New Feed Technology to Improve Sustainable Aquaculture in Viet Nam

As the global population grows, so does the demand for fish and the pressure on aquaculture to increase productivity. This is particularly true in Viet Nam where the population will increase by 15 per cent to 103 million by 2030. Fish is a staple food throughout the country and an affordable source of micronutrients and essential fatty acids that are vital for good health.

Intensive aquaculture relies heavily on commercially produced fish feeds, which can lead to increased water usage and pollution. To both reduce this environmental impact and improve the nutritional value of farmed fish, the “Nutritious-system feeding concept; nourishing Vietnamese ponds to produce quality seafood” project aims to increase the contribution of naturally occurring food in the diets of farmed fish and shrimp.

Launched on 20 November 2014 in Ho Chi Minh City, the project will work with Vietnamese aquaculture farmers to research an innovative “nutritious-system” concept that involves feeding not only the cultured animals in the pond but the entire pond ecosystem, including algae and bacteria in the water. These microbes in turn produce nutritious, natural food for the fish or crustaceans in the pond.

This system reduces costs for the farmer and may increase the nutritional value of the fish and shrimp – in particular the concentration of Omega 3 polyunsaturated fatty acids. In Viet Nam, where more than 23 per cent of children are stunted and 12 per cent are underweight, increasing the availability of affordable, nutritious foods, like fish, is essential.

Spanning five years, the project combines research with technological innovation to improve the feeding system, while ensuring that productivity and profitability are retained.

The project will assess which factors contribute to the transfer of essential Omega 3 polyunsaturated fatty acids through the pond’s food chain and determine the ideal ratio of algae and bacteria for optimal water quality and nutritive value for fish and shrimp. These technologies will be translated into new commercial products like improved pond feeds, feed additives and culture protocols. The project will also assess the social and institutional factors affecting the uptake of this feeding system in Viet Nam’s aquaculture industry.

Making aquaculture more efficient, reducing costs and lowering environmental impacts with fewer losses due to disease or water quality failure will strengthen the aquaculture industry, benefiting all stakeholders including poor and vulnerable consumers.

Part of the CGIAR Research Program on Livestock and Fish, the project is funded through the Netherlands Organization for Agricultural Research WOTRO Science for Global Development, and is led by Wageningen University in partnership with WorldFish.

Together, WorldFish and Wageningen University will co-fund a Postdoctoral position to facilitate an innovation platform analysing stakeholders' positions and perspectives on the "nutritious-system" concept.

The platform will also identify the barriers and enablers for successful implementation and adoption of the technology by fish farmers in Viet Nam and potentially other countries in Asia, and perhaps beyond.

To enhance the scaling potential of the technology and support decision-making around it's uptake, the Postdoctoral researcher will study the likely effects on food and nutrition security and social sustainability, including effects on vulnerable people.

Board members of the project represent academia (Wageningen University Research, Can Tho University), aquaculture industry stakeholders (including Nutreco/Skretting-Vietnam, the world's largest fish-feed producer), animal health specialists (Vemedim Animal Health), My Thanh Shrimp Association and WorldFish.

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