

“Putting fish farms in tanks on land is helpful but expensive, especially as currently, large fish-farm companies can dump their environmental costs on the local ecosystem. There is some possible good news in the work of Thierry Chopin, a seaweed expert from the University of New Brunswick, and Shawn Robinson, a biologist with the DFO, who have been trying to revive an ancient Chinese practice that eliminates some of the problems biologically. They approached Glenn Cooke of Cooke Aquaculture, a big fish-farming company in the Maritimes, and began their program of Integrated Multi-Trophic Aquaculture (IMTA). The waste that flows out of the open-net pens of fish farms is a huge problem, so Chopin and Robinson tried growing mussels, which love to eat waste, around the outside. They also encouraged seaweed growth beneath the nets. When the mussels were tested for health afterward, they passed so well that both they and the seaweed were found to be marketable.

Another problem with fish farming is caused by overfeeding. It’s hard to tell from above how much the fish eat, and many pellets end up falling to the bottom of the nets and creating mounds of rotting waste. Cooke had cameras installed below every net pen so that as soon as pellets start to drift down, the technicians know the fish are full and stop feeding. That saves money and reduces pollution. As for what’s left, sea worms, cucumbers and urchins are being grown to mop it up.

Using natural species this way means, as Chopin says, “we have the biofilters, nutrient scrubbers, but at the same time, they have a market value”. By using more plant material, Cooke has been able to reduce the amount of wild fish in their feed to less than one pound for each pound of salmon produced, so this experiment is encouraging on almost every front. They are attempting to address the biggest problem of all, sea lice, by growing far fewer salmon per net. So far it’s only an improvement, not a solution, but at least Cooke is trying. The company doesn’t grow species that are alien to the area, and it uses genetic material from wild salmon for their “crop”, so that if any escape the impact will be lower. These are all steps that could lead toward a more sustainable form of ocean farming, if one is possible. The still-faraway goal would be finding a way to get rid of the lice – and then passing legislation that would make sure that IMTA is practiced throughout the industry.”