



Dredging in Gordon's Bay Harbour

# Clearing environmental hurdles in marine infrastructure

## INTRODUCTION

The South African government's Operation Phakisa – or 'hurry up' – initiative is designed to help fast-track the implementation of the National Development Plan, a key driver of change to address poverty, unemployment and inequality.

SRK Consulting's Cape Town office has undertaken environmental authorisation and permitting processes for various Operation Phakisa projects, and a few of the successes and challenges in implementing these projects are highlighted below.

An important aspect of Operation Phakisa is the Oceans Economy Lab, launched in 2014 to accelerate the process of unlocking the economic potential of South Africa's oceans. Government hopes the Ocean Economy could contribute up to R177 billion to the country's gross domestic product (GDP) and create over one million jobs by 2033. It is therefore viewed as a high priority.

The six focus areas in the Ocean Economy are:

- Marine transport and manufacturing
- Offshore oil and gas exploration
- Aquaculture
- Marine protection services and ocean governance
- Small harbours and coastline development.

Some 47 marine-related projects – in both the private and public sectors – are currently included in this effort, which by 2019 could increase the ocean economy's contribution to GDP by R20 billion and create 22 000 new jobs.

Before the infrastructure for these projects can be rolled out, however, there are environmental considerations – the likely impacts must be assessed, mitigation measures proposed and applications made for the necessary authorisations.

Working with project engineering companies and government departments, SRK has provided independent consultancy

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services for small harbour infrastructure, aquaculture and seismic surveys for offshore oil and gas exploration.

## FISHING HARBOUR IMPROVEMENTS

SRK provided environmental services and advice about critical repairs and upgrades at fishing harbours in Kalk Bay, Hout Bay, Gordon's Bay, Hermanus, Pepper Bay, Saldanha Bay, Lambert's Bay, Laaiplek and St Helena Bay to improve capacity and facilitate the important work of the National



Refloating a sunken vessel in Hout Bay Harbour



the Department of Agriculture and Forestry and Fisheries (DAFF) is creating an aquaculture development zone (ADZ) in the bay, for which SRK undertook an environmental impact assessment (EIA) process. The ADZ is intended to help smaller operators become compliant when farming in the zone. Previously each operator in the area had to undergo their own authorisation process. The new arrangement allows greater ease of access to new market entrants, in line with government policy to promote economic inclusion.

An important benefit of aquaculture is that it can absorb relatively unskilled labour, as well as provide the transfer of skills to local community members in Saldanha Bay.

The work included an EIA, a number of specialist studies, and a stakeholder engagement process. In this case, there was widespread public interest – much of this related to the potential effects of the project on the nearby Langebaan Lagoon Ramsar site.

SRK recognised stakeholder concerns and the sensitivity of the environment,

Sea Rescue Institute (NSRI), which was unable to launch boats at low tide in some harbours. The work included obtaining dumping-at-sea permits for the marine disposal of dredged material, a maintenance management plan for upgrades and dredging at Gordon's Bay Harbour and environmental supervision of the removal of sunken fishing vessels.

To reduce waste, costs, permitting requirements and environmental impacts, SRK assisted the Department of Public Works in obtaining authorisation for a beneficial use of the dredged material – rather than requiring dumping at sea. The dredged sand from the harbour basin is being pumped onto Bikini Beach, which has lost considerable volumes of sand over the last decade, to widen the beach and benefit local and visiting beach-goers.

At other harbours, dredged sand will be disposed of at off-shore sites approved by the Department of Environment Affairs: Oceans and Coasts.

Sediment was sampled to ensure that the dredged material did not exceed legal limits of certain contaminants which – in terms of South Africa's National Action List, required by the internationally-recognised London Protocol – would have made it unsuitable for dumping at sea. SRK obtained the necessary environmental approvals, and the company's experts are also equipped to provide audit compliance reviews, ensuring that projects remain compliant through their life cycles.

### AQUACULTURE DEVELOPMENT ZONE

To help realise the full potential of the aquaculture industry in Saldanha Bay,

Mussel rafts near the iron ore terminal in Saldanha Bay





Mussel rafts near the causeway in Saldanha Bay

and, in consultation with DAFF, addressed these in three innovative ways. Firstly, modifications were made to the initial proposals, and the new proposed ADZ precincts were reduced by 70%. Secondly, production will be phased in gradually, based on water quality and bay health monitoring results. Thirdly, a consultative forum will be established for the public to access primary monitoring and operational information.

This is expected to create greater transparency and public trust, and ultimately support the long-term success and sustainability of the ADZ and the many

other activities in the bay. On the strength of this approach, the project received environmental authorisation, which was also upheld upon appeal.

It is estimated that the project has the potential to create 850 direct jobs – and more indirect employment on land in activities like processing – if the full scale of the ADZ can be sustainably realised. In this scenario, perhaps 2 500 local dependents could be supported. Given the depressed economic conditions in South Africa, it is critical to generate sustainable jobs and income without affecting other economic sectors.

## LAND-BASED AQUACULTURE

In the Matzikamma Municipality on the West Coast, agriculture and fishing are no longer the main contributors to the local economy they once were. To stimulate economic activity by leveraging local resources, the municipality is hoping to promote aquaculture projects such as abalone farming.

An EIA process was conducted for the Matzikamma Municipality for a land-based abalone farming project comprising four sites along the coast near Doringbaai. SRK played a key role in guiding the client in identifying the most appropriate sites for the abalone farms and associated



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The Matzikamma Municipality coastline was deemed suitable for land-based aquaculture farming

infrastructure (for example, seawater extraction and brine discharge points). Taking the development and technical criteria provided by the client into consideration, SRK advised on the most appropriate abalone farm layouts without compromising sensitive natural or cultural areas.

Stakeholders were also particularly concerned about losing recreational access to the coast, which is already affected by mining operations in the area. To address these concerns, the abalone farm layouts were attuned to consider key coastal access points without affecting the viability of the project.

The environmental authorisation has since been granted by the Department of Environmental Affairs.

### OFF-SHORE OIL AND GAS

While South Africa is not a substantial oil producer from off-shore wells, some resources are being exploited. A number of relatively short-term seismic surveys have been conducted in South Africa's Exclusive Economic Zone (EEZ) to explore for further oil and gas resources, and more are being considered. SRK has

conducted independent EIA processes for several such surveys off the south and west coasts of South Africa.

The EIAs focus primarily on the impact of seismic surveys on marine fauna, including whales, dolphins, seals, turtles and other sea life. Impacts on marine fauna – mostly as a result of airgun noise – are generally understood, and international best practice mitigation measures are applied in South Africa. These include avoiding operation in close proximity to key species, monitoring the seas around the vessel for marine fauna and starting airguns slowly.

Critically, the EIA also considers the specific area in which the activity is planned, taking account of sensitive resident fauna and species migrating through the area. Marine biologists explore these aspects and propose additional site-specific mitigation measures if required, such as additional exclusion zones and avoiding certain times of the year when whale migrations occur.

Impacts on the fishing industry must also be considered and can result from displacement of fish or fishing vessels due to noise and the survey vessel exclusion zone. SRK contracts fisheries

experts for specialised input on these aspects and consults with potentially affected stakeholders.

### CONCLUSION

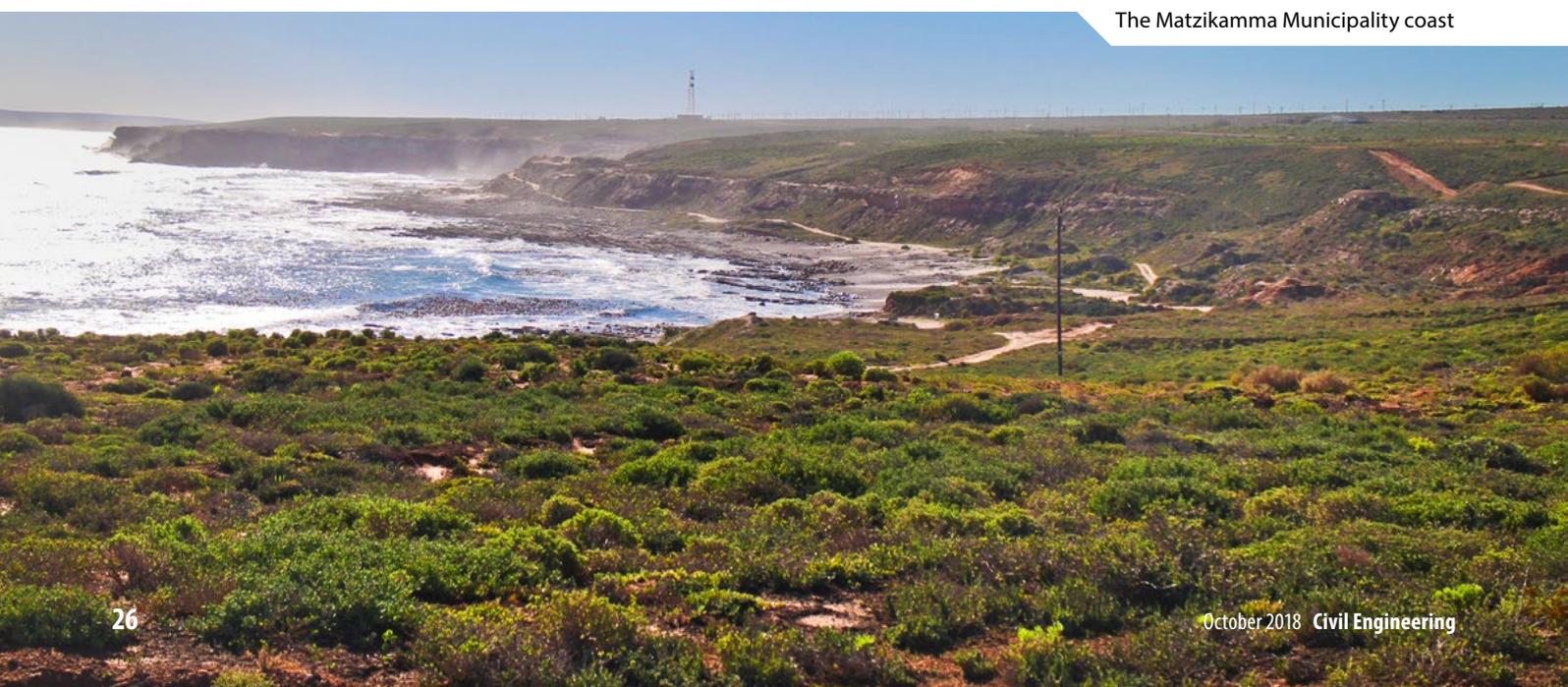
Operation Phakisa has the potential to improve marine infrastructure and production to promote urgently needed job creation, upskill local communities, and improve the economic utilisation of the country's EEZ. As with all projects, they also have the potential to generate negative impacts. As such, benefits would be diminished if the environmental sustainability of these projects is compromised by poor planning, regulation and monitoring.

It is therefore important to recognise the value of the regulatory processes leading up to the implementation of marine Operation Phakisa projects. While the character of those projects varies, a key to compliance is understanding EIA processes – which are increasingly complex and deadline-driven.

It is essential to identify the type of impacts that could be anticipated, which specialists need to be engaged and how to mitigate impacts effectively without compromising project viability.

An effective EIA process also requires that the specialist reports are well consolidated and aligned, using a 'common impact rating language' that the proponent and other stakeholders can easily understand.

Engagements with stakeholders is also critical. In addition to the numerous detailed scientific studies carried out for EIA processes, public participation is crucial in ensuring the sustainability of projects. ■



The Matzikamma Municipality coast