

## **Can aquaculture help promote food security in South Africa?**

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World Food Day is celebrated annually on 16 October to emphasise, among other things, the importance of food security. Food security is the degree to which food is available and to which an individual has access to it.

According to the United Nations' (UN) Committee on World Food Security, food security is defined as the extent to which all people at all times have physical, social and economic access to sufficient, safe and nutritious food that meets their food preferences and dietary needs for an active and healthy life. Another is the availability of food regardless of class, gender or region. There is evidence that food security was important thousands of years ago already when ancient China and ancient Egypt made stored food available in times of famine.

The complexity of food security adds to the problem. More than 200 definitions exist for this concept. Furthermore, it has four dimensions: availability of food, access, consumption and stability/sustainability. And then there are the four levels of food security to consider: global, national, household and individual.

Our National Development Plan identifies food security as a priority. Among other things, it calls for land reform, better utilisation of agricultural land, the development of small farmers, the development of sustainable rural industries, greater investments in agri-cultivation and more efficient access to markets and financial services for farmers.

The Covid-19 pandemic and the accompanying lockdown period had a tremendous impact on the economy and citizens' well-being. Millions of people lost their jobs and poverty and starvation skyrocketed. According to an Ipsos poll, the majority of South Africans' incomes have been negatively affected by the pandemic.

To buffer this negative impact, local food production technology has to become more resilient. South Africa already has an Integrated Food Security Strategy, an Integrated Nutrition Programme, a Zero Hunger Programme, various forms of agricultural support and social grants. However, other opportunities for local food production and job creation need to be thoroughly explored.

Perhaps aquaculture can contribute to this regard.

Aquaculture can potentially make a difference and contribute to food security in South Africa. It definitely deserves more attention. Aquaculture can especially help combat unemployment, poverty and hunger in fishing communities given the fact that natural fish resources on our coast are dwindling and the populations of many local fish species are seriously threatened.

According to the UN's Food and Agriculture Organisation (FAO), aquaculture refers to the farming of aquatic organisms, including fish, molluscs, crustaceans and aquatic plants. Farming implies some form of intervention in the rearing process to improve production, such as regular stocking, feeding, protection against predators, etc. It also implies individual or corporate ownership of the stock being grown. The UN General Assembly has just declared 2022 as the International Year for Artisanal Fisheries and Aquaculture.

Aquaculture in South Africa is still in its infancy compared to wild fishing (fisheries) and still relatively small in terms of volumes. We are only 10th among African countries regarding production volumes. The focus is mainly on high-value aquaculture species with abalone being the leading species in

terms of economic value. The Department of Environment, Forestry and Fisheries' 2022 Master Plan for Aquaculture shows a tremendous growth of 75% in production over the five-year period from 2013 to 2017. Aquaculture led to a production of approximately 7 000 tonnes in 2018 with a market value of R 1 billion, excluding the tourism component.

More than 3 000 direct and 6 500 indirect jobs were created in the local aquaculture value chain for 2018. However, aquaculture has the potential to create many more jobs in South Africa. The opportunity is there to make a positive contribution to food security and job creation.

Aquaculture has the potential to:

- Increase the production levels of animal protein by the production of finfish and shellfish that will contribute to local food security.
- Produce seaweed that can be used as a source of food and fertiliser and as bio-fuel.
- Reduce the pressure on wild fish resources by offering fishermen an alternative income and livelihood.
- Supplement natural wild sources through the artificial production of indigenous fish species. This way, abalone and local finfish species, for example, can be artificially produced on land and the young animals can be returned to the sea to support the fishing industry.
- Produce food for poor communities on the West Coast where fresh water is scarce by using technology such as Aquaponics – the combination of aquaculture and plant cultivation without soil (hydroponics).
- Boost the production of freshwater fish species such as carp and catfish in order to provide food to the poor. China is a good example.
- Help the country earn foreign exchange and grow the economy through the production and export of species of a higher value such as shrimp, oysters, abalone, lobster, urchin and fan clams.

Therefore, aquaculture has the potential to make a difference and contribute to food security in South Africa. However, aquaculture is quite technical and knowledge-intensive. Furthermore, there are some challenges such as a limited number of sheltered sea areas on our coast for aquaculture, the limited number of indigenous species with aquaculture potential, the lack of funding and the economy of scale.

The government and the private sector should join hands and work together to make aquaculture more accessible to ordinary South Africans. New aquaculture legislation and the aquaculture master plan that is currently being drafted will hopefully create a local market and new business opportunities and growth in aquaculture. This is definitely something we should invest in to help promote food security and to give many South Africans the chance to put food on their tables.

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