

Assessing the sustainability of aquaculture production

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Global consumption of seafood has risen dramatically over the last

decade, due to a growing population, increased affluence and changing eating habits - many now see seafood as a healthy alternative to meat. The EU is the largest single regional importer, with many of its imports coming from Asia.

The EU-funded project SEAT ('Sustainable Trade in Ethical Aquaculture') is building up an understanding of new Asian aquatic [food chains](#) - and looking into their sustainability. The international team's research covered the top four aquaculture products making their way into European shops and restaurants: tilapia, pangasius (catfish), [shrimps](#) and prawns.

The project brings together European and Asian researchers as well as small business stakeholders from Bangladesh, China, Thailand and Vietnam.

The team began by developing a comprehensive picture of the value chains for each product through interviews and focus groups in all four countries. This helped to establish the history of production and processing at each site studied, along with local views on limits to increasing production. The work also allowed the team to identify important stakeholder groups.

The next step was a [life cycle assessment](#) of all the processes involved in getting aquatic products to consumers, from the production of feed - which includes soybeans in Brazil and [maize](#) in the US - to the consumer's disposal of [food waste](#). A life cycle analysis helped detect the parts of the chain that are problematic.

The analysis has been translated into statistical data demonstrating clearly why some processes are more sustainable than others. The SEAT assessment is the first of its kind in terms of coverage and detail.

This data has also been fed into specially developed models able to predict the risk of other activities, such as agriculture, to existing aquaculture practice, as well as any [environmental change](#) resulting from aquaculture practices.

In South-East Asia, most fish farms use ponds. As farming has intensified and local populations remain reliant on the same water bodies, aquaculture waste has the potential to pose health and environmental risks to nearby communities and land areas.

The models are tailored to each species and each country. By inputting data on production practices and water management strategies at each farm, the researchers will be able to estimate nutrient levels and the potential for eutrophication - excessive growth of algae due to a high concentration of nutrients - and risk of chemical contamination in water systems.

The SEAT project also developed a system to help local fish farmers predict potential environmental impacts before they occur, by combining large scale 'pollution' models with models which predict interactions within individual farms.

The team has also investigated the social and ethical effects of aquaculture production in Bangladesh, China, Thailand and Vietnam. They found that stories of very poor conditions at farms and processing plants are not necessarily true, and emphasise the high levels of local employment created by the aquaculture industry - in Bangladesh, there are 250 000 farmers producing black tiger shrimps.

The SEAT project is due to finish in November 2013. The research should help ensure Asian aquaculture production is sustainable. It will also lead to stronger scientific, business, industry and policy links between Europe and Asia.

The research will feed into the development of an Ethical Aquaculture Food Index (EAFI) - a decision support tool that brings together all outputs of the project to ensure the continued supply of sustainable aquaculture products to the EU.

The project received EUR 5.8 million in EU funding. It is coordinated by the University of Stirling in Scotland.

More information: SEAT seatglobal.eu/

Provided by CORDIS

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