What to do with the fish pens in Laguna de Bay (Part II)

‘There are those who look at things the way they are, and ask why… I dream of things that never were, and ask why not?’ – Robert Kennedy

Well-meaning but misplaced most charitably describes resolution No. 518 Series of 2017 of the Laguna Lake Development Authority (LLDA) and approved by DENR Secretary Regina Lopez directing “all operators of existing fish pens/cages to harvest their fish stocks and demolish their structures by March 31, 2017, otherwise the same shall be done by LLDA.”

Demolition of all the fish pens/cages in Laguna de Bay is anti-poor. It unnecessarily deprives the poor consumers of Metro Manila and surrounding communities of a significant part of their affordable animal protein supply. Fish pens outproduce catch fisheries easily by a factor of 10 on a per hectare basis. In 1973 when fish pens were first introduced, the average wild fish catch in the lake was 249 kilograms per hectare versus the 4,000 kilograms per hectare from bangus fish culture. Similarly in terms of livelihoods from the producer point of view, aquaculture creates on a per hectare basis far more jobs than catching fish in the wild.

Ironically had LLDA been performing its lawful mandate we would have been spared of this self-inflicted problem.

Aquaculture for Our Long-Term Food Security

Globally, fish farming (aquaculture) is the fastest growing food producing sector. In 2012, 42 percent of the total world fisheries production of 158 million tons was contributed by aquaculture. While the growth rate of aquaculture worldwide has been sustained and rapid, averaging eight percent per year over 30 years, capture fisheries has been essentially flat and declining.

The 2015 statistics issued by the Bureau of Fisheries and Aquatic Resources (BFAR) show that our annual production from aquaculture of 2.35 million tons has already exceeded the combined production of commercial fisheries (1.08 million tons) and municipal fisheries (1.22 million tons). Just like the rest of the world, and perhaps even more so because of our vast water resources, we shall be relying more and more on fish farming for our future food needs.

Recognizing the potential of fish farming to contribute to our food security, create jobs and to the total economy by way of exports, the Fisheries Code of 1988 (Republic Act 8550) provided among others that 10 percent of the suitable water surface of all lakes and rivers be allotted for aquaculture purposes like fish pens and fish cages, provided further that stocking density and feeding be controlled and determined by carrying capacity.

Consistent with the Fisheries Code of 1988 and upon recommendation of LLDA itself, President Fidel V. Ramos signed Executive Order (E.O.) 349 (s.1996) approving the Laguna de Bay Master Plan, including the Fishery Zoning and Management Plan (ZOMAP) to effectively regulate and control the fish structures in the lake.
By reducing the allowable area for fish pens to 9,000 hectares out of the total area of 90,000 hectares this order by President Ramos diffused the then escalating armed conflict between fishermen and the fish pen operators.

The issues/concerns against aquaculture in Laguna de Bay are threefold, namely 1) loss of livelihood of fishermen, 2) obstruction of navigation, and 3) lake water pollution. The Laguna de Bay Master plan addressed all three. It was just a matter of enforcing the LLDA fishery component of the plan (ZOMAP).

**Loss of Livelihood of Fishermen**

The most immediate issue is the loss of livelihood of fishermen. However, this is only a partial loss. Since only 9,000 hectares out of 90,000 hectares are converted into fish pens as provided by law, the fishermen still have 81,000 hectares to fish from.

Besides, the loss of livelihood in capture fisheries needs to be weighed against the alternative livelihoods created by intensive fish farming. Aquaculture creates jobs for the corn farmers who produce part of the fish feeds; jobs for the bangus fry gatherers from the wild and jobs for tilapia hatchery workers who supply the fry and fingerlings; for the upland farmers who supply the bamboo stakes to build the pens; the fish pen workers who grow and guard the fish and ultimately the fish market vendors, who have much, much more fish to sell. If all these livelihood opportunities are added together, they should more than make up for the loss of jobs among fishermen.

Corollary to the equity issue between fishermen and fish pen operators, is the perceived dominance of the industry by a few large fish pen operators. If the policy is to further broaden participation, moving forward several measures can be put in place: 1) set a lower limit to the maximum area that corporations may win in auction/bidding, 2) get rid of dummies, 3) reserve certain fish pen areas for bonafide fishers cooperatives, and 4) allocate more areas for fish cages which require less capital to set up.

**Obstruction of Navigation**

Clogging up of navigation lanes in the lake is really a minor inconvenience. The ZOMAP designated the areas where the fish pens and fish cages may be located. The maps contained as well the navigation lanes. If the LLDA fish wardens were doing their jobs they should not have allowed the construction of pens which obstruct the passageways. With use of modern global positioning system (GPS) and drone technology, locating and identifying the non-complying fish pens should not be a big deal. It is a matter of political will and enforcement.

**Eutrophication**

The third longer term issue/concern is the adverse impact of aquaculture on the ecology of the lake. The ultimate fate of all lakes is extinction — from eutrophication (fouling of the water) and siltation. However, these processes occur over geologic time i.e. over thousands even over millions of years, but invariably accelerated by man’s activities.

Between the two causes of lake death, fish culture has little to do with siltation. Laguna de Bay is getting shallower and shallower not because of the fish pens but from the silt generated by natural causes and anthropogenic activities in the uplands and watersheds and deposited in the lake by Laguna de Bay’s 22 major river tributaries.

Fish pens and cages do contribute to water pollution through the leftover fish feeds and fish metabolic wastes. However, part of the nutrients are recovered and taken out of the lake from the fish harvests. Since fish culture in Laguna de Bay relies heavily on natural feeding of planktons in the lake, the net nutrient contribution of fish culture should not be that large.
In fact in the most recent, most comprehensive assessment of Laguna de Bay by a large inter-agency scientific panel led by Academician Rodel Lasco (2005) as the Philippine contribution to the UN-sponsored Global Millennium Ecosystem Assessment Program, the Laguna de Bay waste load was estimated at 13,800 tons nitrogen per year, of which 79 percent came from domestic sources; 16.5 percent from agricultural activities (run-off from irrigation water); 4.5 percent from industrial effluents, and 0.5 percent from other sources (including fish culture).

This was corroborated by a separate report by Santiago et. al. from the SEAFDEC Binangonan Fresh Water Station which estimated the nitrogen contribution to Laguna de Bay from aquaculture to be in the order of 38.6 tons nitrogen per year, or about 0.3 percent of the total load.

The real culprits therefore as far as water pollution of Laguna de Bay is concerned are the sewage and kitchen wastes of the communities in the Laguna river basin, the run-off from irrigation and effluents from industry. Fish culture at the most contributes one percent to the pollution of the lake. Considering its contributions to food security and job creation it is a trade–off we can live with.

Conclusion/Recommendations

Demolishing the fish pens in the lake is anti-poor. Fish culture produces more affordable animal protein for consumers and creates more livelihoods for producers than catching fish in the wild on a per hectare basis.

The three issues/concerns raised against fish culture in Laguna de Bay are not new. They were addressed by the Laguna Lake Master Plan including the ZOMAP in E.O. 349 approved by President Ramos in 1996 upon recommendation by the LLDA itself.

The proliferation of fish pens in excess of the 10% of area of the lake allowed by the Fisheries Code of 1988; the haphazard siting of fish pens obstructing the navigation lanes delineated in the ZOMAP can be resolved by sticking to the plan.

Fish culture should not be made the scapegoat for the fouling of the waters of Laguna de Bay. Domestic wastes, irrigation and industry effluents are the real culprits. Fish culture contributes at most one percent of the nutrient load of the lake waters. The minor contribution of fish culture to lake eutrophication is a trade-off we can live with.

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Dr. Emil Q. Javier is a Member of the National Academy of Science and Technology (NAST) and also Chair of the Coalition for Agriculture Modernization in the Philippines (CAMP). For any feedback, email: eqjavier@yahoo.com.

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