements collaborative arrangements are appropriate in that they include relevant actors and cover relevant issues, including the most urgent issues such as chemical use. However, they mainly focus on the industry's growth. More positively, actors are active in managing challenges and issues with evidence of learning, integration of goals, tasks, and activities.

The collaborative arrangements contribute to the improvement of compliance with legislation via actors playing an important role in creating and promoting norms and engaging industry leaders to steer changes in farming practices. Related to this, the collaborative arrangements hold potential as a great channel to introduce codes and standards to producer groups.

Capabilities

Capabilities were assessed across three state (Ministry of Agriculture and Rural Affairs; Shandong Provincial Department of Ocean and Fisheries; and Dept. of Agriculture and Rural Affairs – Liaoning Province); one market (China Aquatic Products Processing & Marketing Association); and one civil society (Qingdao Marine Conservation Society) organizations.

Actors show willingness to reflect and engage with knowledgeable others and interact with each other actively through joint seminars/meetings or projects. While there is some level of innovation via investment and resources to address issues, there are indications that the amount of funding is insufficient. Most actors recognize that challenges present themselves differently at various levels and take a lead in coordinating with key stakeholders. Lastly, most actors are responsive with good public communication channels and actively reach out to their audience, supported by appropriate resources.

Actionable insights

Legislation: relevance and coverage of the legislations are good, although the precautionary approach can be further applied; compliance of small-scale farmers should be improved, and their diverse nature should be considered in the enforcement; and coordination with global and regional regulations can be enhanced if they are more incorporated in the domestic legislation.

Voluntary codes and standards: input legitimacy of national standards and codes can be improved if producers (especially small-scale) and communities can be better represented; attention to some higher risk issues including critical habitat enclosure should be increased, with the standard setting process taking a precautionary approach; producers, especially small-scale farmers, are not readily informed about the codes and standards due to their diverse and disparate nature which could be improved through more adaptable and flexible engagement by key actors involved in this space; and better coordination between codes and standards is needed to improve adoption by producers.

Collaborative arrangements: a more inclusive and transparent decision-making process of the actors is needed with other stakeholders besides producers and processors being engaged; more attention needs to be paid to cumulative impacts by the actors in addition to a focus on the growth of the industry; information published could cover more aspects including production details, environmental monitoring data, and adopted solutions in the farming practices; and quality of learning can be improved by setting more clearly defined learning strategies and action plans on the basis of good commitment and discussion of the challenges.

Capabilities: the agility of actors could be improved through more effort being put on tangible actions following from discussions of challenges; and more resources are required to enhance the capabilities for innovation and enact the vision developed to address the identified issues within the industry.