Coastal Alliance for Aquaculture Reform

BACKGROUNDER

Use of Closed Tank Technologies for Salmon Farming

Closed tank technologies offer a major step forward in fish farming practices. They eliminate several of the most important negative impacts of salmon farming and help significantly reduce others. Closed tanks have been demonstrated as technically feasible ways to grow salmon and are currently being tested to demonstrate commercial viability.

Demonstration of closed tank commercial viability and confirmation of environmental benefits will offer a significant opportunity to move towards salmon farming that protects the marine environment, human health and coastal communities.

Current and Planned Facilities

Closed tank technologies are currently used to grow many types of seafood on a commercial scale including arctic char, trout, barramundi and tilapia, among others.

Salmon is currently grown in freshwater closed tanks in several places.

Saltwater salmon has been grown successfully in trial projects in BC and Norway, and produced commercially in Iceland using a variety of closed tank technologies.

In BC, commercial scale trials are in the implementation stage and once up and running will demonstrate economic viability, cost-benefit comparisons to open net-cages and environmental performance. Cost-benefit comparisons explicitly assess externalities, costs currently borne by society or the environment and not by salmon producers, to inform discussions of financial viability. In Normandy, France a land-based recirculation system has already been approved, received start-up funding and plans to start construction shortly.

Some planned facilities use nearly full recirculation, while others collect and treat nearly all solid waste, all fish mortalities and varying portions of the rearing water. The remaining water may be exchanged with the environment.

Currently, floating systems using the solid waste capture and partial water treatment option appear to have the best energy use profile and opportunity for financial success.

These systems eliminate:

- Solid waste to the marine environment
- Contamination of the area under the tanks
- Escapes from the rearing facility
- Marine mammal kills due to interactions with farmed fish and nets

They appear to eliminate:

- Disease and parasite (e.g. sea lice) transfer between wild and farmed fish
- Farm losses due to environmental factors

They significantly reduce:

- Water column pollution
- Feed waste
- The need for antibiotics and chemical treatments of the fish