

Aquaculture in sub-Saharan Africa: small successes, bigger prospects?

By [John Bolton](#)

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If you don't know what aquaculture is, you're not alone: a 2009 survey found that a remarkable [85% of South Africans](#) had never even heard the term, and most are still unaware of its importance. The situation hasn't improved much, more people have heard of it but few actually know what it is.



©Morley Read via [123RF](#) - Tilapia underwater at a fish farm

Aquaculture is the aquatic equivalent of agriculture. It involves essentially “growing” animals and plants that live in lakes, rivers or the sea, mostly for human consumption. It has been one of the world’s fastest growing industries in [recent decades](#)

In fact, today, you’re more likely to be eating “farmed” fish than fish from the wild. But that is not true in South Africa, yet. In 2014 the supply of fish for human consumption from aquaculture exceeded that from wild-caught fisheries for [the first time](#). This trend is continuing, as the amount of fish which can be supplied by the traditional fishing industry has reached a plateau, and aquaculture continues to expand at a rapid rate. It’s increasing in those countries with a long tradition of aquaculture, but also in regions where it hasn’t been done before.

As the supply of fish and seafood through fishing becomes less sustainable, the global challenge is to replace it sustainably through aquaculture.

The industry has grown slowly in sub-Saharan Africa. Freshwater fish aquaculture has recently expanded very rapidly in the region from a low base. Marine aquaculture has yet to take off, with only one or two successful examples. As fisheries become more depleted, there's a growing need and opportunity to develop aquaculture for food.

Shortage of suitable sea space may eventually limit expansion in South Africa, but there are many such sea areas around the continent where marine aquaculture could increase rapidly given the required input of investment and expertise.

Aquaculture in sub-Saharan Africa

Most of the world's aquaculture production takes place [in Asia](#), with China (60%), and the top 6 countries – all in Asia – [produce 86%](#). The rapid growth rate in aquaculture production over the last quarter of a century in Asian countries is being mirrored in the production of freshwater fish in sub-Saharan Africa.

Only [550 000 tonnes](#) of aquatic animals were grown in 2014, which is less than 1% of the world production. Almost all of this is of freshwater fish – mostly catfish, Tilapia and Nile Perch. Nigeria and Uganda are the [region's leading producers](#).

Marine aquaculture production in Africa is a more depressing story. Just 12 000t of animal production was reported in 2008, dropping to [10 000t in 2014](#). Most of this was made up of prawns in Madagascar and Mozambique, and molluscs like abalone, mussels, and oysters in South Africa. The drop in output was largely because of the [White Spot Syndrome Virus](#) in prawn aquaculture. This has decimated the industry in Mozambique and Madagascar since 2011.



South Africa's main marine aquaculture success story is the local abalone.

Mike Stekoll

One long-term marine aquaculture industry in the region is the [red seaweeds in Tanzania](#), with a figure of 13 000t in 2014. The seaweed is not eaten directly but is exported dry for overseas production of the colloid carrageenan. This is a type of jelly which is used mostly in the food industry as a thickening, gelling, stabilising and suspending agent in milk and water-based foods. The income from cultivation of these seaweeds is low from a global perspective, but makes a significant difference to household incomes in some areas, particularly in Zanzibar.

In South Africa, you're almost certainly eating aquaculture products if you order local oysters, mussels, and trout, or imported salmon, prawns, or seaweed in sushi.

South African marine aquaculture

The country's main marine aquaculture success story is the [local abalone *Haliotis midae* \("perlemoen"\)](#).

It began in the 1990s, and now around 1500t are produced annually representing over 90% of the value of [South African marine aquaculture](#). South African abalone is not grown on ropes, rafts or in cages in the sea or sheltered bays/estuaries unlike most of the global marine aquaculture. It's a high-value product, grown by pumping large amounts of seawater into tanks on land.

A large abalone farm pumps over 10 million litres of seawater per hour, with electricity for pumping a major cost

component. Such infrastructure is only economically feasible with a high-value product. Most South African farmed abalone is flown live or exported in cans to China.

The two main success stories in marine aquaculture in sub-Saharan Africa are very different: seaweed grown attached to ropes in the sea and exported as low priced raw material, and a shellfish grown in land-based systems and exported as a high priced food. Both of them provide income and employment, but not food for Africans.

There have been numerous attempts to grow marine fish and prawns in South Africa [in land-based systems](#). This works for abalone – does it often fail for fish because of a lower-priced product? Successful operations elsewhere involving sea-cage production of fish such as salmon operate as simpler systems, without [large-scale water pumping](#).

South Africa has particular constraints for marine aquaculture having a very straight coastline with high wave energy, mostly unsuitable for rafts and cages. Most of South Africa's offshore marine aquaculture happens in Saldanha Bay on the west coast, with plans to [extend the area used](#), and there are a limited number of other feasible sites.

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