



Marine and coastal management

The South African fishing industry was once concentrated in the hands of a few, largely big white-owned companies. Subsistence fishers were not recognised by law and were often criminalised for their attempts to feed their families. A high degree of transformation has taken place in the fishing industry in a very short space of time without compromising the principle of sustainable utilisation, fundamental to the management of fisheries.

Today, the fishing sector is far ahead of other sectors of the economy in terms of participation by historically disadvantaged individuals (HDIs). Currently there is an approximate 43% HDI shareholding in the deep-sea hake fishery. South Africa's industrial fisheries are widely considered to be among the best managed in the world.

The South African coastline is more than 3 200 kilometres in extent, linking the east and west coasts of Africa. From the coral reefs of northern KwaZulu-Natal to the cool-water kelp forests of the Northern Cape, South Africa's shores are particularly rich in biodiversity: some 10 000 species of marine plants and animals have been recorded in our waters.

The responsible utilisation and management of the country's marine and coastal resources is of vital importance to the wellbeing of South Africa's people and economy. Impoverished rural communities find direct employment in the fishing industry, and more people also find employment in related sectors. South Africa's fishing industry contributes at least R5 billion a year (0.7%) to the GDP. The aquaculture production is in the region of 4 000 tons a year. With the department's aim to develop the industry, this figure is likely to increase, benefiting coastal communities.

South Africa's coastline is a unique part of our environment. It is a limited area that supports many human activities. The integrity of this sensitive environment needs to be preserved

through integrated management to ensure sustainable development. Maintaining the biodiversity of the marine and coastal ecosystems is also essential to the survival of species and ecosystems. The department's task of promoting the development and management of the country's marine and coastal environments in a way that ensures the sustainability of its marine resources, while maximising economic opportunities, is located within a number of international laws and protocols.

The most significant of these is the United Nations Convention on the Law of the Sea, which was ratified by South Africa in 1982. This convention sets limits related to the use of the sea in terms of navigational rights, territorial sea limits, economic jurisdiction, legal status of resources on the seabed beyond the limits of national jurisdiction, the conservation and management of living marine resources, and the protection of the marine environment. It is an unprecedented attempt by the international community to regulate all aspects of the resources of the sea and uses of the ocean, and thus bring a stable order to mankind's very source of life.

The department's promotion of the principles of sustainable development in terms of the marine environment are based on the principles of Agenda 21, whereby the marine environment, including all oceans and all seas and adjacent coastal areas, forms an integrated whole that is an essential component of the global



Fishing vessels ensure an income for small-scale fishers.

life support system and a positive asset that presents opportunities for sustainable development.

The principles that South Africa embraced through its acceptance of Agenda 21 at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil, in 1992, included the integrated management of coastal areas, the sustainable use and conservation of living resources in the exclusive economic zone (EEZ), the protection of the marine environment by managing pollution and promoting the sustainable use and conservation of living resources in the high seas.

The department also promotes South Africa's interests by participating in a number of international commissions, such as the International Commission for the Conservation of Atlantic Tunas, the Commission for the Conservation of Antarctic Marine Living Resources and the International Whaling Commission. DEAT's interest is to share research, especially into stocks that straddle international waters, as well as moving into the country's EEZ and to secure quotas for its fishing fleets in international waters.

In 1995, South Africa embraced the United Nations Implementation Agreement, which relates to the conservation and management of straddling fish stocks and highly migratory fish stocks. It also accepted the United Nations Food and Agriculture Organisation's Code of Conduct for Responsible Fisheries, which advocates that countries should have clear and well-organised fishing policies. In 1996, the Johannesburg Plan of Action, which was signed at the World Summit on Sustainable Development, committed South Africa to protecting and managing the natural resource base for economic and social development. Among its objectives were to restore stocks to their maximum sustainable yield by 2015, to protect biodiversity within and beyond the limits of national jurisdiction, to launch a national programme of action to protect the marine environment from land-based activities, and to improve the scientific understanding of marine ecosystems for sound decision-making.

At a regional level, South Africa is a signatory to the Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region and Related Protocol (the Abidjan Convention), signed in 1984, the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the East African Region and Related Protocols (the Nairobi Convention), signed in 1985, and the SADC Fisheries Protocol, signed in 2003.

It plays an important role in activities related to the management of resources in subregional waters. Research programmes that benefit the entire subregion primarily address issues related to cross-boundary ecosystems. These include the Benguela Current Large Marine Ecosystem (BCLME), the Agulhas and Somali Current Large Marine Ecosystem (ASCLME) and the South West Indian Oceans Fisheries Programme (SWIOFP), as well as Addressing Land Based Activities in the Western Indian Ocean (WIO-Lab) programmes. These programmes promote an ecosystems approach to fisheries management and are primarily aimed at improving the structures and capacities of these countries to deal with problems and issues that occur across national boundaries in order for the ecosystem to be managed as a whole.

The mandate of the department's Marine and Coastal Management branch is the management, development, sustainable use and orderly exploitation of South Africa's marine and coastal resources, as well as protecting the integrity and quality of the marine and coastal ecosystems. Its activities are focused on marine resource management, marine research, vessel deployment and management, integrated coastal management, monitoring, control and surveillance, and the management of the Marine Living Resources Fund. This mandate is a complex and often controversial one. The achievement of a healthy balance between sustainable utilisation of marine and coastal resources, on the one hand, and the protection and conservation of these same resources, on the other, is an ongoing challenge that requires careful strategies.

Marine resource management

Prior to 1994, marine and coastal management was governed by the Sea Fisheries Act, which made provision for a Quota Board that allocated quotas to quota holders and limited access to marine living resources to a select few. In 1996, the 10 biggest quota holders held 82% of the total allowable catch (TAC) for hake and 95% for abalone. A milestone for marine resource management in South Africa was the publication of the White Paper on Marine Fisheries Policy in 1997, and the passing of the Marine Living Resources Act in 1998, which repealed most of the Sea Fisheries Act of 1988.

“All our natural living marine resources and our marine environment belong to all the people of South Africa.”

Marine Living Resources Act, 1998

This established a fundamental transformation in the policy and regulatory framework for fisheries management in South Africa. It made provision for the overall contribution of the fishing industry to the long-term vision for a democratic South Africa. It addressed access and historical imbalances and paved the way for a series of policies and guidelines for medium- and long-term rights allocation in commercial and subsistence fisheries, as well as marine aquaculture.

The Marine Living Resources Act has the following principles and objectives:

- Achieve optimum utilisation and ecologically sustainable development of marine living resources.
- Conserve marine living resources for both present and future generations.
- Apply precautionary approaches in respect of the management and development of marine living resources.
- Utilise marine living resources to achieve economic growth, human resources development and capacity-building within

a sound ecological balance, consistent with the development objectives of national government.

- Protect the ecosystem as a whole, including species that are not targeted for exploitation.
- Preserve marine biodiversity.
- Minimise marine pollution.
- Achieve, to the extent practicable, a broad and accountable participation in the decision-making processes provided for in this act.
- Deliver any relevant obligation of national government or the Republic in terms of any international agreement or applicable rule of international law.
- Restructure the fishing industry to address historical imbalances and achieve equity within all branches of the fishing industry.

The Marine Living Resources Act provides the overarching legislative framework for research, management, and monitoring, control and surveillance. Policies include a general policy on the allocation and management of fishing rights, fishery sector-specific policies, the Draft Policy on the Transfer of Commercial Fishing Rights and the Draft Policy for Subsistence and Small-scale Fisheries.

In 2001, the department moved away from allocating annual quotas to allocating four-year rights. In 2005, with the expiry of the four-year rights, the department embarked on a process of allocating long-term commercial fishing rights for periods of between eight and fifteen years. In this regard, a General Fishing Policy and 20 fishery-specific policies were developed to guide the allocation of long-term rights. A total of 2 542 rights were allocated in 20 fishery sectors after the appeals had been concluded.

The first ever draft policies on subsistence and small-scale fisheries were gazetted in November 2006 for public comment. A revised Draft Policy for the Allocation and Management of Medium-term Subsistence Fishing Rights was gazetted on 12 December 2008. The finalisation of this policy and management regime is a key priority for the department.

A Policy on the Management of Seals, Seabirds and Shorebirds has been developed that makes provision for the mitigation of threats to the survival of seals, seabirds and shorebirds. Following on the policy, a National Plan of Action for reducing the incidental catch of seabirds in longline fisheries (NPOA for Seabirds) was developed and published in August 2008. Work on the National Plan of Action for Sharks is being developed. A Policy for the Management and Allocation of Commercial Fishing Rights in the Large Pelagic (Tuna and Swordfish) Fishery was finalised, and this guided the allocation of rights process on 30 January 2009.

To ensure the sustainability of hake and abalone stocks, a protection plan has been developed for these species to address their continuing depletion. The abalone fishery was closed down in February 2008 to allow these resources a chance to recover. A recovery monitoring plan has been developed. A Hake Protection Strategy was developed and implemented, which entails management, research and monitoring, control and surveillance activities. The department continued its involvement and participation in regional fisheries management organisations (RFMOs) to broaden access to fish resources on the high seas.

Research, Antarctica and Islands

The department's management decisions for marine living resources are guided by scientific research and international best practice. To this end, it conducts routine ship- and land-based surveys of all the major fisheries on an annual basis. The scientific information on the state of fish stocks is combined with catch statistics to generate annual recommendations on sustainable total allowable catch (TAC) and/or total allowable effort (TAE) in each fishing sector. Through these fisheries stock assessments, it has been possible to manage trends in stocks over several years in order to improve the management of risk and industrial stability, rather than through annual assessments of the stocks in South Africa's territorial waters. Operational management procedures have been introduced to determine how to increase average yields and improve average economic gain. Information on the dynamics of these resources, including environmental influences on their abundance and distribution, is also gathered, analysed and reported on.

Initially, the primary focus in marine research was on information about resources and rational exploitation, managed by scientists and the Sea Fisheries Research Institute.

A single-species approach was followed in the research and management of fish stocks, which may have contributed to the decline in some resources. By 1994, however, Marine and Coastal Management was operating in a changing policy regime, which demanded a balance between the environment, resources and conservation research. An ecosystem approach to fisheries management gained emphasis, which sought to protect and enhance the marine ecosystem health as a whole. This approach depends on balancing the diverse needs and values of both present and future generations, and takes account of the impact of fisheries on other elements of the ecosystem, as well as the impact of the environment and climate change on fisheries.

The ecosystem approach strives for sustainable fisheries management, including through the cross-sectoral and transboundary management of fisheries. Since 2002, the department has been supporting the ecosystem approach to fisheries management by collaborating with its neighbours in the Benguela Current Large Marine Ecosystem (BCLME) and since 2007 with the Agulhas and Somali Current Large Ecosystem (ASCLME) programmes.

South Africa maintains a permanent presence in Antarctica and has four main areas of interest in the continent, namely scientific, economic, strategic and weather services. South Africa is the only African signatory of the Antarctic Treaty and continued to play a significant role in Antarctic Treaty issues. The department is currently responsible for providing logistical support to science in Antarctica and the Prince Edward and Gough Islands by maintaining bases there year-round. A new base is under construction and nearing completion on Marion Island. The *SA Agulhas*, South Africa's Antarctic research and supply vessel, is managed by the department and undertakes annual relief voyages to Antarctica and the three islands.

Although environmental data has been collected since the 1950s, climate change impacts were not detected until recently

because of high inherent variability and natural cycles in resource shifts. A greater involvement in climate change research with regard to the oceans is required, as is multi-stakeholder involvement, including spheres of government and the private sector.

The department has increased the size, reach and capability of its fleet by commissioning and taking delivery of several new state-of-the-art research vessels. The department's research vessels consist of the polar vessel, the *SA Agulhas*, the newly acquired vessel for inshore resources and environmental research, the *Ellen Khuzwayo*, and the *FRS Africana* and *FRS Algoa*, the latter two being established deep-sea multipurpose research vessels.

Integrated coastal management

The coastline is a unique part of our environment and is a limited area that supports many human activities. The coast also holds great economic value, with coastal goods and services estimated to contribute 35% to South Africa's GDP. The only way to maximise coastal economic and social opportunities, while conserving coastal resources, is for development to be ecologically, socially and economically sustainable. This dictates that the coast must be viewed as a system and managed as such.

In 1989, the Environmental Conservation Act was promulgated to halt the indiscriminate development that was taking place along the coast due to the fact that existing legislation largely ignored natural coastal processes. Although it attempted to restrict negative impacts, it had a narrow perspective and failed to address access. Agenda 21 called for a broader vision for managing the coast in an integrated manner. This led to the development of the White Paper on Sustainable Coastal Development, published in 2000.

One of the key messages of the white paper was the need to move away from South

Marine research provides management information.

Africa's historical approach to coastal management, which was fragmented and uncoordinated, and undertaken largely on a sectoral basis, maximising single-purpose and exclusive use of areas and resources. The white paper promoted a holistic way of thinking by promoting coordinated and integrated coastal management. This brought about an integrated, coordinated and cooperative governance of the coast by authorities at national, provincial and local level, and promoted a more holistic approach to protecting the country's coastal resources in an ecologically, socially and economically sustainable manner. It also addressed the long-standing and contentious issue of public access to the coast.

The National Environmental Management: Integrated Coastal Management Act (Act No 24 of 2008) was enacted on 11 February 2009. It aims to establish a system of integrated coastal and estuarine management in South Africa, including norms, standards and policies, to promote the conservation of the coastal environment, and the sustainable development of the coastal zone. It also defines rights and duties in relation to the seashore and other coastal areas. It prohibits incineration at sea, and controls dumping at sea, pollution in the coastal zone and other adverse effects on the coastal environment. It gives effect to South Africa's international obligations in relation to coastal matters and makes provision for matters connected to these obligations. This act will improve the protection and appropriate development of South Africa's coastal zone, while maximising economic and social opportunities for wealth creation and equity.

Ongoing work is undertaken in terms of environmental protection, including the development of legislation to control the use of 4x4 vehicles in the coastal zone. Non-consumptive activities are also addressed. These are activities such as boat-based whale-watching and white shark cage diving, which had developed in an unregulated manner. The approval and publication in the Government Gazette of policies to regulate

these activities will lead to more effective management with a rights allocation process underway.

Research has also been conducted to explore the optimal use of fishing harbours. Feasibility studies aimed at improving the management of 12 proclaimed fishing harbours have been finalised and management options will be identified for the future use of these harbours by National Treasury, the Department of Public Works and the department.

The department is responsible for the management of 21 marine protected areas, which aim to protect biodiversity, build up fish stocks and regulate the activities of users. Over the past five years, the department has focused not only on extending the area brought under protection, but also on ensuring the effective management, monitoring and surveillance in promulgated marine protected areas through partnerships with other conservation agencies. By extending the marine area that is brought under protection, the department can ensure the effective management, monitoring and surveillance of promulgated marine protected areas through partnerships with other conservation agencies and the development of management plans.

In the past, the focus in terms of marine pollution was on combating oil spills. However, many of South Africa's marine environments are heavily impacted on by a variety of human activities. The major threats include oil pollution and land-based sources of pollution. A National Programme of Action has been developed in collaboration with key role-players to protect the marine environment from land-based activities such as municipal waste water and sewage, industrial effluent and agricultural run-off. The National Programme of Action has identified 14 priority areas that will be addressed over the next few years.

Marine aquaculture has been identified as a developing sector that could contribute significantly to the country's food security,

while managing and regulating an industry in a manner that would advance environmental sustainability, growth of the industry and economic growth.

Following the approval of the Marine Aquaculture Policy, a Draft Marine Aquaculture Policy Implementation Plan was developed to establish a viable aquaculture industry. Various guidelines have been developed, including guidelines for sea-ranching (the release of identifiable aquaculture products into the sea area where exclusive access is confined to a limited number of harvesters). These guidelines have been published for comment. Other guidelines include those for stock enhancement (the release of stock for the public good without the intention of directly benefiting an exclusive user group).

A Marine Aquaculture Advisory Forum (MAAF) has been established to effectively implement the policy plan. The MAAF is supported by a number of working groups aimed at structuring the development of implementation plans around a number of key focal areas. Feasibility studies have been undertaken in the four coastal provinces to

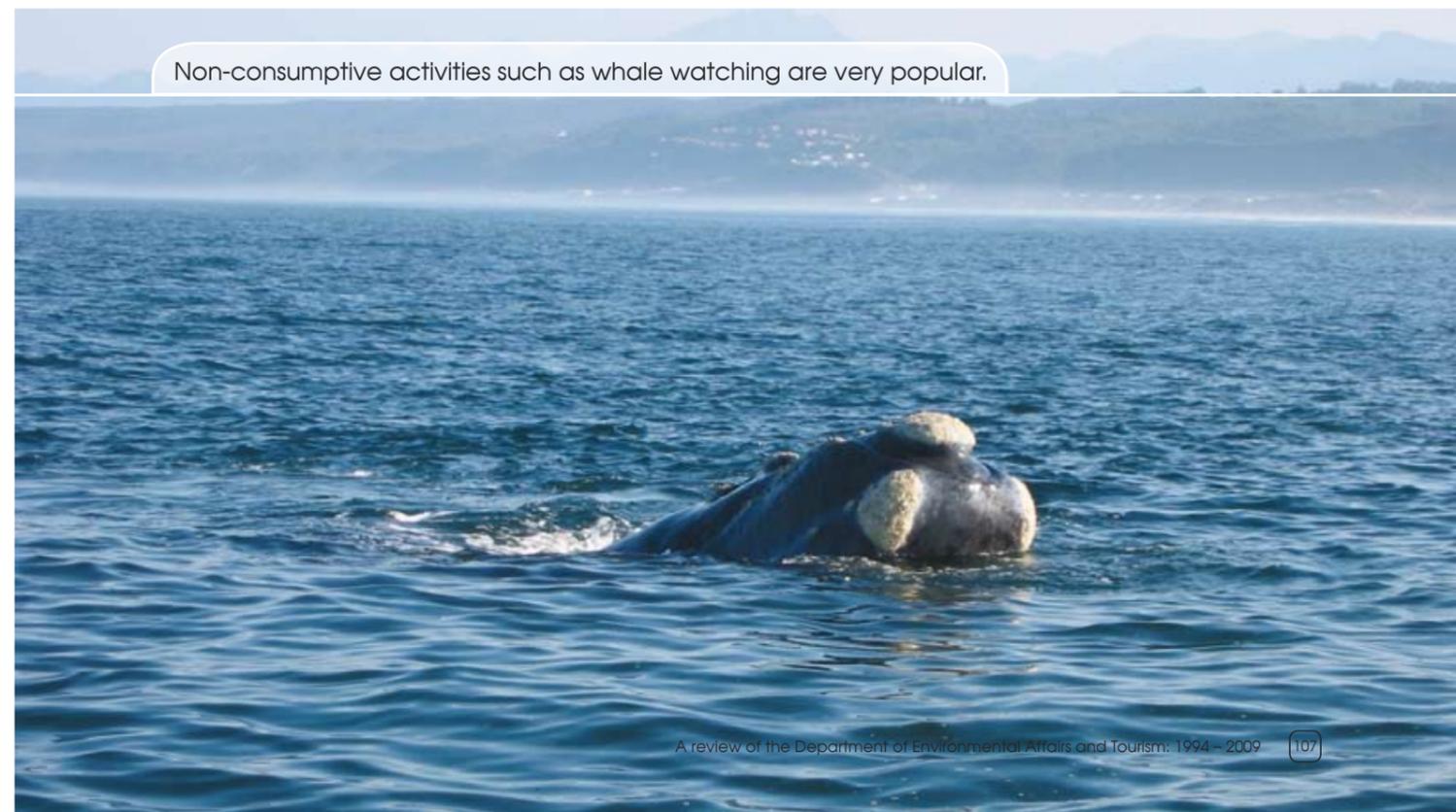
identify potential sites and species for marine aquaculture development in each province. Research is being conducted on three species to ensure that marine aquaculture is managed in a sustainable manner that is not detrimental to the environment. A draft paper has been developed for the implementation of the pilot projects.

Monitoring, control and surveillance

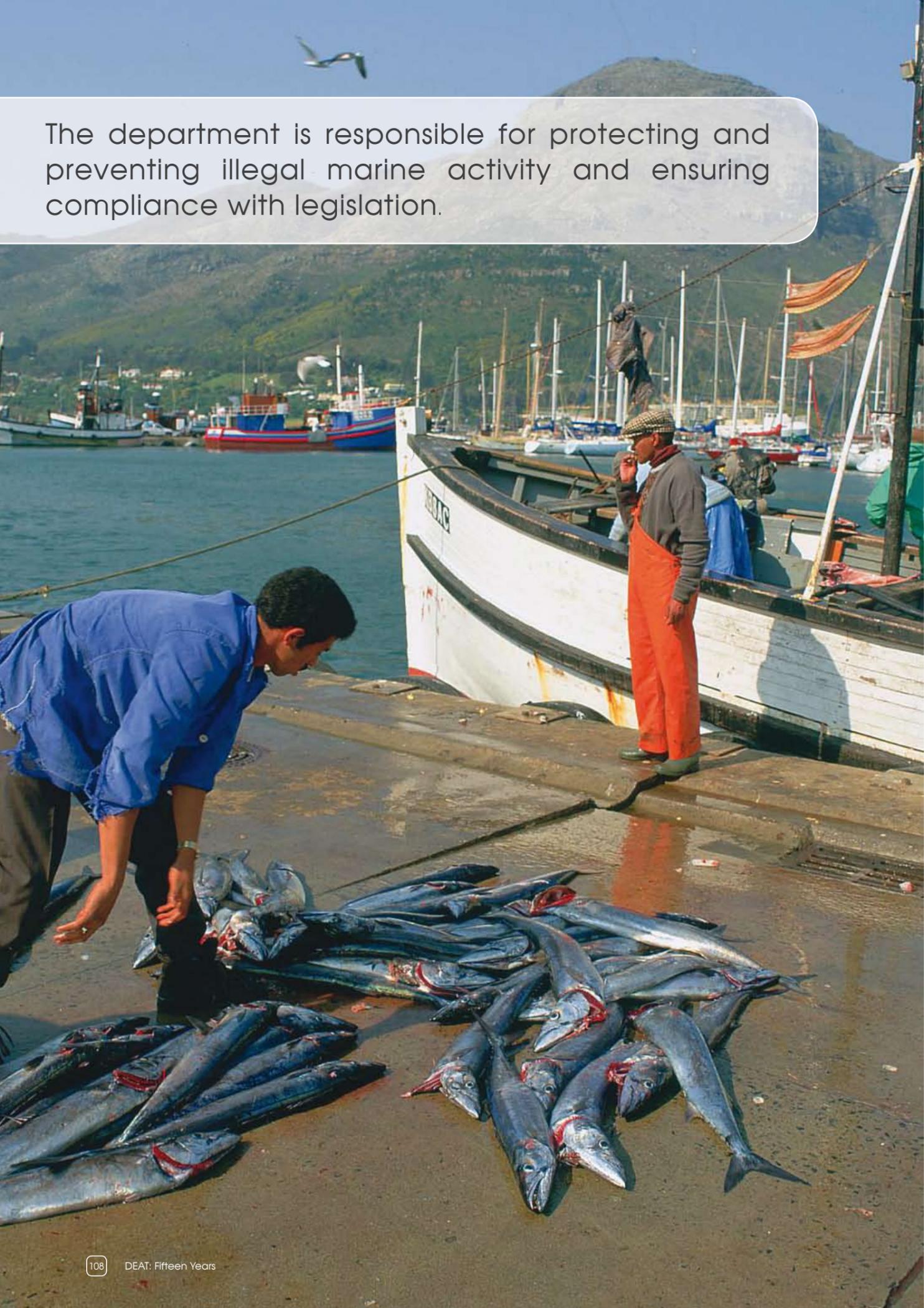
The department is responsible for protecting and preventing illegal marine activity and ensuring compliance with legislation. To this end, fishery control officers monitor landed fish at harbours, slipways and fish-processing establishments on an ongoing basis to ensure that permit holders comply with their permit conditions and declare all their catches.

The monitoring of fish landings has been increased in three target species: hake, west coast rock lobster, and squid and pelagics. To monitor resource use by various sectors, such as fisheries, port-based and factory-based processing establishments and restaurants, compliance task teams have been established on the west and southwest coast to monitor activity related to target species.

Non-consumptive activities such as whale watching are very popular.



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Strategies implemented to monitor resource use have resulted in an intensification of enforcement activities. The task of reducing poaching remains a challenge, particularly in the abalone sector. The department relies heavily on the support and cooperation of the other law enforcement agencies. An increase in the number of patrols and investigations conducted has resulted in an increase in the number of cases registered, as well as confiscations.

The department has also developed a hake and abalone protection strategy which is aimed at rebuilding stocks and giving these key resources an opportunity to recover from over-utilisation to ensure their sustainability.

The monitoring, control and surveillance fleet now consists of four protection vessels, three of which (*Lillian Ngoyi*, *Ruth First* and *Victoria Mxenge*) have been built to patrol up to the 200 nautical mile limit, while the fourth vessel, the *Sarah Baartman*, patrols the more remote off-shore parts of South Africa's EEZ and around the Prince Edward Islands in the Southern Ocean.

Marine Living Resources Fund

The Marine Living Resources Fund (MLRF) was established in terms of section 10 of the Marine Living Resources Act (Act No 18 of 1998) in 2001. The MLRF is the main source of funding for the operational activities of Marine and Coastal Management. During the period 2004 to 2007, the MLRF experienced cash flow difficulties due to the fact it was not able to generate sufficient revenue to cover its operational activities. This was exacerbated by the absence of adequate financial controls, systems and procedures to manage and administer the fund, as witnessed by the findings of the Auditor-General in the 2002 to 2005, 2005/06 and 2006/07 audit reports. However, the fund obtained an unqualified audit report in the 2007/08 financial year, marking a significant improvement in the financial management and financial health of the fund.

Challenges

Challenges in the Marine and Coastal Management branch include the further enhancement of transformation and the empowerment of historically disadvantaged individuals. Research needs to be done into the role of the ocean in regional climate change and its impacts on resources, economies and people. This is complex and expensive. Research into data-poor, small-scale and mixed-species fisheries requires innovative approaches. The dilemma is whether the impact on society can be enhanced by diverting such resources. The capacity to carry out social and economic research is another challenge, as is applying the precautionary approach, which is an important principle of rational fisheries management, in the face of poverty.

Since 1994, the international agenda has influenced the agenda of the department, but there has been an effort to counter northern domination by leading the agenda of developing countries. Marine and Coastal Management has played a significant role in regional fisheries management organisations (RFMOs), from where policy is often developed and introduced to the Food and Agriculture Organisation of the United Nations Committee on Fisheries (UNFAO-CoFi). There is a need to develop further capacity to have a greater impact on behalf of African and other developing countries.