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Intelligence

Ecuador sets legal framework for offshore fish farm development

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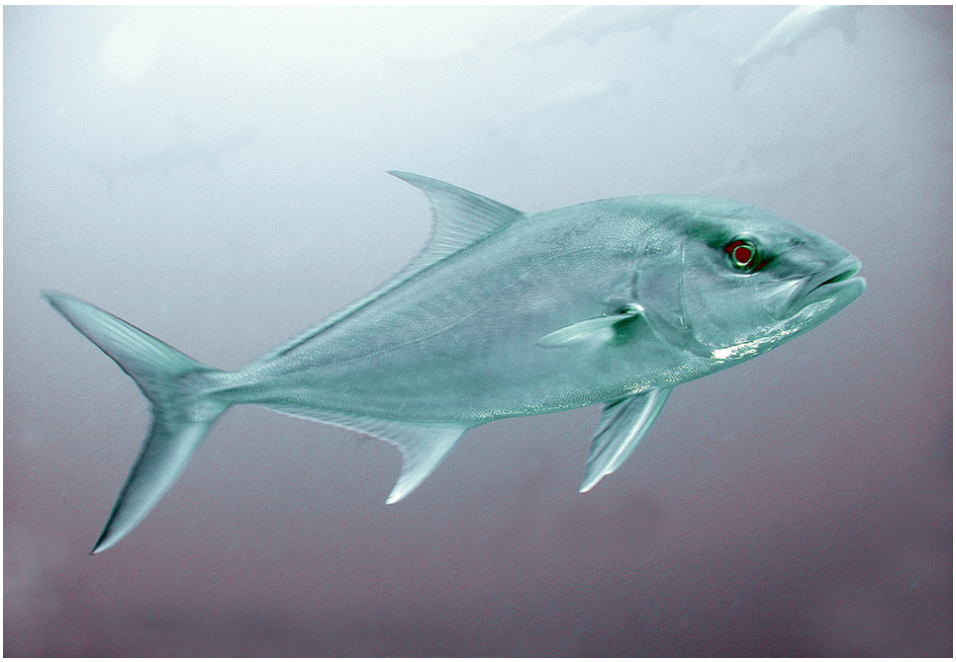
Almaco jack, cobia and mahimahi are leading species of interest



Almaco jack is one of the species under consideration for mariculture off the coast of Ecuador.

Ecuador is a country well known for its shrimp-farming industry, but now the government is interested in encouraging the development of offshore marine fish farming, or mariculture. Although the aquaculture sector has a lot of experience in pond-based aquaculture, marine fish farming represents a new challenge. Legal and technical issues are being addressed, but the industry still has a long way to go.

Marine fish farming

A few past trials in developing mariculture in Ecuador did not progress for different reasons, but since 2007, interest in this activity has been increasing, along with pressure from potential investors to set a legal framework and conditions under which to invest.

Impressive growth has been seen in nearby Chile, where salmon farming has increased to record levels, but it is important to differentiate the conditions for culture in Chile and Ecuador.

In Chile, salmon farming began with technology and experience brought in by international investors and companies. The biology of salmon culture and the economics associated with the activity were well known.

Pioneering efforts in the development of tropical offshore marine fish aquaculture in the world have been considerably less extensive. The ones closest to Ecuador have occurred in the Caribbean and Hawaii. The main candidate species under review are almaco jack (*Seriola rivoliana*), cobia (*Rachycentron canadum*) and mahi-mahi (*Coryphaena hyppurus*) but several others will probably be studied.

The basic biology of the potential candidate species is known, and there is experience and data about growth rates where the fish have been cultured. Further factors are also being considered as Ecuador plans for marine farming, now and into the future.

Legal framework

Through Ministerial Accord 458, published in October 2012, the government of Ecuador set the legal framework for leasing mariculture sites and the conditions under which to apply for a lease. This commitment to encourage the development of marine fish farming was also shown by the credit lines for mariculture that Corporación Financiera Nacional (National Finance Corp.) made available for companies interested in investing in this activity in Ecuador.

Two companies are in the process of obtaining leases, which can take some time. Multiple documents are required, from the strictly business ones to those related to the environmental issues and technical areas of fish growth.

Potential impacts

As the area to be leased is offshore, there was need to coordinate among different government institutions and ministries regarding which role each would have. In a world that is more and more environmentally aware, the potential impacts of mariculture development became one of the main concerns for the government bodies in whose fields of action offshore farming could be included. This concern was probably the main reason discussions have continued for several years before the final approvals for leases.

Unfortunately, when a government official or fishing community leader searches for offshore fish farming information on the Internet, the first “hits” that appear are often negative and mostly biased information describing negative consequences of marine fish farming. Other general sources provide videos and photographs of effects that are usually localized, manageable and not widely extended to whole ecosystems.

This biased negative image created opposition by local groups that on several occasions did not allow workshops to progress. Meetings could not reach positive answers to problems that have already been managed and solved in other places where marine fish farming has developed on a large scale.

Legal guidelines require the use of juvenile fish from hatcheries, rather than wild sources. This helps control disease and avoid conflicts with

fishers.

Technical, legal aspects

Creating legal documents for an activity such as marine fish farming requires an interesting mix of technical knowledge combined with legal wording, where lawyers meet several times with technical people. It is not a copy-and-paste process using regulations from somewhere else, because the conditions in a country may not support the legal conclusions reached in other regions.

One key part of Ministerial Accord 458 establishes the length for mariculture leases as 10 years, giving enough time to recover the invested money and make a profit. This period can be extended another 10 years by presenting a request three months before the end of the original lease. Marine fish farming is a long-term investment that needs conditions like this to attract investors.

Accord 458 also bans the use of juvenile fish from wild sources, so basically all stocked fish must come from hatcheries. This helps disease management, as potential pathogens can be excluded at the hatchery level. It also avoids conflicts with fishers for the same source of fish.

The environmental impacts of marine fish farming are usually localized under the production cages and do not extend to the wider ecosystem. The accord includes guidelines that state: “Environmental impacts … will not cause an irreversible deterioration of the marine ecosystem.” A key word here is “irreversible,” so temporary changes that occur on the bottom of the sea under the fish cages are accepted under certain established parameters.

The total area allowed for setting cages and infrastructure above the ocean surface is 40 ha, with the effective area extending up to 150 ha to include the anchoring system, which depends on the depth where the farm is located. Anyone who has visited a salmon farm is aware that the size of the area discussed in legal documents is enough to set a sizable offshore fish farm that includes an area to cushion its impacts.

Offshore fish farming is a very intensive aquaculture activity in which sea cages do not occupy an extensive area, but are mainly constructed based on the volume of fish they can hold. The intended area for a project presented during the request for a lease can be changed as long as it does not exceed the legal limit, and the authorities are informed.

Offshore zones

One part of the legal lease document that created a lot of comments was the distance from the shore where leases will be allowed. The first 12.9 km close to shore are designated only for projects of the organized artisanal fishermen organizations and for pilot research projects. The local fishermen must feel part of this new activity, and a major concern was not to negatively affect their traditional fishing areas by the establishment of marine fish farms.

This decision is in agreement with Ecuador’s government policy regarding the social benefits of new development and respect for traditional activities in different groups of society. This distance for logistics operations is not a surprise to people with experience in salmon farming. For salmon farms in different parts of the world, the distance between logistics ports and the actual farms can exceed 32.2 km. Farms can appear close to shore in photographs, but the actual distance covered to provide all the logistics is many times more than 12.9 km.

Perspectives

Like any other regulations and laws worldwide, legal documents related to mariculture in Ecuador will continue to evolve according to the demands and conditions of the activity. One area that needs to be considered is to give the marine farming industry some freedom to develop new technology and adapt to stay competitive in the very dynamic world economy.

At the moment, Ministerial Accord 458 does not regulate stocking densities. Regulations should aim at measuring the impacts of the fish farming on the bottom under the cages using measurable parameters. Trying to regulate stocking densities could “strait jacket” for a new industry, not allowing flexibility in decisions concerning the economics of this business.

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