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Can Aquaculture Feed the World Sustainably?

The UN has declared 2022 the [International Year of Aquaculture](#). But, what is the future of fish farming? Is it in coastal areas? Perhaps it's miles from the sea, in freshwater ponds owned by smallholder artisans. Maybe it's nowhere near water at all, but in a lab...or in space.

Here are some exciting startups from all over the world focused on making the fish we eat more sustainable:

Aquaculture currently relies on fishmeal made from wild fish. But, new alternatives are emerging such as Tanzania's [NovFeed](#), which uses bacteria and blackfly larvae to recycle organic waste into high-protein feedstock. [NovoNutrients](#) in the USA are converting waste CO₂ into nutritious feed using synthetic bacteria and renewable energy.

To keep fish healthy, many aquaculture farmers must renew the water in their fish ponds every week. When they do this, excess nitrogen from fish manure ends up in waterways. That's why Mexico-based [MicroTERRA](#) is tapping into the power of the aquatic plant lemna. Lemna cleans the water in ponds, and then it can be harvested and processed to make a high protein, high value, functional food ingredient. [Banoo](#), an Indonesian startup, has developed an affordable and solar-powered microbubble generator that improves water quality in inland fish ponds by increasing dissolved oxygen levels.

Others are looking at expanding aquaculture's potential in new and unexpected places. [Orbital Farm](#) wants to take fish into space because they're efficient feeders and waste can be used to grow vegetables. [Kairos](#) in Ethiopia are taking a more down-to-earth approach, using

aquaponics and hydroponics to integrate fish, vegetable and poultry farming into circular production systems in cities.

What about a future where we can eat fish without the fish? In 2021, more than \$175 million was invested into [alt seafood](#) companies. This is a sea change - but how will it impact the aquaculture industry?

If you have an idea or startup related to improving aquaculture or our food systems at large, the Thought For Food Challenge is a great place to start. Find out more and register until June 3rd at www.thoughtforfood.org. **In the meantime, so long, and thanks for all the fish!**



*NovFeed collects and repurposes organic waste to create a renewable and sustainable single cell protein for the rapidly-growing aquaculture industry in Tanzania.
(Image source: NovFeed)*



*microTerra provides farmers with a sustainable solution for water purification as well as a new income stream.
(Source: @microterra.mx)*