

# SA moving to secure its share of world aquaculture growth

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South Africa's aquaculture industry, though still in its infancy, has been identified by government as a key priority sector because of its potential to supplement dwindling wild-caught fish stocks with cultured fish products.

Aquaculture – often referred to as the Blue Revolution – is the fastest-growing food-production sector in the world. It has significant job-creation potential and, as a key export-orientated sector that could net the country considerable gains, has been added to the Industrial Policy Action Plan (Ipap), which aims to build South Africa's productive sectors, so as to bolster sustainable growth and job creation.

As a result, relevant government departments, including the Department of Trade and Industry (DTI) and the Department of Agriculture, Forestry and Fisheries (DAFF), are implementing several initiatives to help boost stakeholder collaboration and provide support for industry development.

This includes the National Aquaculture Strategic Framework (NASF), which was developed in 2011 through a collaborative effort by the DAFF, the DTI and industry stakeholders as a government blueprint for the sustainable development of a viable local aquaculture sector.

The NASF was approved in 2012 by Agriculture, Forestry and Fisheries Minister **Tina Joemat-Pettersson** and officially launched in March this year by Trade and Industry Minister **Rob Davies**. The framework provides a coordinated path for the development of the aquaculture industry and identifies several interventions to unlock the potential of the sector.

This resulted in the development of a comprehensive policy for aquaculture, called the National Aquaculture Policy Framework, which was approved by Cabinet in May and will be published soon, according to DTI industrial development incentives deputy director-general **Tumelo Chipfupa**.

Another key NASF intervention project already under way is the R800-million Aquaculture Development and Enhancement Programme (Adep), launched in March by Davies, who has since acknowledged the "enormous" untapped opportunities in South Africa's aquaculture sector.

Aimed at stimulating investment to increase production, sustain and create jobs, encourage geographical spread and broaden industry participation, Adep is an incentive scheme that offers a reimbursable cost-sharing grant of up to R40-million to locally registered enterprises involved in primary, secondary and ancillary aquaculture operations. Adep was implemented in September 2012 and will remain open to industry stakeholders until March 31, 2018.

"The programme has already committed more than R20-million in support to farmers, with more applications being received," says Chipfupa, adding that the DTI has received 11 applications to date, three of which have been awarded grants.

He envisages that, following provincial workshops to popularise Adep, more fish farmers, entrepreneurs and potential aquaculturists will participate in the scheme.

Chipfupa tells *Engineering News* that the initiatives currently under way to develop the aquaculture sector are showing positive outcomes and that the proportion of aquaculture output is increasing, as it currently constitutes 1.5% of South Africa's total fisheries output, up from 0.2% in 2008.

Based on modest targets outlined in the NASF, Chipfupa expects the sector to reap a production increase of more than 100% by 2020, which will be preceded in 2016 by a mid-term review of the NASF, aimed at providing a holistic account of how aquaculture has progressed since the establishment of the framework.

The DAFF hopes to establish aquaculture development zones (ADZs) under the NASF mandate to create an enabling environment for aquaculture development.

This ties in with South Africa's move to include special economic zones (SEZs) in its industrial and economic development toolbox to hopefully stimulate fixed investment in particular industries, such as aquaculture, to contribute to the country's reindustrialisation thrust.

The location of ADZs will be based on the availability of State-owned land and suitable sea space that is conducive to the cultivation of various aquaculture species in and along coastal provinces.

According to the DAFF's Aquaculture Yearbook 2012, published in December 2012, suitable areas will undergo environmental-impact assessments (EIAs) and basic infrastructure will have to be constructed before they can be declared ADZs.

The establishment of Qolora, in the Eastern Cape, as the first land-based ADZ is under way and will be finalised once the relevant infrastructure has been established. Further, additional EIAs will soon be conducted for two other land-based ADZs, namely the Buffelsrivier ADZ, in the Western Cape, and the Amatikulu ADZ, in KwaZulu-Natal.

In addition, the DAFF is facilitating the EIA of the first sea-based ADZ along the Eastern Cape coastline.

Meanwhile, the Western Cape government has been aggressive in its approach to develop aquaculture policy and strategy in the province.

Western Cape Finance, Economic Development and Tourism Minister **Alan Winde** announced in June that the department, the DAFF and stakeholder-driven body the Western Cape Aquaculture Development Initiative (WCADI) were working together to declare the area from Hermanus to Gansbaai an SEZ. Ultimately, this decision rests with the DTI.

Winde also announced that the Western Cape government aimed to facilitate a R50-million investment in the sector during this financial year. "Many farms in the Western Cape are expanding, which creates more jobs, especially in the rural and coastal areas. This is why the Western Cape government, through the WCADI, supports the growth of the aquaculture industry," said Winde.

Further, the department is negotiating with the Department of Public Works to transfer suitable land to municipalities, in the Western Cape, to develop abalone farms.

Industry stakeholders seem positive about government's initiatives to develop aquaculture in South Africa, despite most of the initiatives still being in the introductory phase.

“Adep is, to date, the most comprehensive support that we’ve had for the sector and we remain positive that it will stimulate some investment,” says independent nonprofit organisation the Abalone Farmers Association of South Africa chairperson **Christo du Plessis**, who also heads up Western Cape-based abalone farm, Abagold.

Du Plessis tells Engineering News that government support for the industry has significantly improved in recent years, especially under the auspices of President **Jacob Zuma**, who established the DAFF as a separate government department in 2009.

The DAFF, which acts as the lead agency for aquaculture development in South Africa, has since established a Chief Directorate for aquaculture and economic development. This team is dedicated to promoting aquaculture to contribute meaningfully to job creation, economic development, sustainable livelihood, food security, rural development and transformation in South Africa.

Du Plessis emphasises that the DAFF’s aquaculture team has been doing well with the resources at their disposal, but highlights industry’s concern that the team has had to work within the mandate of the DAFF’s fisheries management branch.

He explains that, while the department seems keen on developing aquaculture, placing it under the mandate of the fisheries management branch has been ineffective, as the branch has not historically dealt with freshwater aquaculture and rather focuses on policing activity. The implication is that aquaculture would be better suited to being placed under an agricultural mandate within the DAFF.

“The management of aquaculture is different from that of a regular fishing environment, where scarce resources need to be allocated to private companies. We are the only agricultural sector, which I am aware of, that requires long-term rights and yearly permits to farm,” says Du Plessis.

World Wide Fund for Nature South Africa (WWF-SA) marine programme senior manager John Duncan mirrors Du Plessis’s concerns, highlighting government’s “uncoordinated approach to managing aquaculture” as a significant challenge. He explains that, within WWF-SA, aquaculture is an area of work that impacts on several programmes, including the marine programme, the sustainable agriculture programme and the freshwater programme, making it difficult to ascertain which department should take responsibility for aquaculture-related issues.

“Government faces a similar challenge and is still finding its feet in terms managing the sector properly,” says Duncan.

Rhodes University Fisheries Science professor **Peter Britz** explains that, unlike the traditional agriculture sector, the DAFF’s fisheries management branch is not historically orientated towards development.

However, as government continues to recognise the needs of small-scale fishing communities, this will soon change.

“The aquaculture Chief Directorate has made great advances in addressing the development needs of the sector through policies like the NASF and government’s focus on building internal capacity and establishing links with other government departments,” says Britz.

He tells Engineering News that the Marine Living Resources Act (MLRA), which classifies aquaculture as a fishery sector, is currently being reviewed by the DAFF’s Chief Directorate, with the consensus that aquaculture should be moved out of its current jurisdiction and placed under a more appropriate legislation.

While government's effort to promote aquaculture has generally been perceived as a step in the right direction, several challenges remain, bringing the industry's potential into question.

One such challenge is industry's concern that South Africa does not have the ideal environment for aquaculture development. In terms of marine aquaculture, Duncan explains that South Africa's coastal areas are too exposed, lacking the sheltered bays needed to rear fish in cages or pens.

While countries like Scotland and Norway have successfully managed to farm salmon, owing to the prevalence of fjords in the region, South

African cage farming has been relatively unsuccessful, as a result of the damage sustained by the cages in an exposed environment.

"South Africa has too few sheltered bays to seriously consider marine aquaculture as an option," says Duncan.

Britz, however, maintains that South Africa's coast has some production potential. "The technology for high-seas aquaculture exists.

Therefore, the challenge lies in economics and whether the cost of production justifies investment." He tells Engineering News of a successful cage-culture pilot project in Port Elizabeth, which farms dusky cob and yellowtail, and adds that a second pilot project for rearing salmon, offering sheltered water, has been approved at Saldanha Bay, north-west of Cape Town.

In terms of freshwater aquaculture, however, Britz reports that South Africa's environment provides limited potential. He explains that the weather is too temperate to farm large amounts of warm-water fish like trout, tilapia and catfish, which require tropical weather all year round.

Britz adds that, while demand for trout is high, South Africa does not have enough cold mountain streams to support higher production rates in freshwater aquaculture, despite the current production growth in Lesotho, where two major trout farms are being developed at Katse Dam.

Britz also says that rising electricity costs are a general concern for aquaculture stakeholders, including abalone farmers, who use a significant amount of power to pump water onshore and into tanks.

"Farmed products, therefore, tend to be quite expensive. The challenge is to reduce production costs and align them with competing imports," he says.

Most fish products sold by local retailers and served in restaurants are imported. These include mussels from New Zealand, catfish from Vietnam and salmon from Norway, among others, which are mostly farmed fish products. "Policy is a concern. We should produce fish to supply our own market and create jobs, but it's been a challenge to produce cost-effective products," says Britz.

With the sector still in its infancy, most industry stakeholders are pioneer farmers dealing with vertically integrated enterprises, which increases economies of scale and transaction costs, thereby impacting negatively on international competitiveness.

"If one's transaction costs are higher than those of established competitors in other parts of the world, then you can't get a foot in the door," explains Britz.

This challenge, however, is the rationale behind government's decision to highlight aquaculture as a key priority sector in line with Ipap, as subsidising pioneer farmers and encouraging sector investment will reduce transaction costs, making aquaculture a more viable sector through increased competitiveness. Britz tells *Engineering News* that, if all goes as planned, government's initiatives under the NASF will open the door for investment to kick-start the sector which, once it reaches critical mass, will enable industry to become sustainable.

"Still, implementing the NASF is going to be a real challenge, as government departments tend to work in silos, making it difficult to coordinate cross-cutting initiatives, which involve infrastructure development, investment management, marketing and the procurement of EIAs. No government department has all of these capabilities."

Britz adds that, if government wants to realise its goals for aquaculture, it needs to establish an overarching development agency to manage the industry.

Recognising this, government has highlighted the WCADI as an effective vehicle promoting investment into aquaculture and an appropriate institutional model to extend into a National Aquaculture Development Initiative, or NADI.

"The industry is also in the process of forming a producer umbrella association to be named AquacultureSA, akin to agricultural trade association AgriSA or forestry management association ForestrySA, which will work with government to promote aquaculture development," reports Britz.

While challenges remain there are, nevertheless, identifiable areas within aquaculture that have the potential to grow under the NASF.

While stakeholders agree that there is scope to develop salmon and trout production, despite concerns about freshwater development, abalone remains the highest-contributing subsector and is responsible for more than a quarter of South Africa's aquaculture production, having produced 1 036 t out of a total of 4 804 t of aquaculture output in 2012.

Moreover, abalone production is forecast to double over the next five years, with committed investment from several firms projected to expand production capacity.

The premium value of South African-reared abalone in the Far East means that South African operators are internationally competitive, which does not apply to many other local species.

Du Plessis tells *Engineering News* that the South African species of abalone has several positive attributes, such as size, colour and taste, making it the most sought-after abalone species after Japanese-reared abalone.

Live abalone currently sells for between \$25/kg and \$40/kg, ex farm, though international prices are dropping with the rapid increase of worldwide abalone production, which is causing a supply surplus and putting pressure on international prices.

Du Plessis believes that international competitiveness will increase as a result and warns South African producers to become innovative when processing and marketing their abalone product to maintain and grow current profit margins.

Meanwhile, dusky kob, a popular linefish in South Africa, is now in commercial production in the East London Industrial Development Zone and is being sold as a WWF Southern African Sustainable Seafood Initiative (Sassi) green-listed species in retailers such as Woolworths, Pick n Pay and Checkers.

Britz tells *Engineering News* that the farmed kob enjoys a competitive advantage over wild-caught kob, which is classified as WWF-Sassi orange, indicating that it has associated environmental concerns and consumers should avoid buying it.

“With the growing trend towards local, authentic and sustainable products, aquaculture enjoys potentially significant comparative advantages over wild-caught products.”

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<http://www.engineeringnews.co.za/article/sa-moving-to-secure-its-share-of-world-aquaculture-growth-2013-07-26-1>