

## Implementing Restorative Aquaculture

**Draft Proposal Summary** – Give coastal people food, jobs, and hope for centuries. Food, jobs, and hope accomplish many UN Sustainable Development Goals. Centuries of food and job security allow coastal people stay home and welcome refugees to their community.

People become refugees when home becomes unlivable. Homes become unlivable for many interrelated reasons, often exacerbated by climate change:

- Insufficient food – Crop failures, fisheries collapse, and associated job loss (drought or running out of groundwater/snow melt; floods; changing sea level)
- Violence and associated job loss – Wars, gangs, sometimes power and wealth-control struggles, but often traced back to crop failures and insufficient hope for a job.

**Draft Solution Summary** – Assist coastal communities designing, building, and operating their own offshore fishing reefs as a new kind of aquaculture. As an example of a well-managed natural reef, consider the people of [Punta Abreojos](#), Baja California Sur, Mexico. They manage abalone on nearby reefs for a sustainable developed-country quality of life. Every coastal community could have similar quality of life, if they had similar resources. Every coastal community could have similar resources in the form of a floating flexible reef. Every important natural reef could become a marine sanctuary with all the fishing on the natural reef moving to flexible floating reefs.



As The Nature Conservancy suggests in "[Towards a Blue Revolution: Catalyzing Private Investment in Sustainable Aquaculture Production Systems](#)", philanthropists or investors would fund perhaps US\$1 to 4 million establishing a reef owning and operating team in a developing community with a custom reef design and business plan. The local organization uses their custom reef design and plan to obtain market rate loans for the US\$5 to 20 million reef array construction cost. The US\$15 to 100 million income from each array of reefs allows the local organization to repay the loan and "pay it forward" for more communities to organize, design, and obtain loans for their reefs.

### Envisioned roles for team members

**Social introduction** – A social introduction team would: help introduce the team to the community; help the team walk the tightrope of social justice and equal opportunity while calming economic and social divides (elites and gangs in Central America, militia's in Africa); and help the team recruit and vet local managers and employees. Ideal social introduction organizations bridge between all levels of local society.

**Eager communities** – Local champions proving grass-roots support in specific communities. The OceanForesters wants the local community to establish an organization that “runs the show”. Establishing a local organization will be easier, if the local fishing community already has a cooperative or an informal cooperation. The [Zanzibar Seaweed Cluster Initiative](#) is an example of informal cooperation.

**Assisting the local organization** – An assisting team works with local people to establish an operating organization while ensuring the new fishing reefs are good fits for their culture and fishing practices. This includes helping the local agency find the appropriate governance and business/finance practices as well as translating concerns, options, innovations, and details between the locals, the biologists/ecologist, and the engineers. Ideal assisting organizations have on-going operations helping developing country coastal people to increase their quality of life while restoring ocean health (more biodiversity and biomass).

**Restoration credibility** – A credibility team verifies the design and operation of the new fishing reefs are sustainable and improving ocean health. The ideal credibility team is continuously updating the best practices for restorative aquaculture on a global scale.

**Fisheries and Ecology Experts** – Each country will have a team of local experts to amplify the knowledge of local fishing people specific to their new offshore fishing reefs. OceanForesters’ team of researchers, fishery experts, and businesspeople will provide a catalog/menu of reef ecosystem and management options.

**Engineers and Constructors** – The engineers will customize reef designs, and perhaps community sanitation/nutrient recycling designs, using a portion of the \$100 million MacArthur100&Change funds. OceanForesters, and other teams in the U.S. Department of Energy MARINER program, are refining floating flexible reef structure designs. The ideal constructor has design/build experience mass-producing large open-ocean rope structures.

**Business and Finance** – The ideal business and finance team helps the local organization prepare a business plan that satisfies lending institutions with the most up-to-date understanding of the lending agencies’ agenda and schedule. For example, see the “[Asian Development Bank commits to expanding its investments and technical assistance in ocean health and the blue economy to \\$5 billion between 2019 and 2024.](#)”