

CASE STUDY

FISH-AGGREGATING DEVICE (FADs)

Ocean Buoy

Somalia Coast, Africa



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Project Overview

Application:

Fish-Aggregating Devices (FADs)

Product:

ATLANTIC-2600 Ocean Buoy

Date:

December 2015

Location:

Somalia Coast, Africa



Background

As the international community grapples with the challenges of a changing climate, one of the most pressing issues is food scarcity caused by fish shortages. Coastal populations affected by poverty around the world face a one-two punch as sea waters grow both warmer and more acidic, thanks to the absorption of excessive carbon dioxide. When paired with the already entrenched problem of overfishing, the result is a humanitarian crisis in the making.

Fortunately, there is a relatively easy, and cost effective solution: fish-aggregating devices (FADs) that utilise Sealite's buoys.

How Fish-Aggregating Devices Function

A FAD is any structure or object deployed in ocean waters to attract fish. FADs operate on one basic principle: Juvenile fish and other aquatic species are always on the lookout for shelter, or simply a visible landmark in what is often otherwise featureless water. Accordingly, those juveniles congregate under and around the FAD, setting off a chain reaction of fish activity in the area.

In a typical Sealite buoy deployment, juveniles gather near the device while adults of those species congregate a bit farther away, and larger predators of all species near the FAD circle the perimeter. In this way, a single FAD creates an entire temporary mini-ecosystem around itself, giving fishermen a reliable point of reference for finding and capturing the desired species.

At their simplest FADs can be a single unadorned buoy, while in more complex FAD devices they add mats, decks or other structures that are attached to the buoy that increase horizontal surface area and serve as anchor points for plant life to lure more fish. FADs can be either temporary or permanent.

Temporary devices may be deployed for only a few days, with local fishermen staying out to sea during the duration to fish the stock attracted to the device. Permanent devices are anchored to the seabed, either with traditional metal anchors, environmentally friendly synthetic moorings or simple heavy weights like cinder blocks.

How FADs Fight Poverty

Global fishing levels have skyrocketed over the last 50 years, but in many cases the bulk of the catch goes to industrialised countries that do not rely on fish as a primary source of nutrition.

While the resulting fish shortages simply mean higher supermarket prices for industrialised countries, they lead directly to famine conditions in those nations that are dependent on fishing. Approximately 40 nations, around the world rely on fish to provide more than 30 percent of their citizens' protein, nearly all are clustered in Central Africa, Oceania and the Malayan archipelago, sites of some of the world's most heavily stressed fisheries.

Unsurprisingly, that dynamic has consequences even beyond the immediate requirement to find food to eat. In areas where fishing provides nutrition, it is also relied on for economic activity, especially in coastal towns where it is not uncommon for every working-aged male to be engaged in fishing activity to support himself and his family. Therefore, fish shortages can have a "devastating effect," as reduced catches both make it harder for a population to feed itself and rob that same population of its ability to earn the income required to buy food produced in other ways, or to establish alternative methods of food production.

Sealite's Fish-Aggregating Devices present a clear solution by providing an immediate source of food, as well as giving local fishermen a way



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to responsibly manage their own fisheries. Most local fishing activity takes place within a few miles of the coastline, and when those stocks are depleted the area's fishermen have little recourse. In contrast, Sealite FADs allow local fishermen to treat their fishery as a managed resource. When fish populations near the beach line are depleted, the fishermen can deploy FADs in deeper water, where they can access new fish populations that have not been stressed. Even better, fish in deeper waters are usually different species than those found closer to shore, allowing fishermen to use FADs to create a "crop rotation" system by switching between populations as one or the other recovers its numbers. In this way, FADs can allow poverty-ridden populations to establish self-sustaining aquatic economic and food resources.

FAD-assisted fishing boosts local incomes, reducing poverty even while it increases food security. Since FADs are semi-fixed structures, they may additionally increase marine safety because fishermen can return to the same location day in and day out, reducing the need to spend time on dangerous waters searching for transient fish populations.

It is no surprise then, that the United Nations and other international bodies have ramped up their efforts to implement FAD fishing programs in vulnerable areas. In partnership with the UN's Food and Agriculture Organization, Sealite supplied 25 of its 2.6 meter permanent Atlantic ocean buoys to be deployed on the Somali coast. Those deployments are already increasing food security for local villages, and with increased use of FADs in other locations, the international community can continue making strides to help poverty-ridden coastal populations around the world.



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