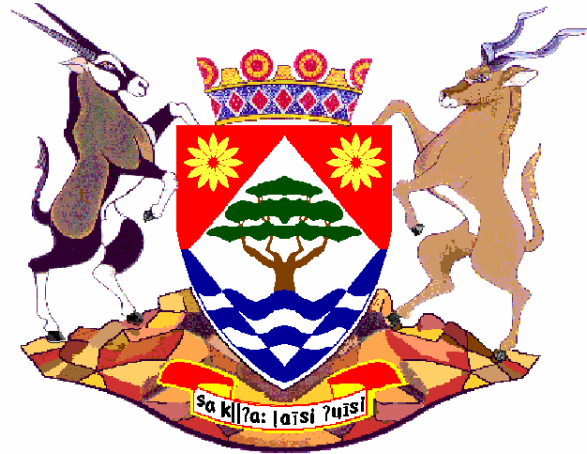


NORTHERN CAPE PROVINCE



FISHING AND MARICULTURE SECTOR DEVELOPMENT STRATEGY

Department of Economic Affairs and Tourism
June, 2003

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GLOSSARY

BEE	Black Economic Empowerment
DEAT	Department of Environmental Affairs and Tourism
DME	Department of Minerals and Energy
DPE	Department of Public Enterprises
DPLG	Department of Provincial and Local Government
DST	Department of Science and Technology
DTI	Department of Trade and Industry
EIA	Environmental Impact Assessment
FAMDA	Fishing and Mariculture Development Company of the Northern Cape
GDP	Gross Domestic Product
GGP	Gross Geographic Product
GSDI	Gariep Spatial Development Initiative
IDP	Integrated Development Plan
MCM	Marine and Coastal Management
M.E.C.	Member of the Executive Council
MTEF	Medium Term Expenditure Framework
NAMIP	Namaqualand Mariculture Industrial Park
NEPAD	New Partnership for Africa's Development
NGO	Non Governmental Organisation
PCC	Provincial Coastal Committee
PDEAT	Provincial Department of Economic Affairs and Tourism
PDI	Previously Disadvantaged Individual
PPP	Public Private Partnership
SCLP	Sustainable Coastal Livelihoods Programme
SIC	Standard Industrial Classification
TAC	Total Allowable Catch

FOREWORD

BY MR. THABO MAKWEYA, MEMBER OF THE EXECUTIVE COUNCIL FOR ECONOMIC AFFAIRS AND TOURISM, NORTHERN CAPE PROVINCE

This Fishing and Mariculture Sector Development Strategy document is the culmination of a lengthy period of investigation into the development potential of the fishing and mariculture industries in the Northern Cape Province. Since late 1996, the Department of Economic Affairs and Tourism has sponsored a number of initiatives designed to highlight the potential for fishing and mariculture development on the Namaqualand coast. The sectoral baseline study completed in 1996 together with the subsequent Fishing and Mariculture Sector Plan form the basis of this document. This has been supplemented with specific project level material obtained from the work conducted as part of the Gariiep Spatial Development Initiative's (GSDI) sector scanning process, as well as by inputs made by the Fishing and Mariculture Development Company (FAMDA).

Many of the readers of this document will be unfamiliar with the Namaqualand coast and the dynamics of the local and regional economy. Suffice it to say here that the current dependency on diamond mining leaves the population of the area vulnerable to the eventual down-scaling and closure of those mines which is expected over the short to medium-term as reserves are gradually exhausted. It therefore becomes imperative that we should identify an alternative source of livelihoods to sustain the post-mining economy in the area and this in turn informs our attempts to stimulate the growth and development of the fishing and mariculture sectors as part of a regional economic development strategy for Namaqualand.

Our vision is therefore to see the development of the fishing and mariculture industries on the Namaqualand coast as means to ensuring the development of sustainable livelihoods over the short, medium and long-term as part of a post-mining regional economic development strategy. The twin objectives of small, medium and micro enterprise (SMME) development and black economic empowerment, as well as those of global competitiveness and profitability will guide our efforts to promote the development of these sectors.

At a provincial government level, this document has been endorsed by the Economic Cluster Committee. Not only does this serve to secure the support of other provincial departments for the implementation of the sector strategy, but it also authorises the provision of financial and material support for the implementation of public sector led projects identified herein through the Medium Term Expenditure Framework (MTEF). Similarly, at an intergovernmental level, we will use this strategy document as a means to securing the support of relevant national government departments, the Namakwa District Municipality and the Richtersveld, Nama-Khoi and Kamiesberg local municipalities. It will also be used to enlist private sector investors whose participation is clearly central to the successful implementation of this fishing and mariculture development strategy.

Finally, I would like to extend my thanks to Dave Perkins the Project Manager of the Gariiep SDI and Denver Baron of FAMDA for the work that they have done in compiling much of the information that has gone into this document. Special thanks must also go to Samancor for funding the compilation and publication of this document.

1 INTRODUCTION

South Africa is very well endowed with marine resources, particularly along the West Coast where the nutrients provided by the cold, up-welling Benguella system support a highly productive fishery. Currently South Africa's fishing industry lands around 484 000 tons of fish worth some R1.7 billion annually and employs approximately 27000 people with a further 60-70 000 people employed in allied industries.

Although the infrastructure of the fishing industry is largely based in and around Cape Town in the Western Cape province, the Northern Cape province has 313 kilometres of coastline with rich fish resources within South Africa's exclusive economic zone. Exploitable fish stocks exist off the Northern Cape's Namaqualand coast and deep-sea hake trawling and hake long-lining as well as small-scale vessel line fishing and lobster fishing currently takes place there.

Mariculture, or the farming of marine organisms, is a relatively new economic sector that displays enormous potential for growth along the Northern Cape Province's Namaqualand coast. Favourable biological conditions, excellent shore-based infrastructure, the presence of a number of pioneer private sector mariculturists and a strong research and development base offer an ideal environment for investment and growth in this industry. Critically, the development of mariculture has the potential to offset the negative economic and social impact of the downscaling of diamond mining over the medium to long-term. For this reason alone, significant public sector investment is warranted as a means to reducing the barriers to entry to private sector mariculture operators on whom the development of this sector depends.

This document forms part of a series of economic sector development strategies produced by the Northern Cape Department of Economic Affairs and Tourism. The purpose of the document is to provide the reader with a background to the sector in question and to present the Department's assessment of the strategic issues that underpin sector development, a portfolio of sectoral project opportunities as well as an assessment of the institutional and resource requirements necessary to facilitate sector development. The document is intended to be dynamic and will be updated regularly through an iterative process of consultation with involved stakeholders and through ongoing sector based research.

2 A REGIONAL ECONOMIC DEVELOPMENT IMPERATIVE

Namaqualand is located in the northwest corner of South Africa, bordered by Namibia in the north and the Atlantic Ocean on the west. It has an area of 47,700 square kilometres and a population of about 60,000 people. The main economic activity of the region is mining, with two large and one smaller diamond mines and two non-ferrous metal mines accounting for most of the formal employment. Although the region is almost entirely semi-desert and therefore has only limited potential for agriculture, a large part of the population still depends at least partly on goat and sheep herding, the traditional base of the local economy, prior to the large-scale exploitation of copper and diamonds. Some potential exists for further irrigated agricultural development along the lower reaches of the Orange River. However, growth is limited by water availability, the ruggedness of the landscape and the remoteness of the area from input supplies and markets.



With the recent contraction of the copper mining industry and the gradual decline of the diamond mining industry in the region, the Namaqualand economy is in decline. Mining as a proportion of

GGP has been falling steadily since 1980 and formal employment is trending downwards accordingly. It has been projected that the downscaling of diamond mining at Alexkor and De Beers, and copper mining at Okiep, could eventually result in a loss of over 5000 jobs in the mining sector. The rate of attrition will however be dependent on the strategies adopted by these mines.

Nevertheless, the large-scale contraction of the minerals economy of Namaqualand is inevitable due to the finite nature of the resource in questions. This will clearly have a devastating socio-economic impact on the region. Substitution economic activities that will at least reduce the impact of minerals downscaling therefore must be found if even more widespread poverty is not to descend upon Namaqualand. The Northern Cape provincial government believes that mariculture and to a lesser extent fishing can contribute significantly to the development of a vibrant post-mining coastal economy. Under the right conditions it has been estimated that mariculture could contribute over 2000 jobs over a ten-year period. However, in order for it to do so, a clear strategy for sector development is necessary as are the commitments that would need to be made by a range of public, parastatal and private sector institutions that exist to promote economic growth and development. That said, there is no reason why with proper planning and co-ordination, fishing and mariculture could lead the rejuvenation of the Namaqualand economy supplemented by further growth in agriculture and tourism and related sectors.

What is clear is that the regional economy of Namaqualand is in decline and the identification of new economic activity is a socio-economic and political imperative. Hence, the Northern Cape provincial government's support for this Fishing and Mariculture Sector Development Strategy.

3 FISHING AND MARICULTURE IN THE NORTHERN CAPE

3.1 Fishing in the Northern Cape: The Status Quo

3.1.1 Background

Historically, the bulk of fish such as hake, snoek, pilchards and anchovies caught off the Northern Cape coast have been landed at harbours in the Western Cape Province and processed there. This has been mainly due to factors such as the relative under-development of coastal infrastructure in the Northern Cape, distance from markets, and insufficient volume of fish quotas to make large-scale investments in shore-based fish handling and processing infrastructure commercially viable. Despite this, the coastal towns of Port Nolloth and Hondeklip Bay have developed as regional fishing nodes and in both localities existing infrastructure, resource allocations, and levels of skills amongst local communities are sufficient to sustain the fishing industry, albeit at a relatively low level of development.

However, all indications are that there is scope for the re-development of the fishing industry in the Northern Cape. In-depth research shows that existing shore-based infrastructure could be re-employed to process the entire quota allocated to Northern Cape based fishing companies if the quota holders could be induced to land their fish there instead of in the Western Cape. In consultation with the current quota holders it has been established that they are amenable to this idea, particularly if they could acquire a commercial interest in the fish processing factory at Port Nolloth, and if support could be provided to offset, at least partially, the locational disadvantage of doing so.

3.1.2 The Offshore Fishery

Despite the fact that it has a coastline of over three hundred kilometres adjacent to one of the richest fishing grounds in the world, a negligible proportion (less than 1%) of the South African Total Allowable Catch (TAC) is landed in the Northern Cape Province. Some of the reasons for this have already been noted. Nevertheless, a demersal fishery based in the Northern Cape presently targets deep and shallow-water hake, kingklip and monkfish. An experimental long-line fishery has caught predominantly shallow-water hake since 1994 and has demonstrated the feasibility of long lining from Port Nolloth. Although some pelagic fishing is performed directly off the Northern Cape coast, none takes place out of the Port Nolloth or Hondeklip Bay harbours. Current allocations to Northern Cape based fishing operators amount to an aggregate of 1122 tonnes of hake trawl and 373 tonnes of long-line hake. One Northern Cape based operator also recently obtained a quota allocation for pelagic fish but this catch is not landed in the Northern Cape either.

A fisheries information system (FIS) incorporating research trawl data for the period 1983-1997, commercial catch data for the period 1995-1997 and bathymetric data was developed by Rhodes University in conjunction with the Northern Cape Department of Economic Affairs and Tourism in order to analyse the potential for developing fisheries off the Northern Cape province. The data has revealed that there are at least ten commercial species with potential for exploitation off the Northern Cape coast. These include deep and shallow-water hake, monkfish, snoek, horse mackerel, kingklip, squid and west coast sole.

The primary reason Northern Cape fishing grounds have not been fully utilised previously is the lack of harbour capacity for larger freezer vessels and the distance to the major fishing ports in the Western Cape. The majority of hake trawlers are based in Cape Town and Saldanha harbours and it is not economically feasible for these vessels to travel to Northern Cape waters unless bad weather forces them off the Cape Peninsula fishing grounds.

Northern Cape fishing companies which recently acquired fishing rights are however equipping themselves to operate out the Port Nolloth. For example, *Noord Kaap Visserman Onderneeming* has built a 22m demersal trawler, which can operate as a wetfish or freezer vessel. Used as a freezer vessel it has the capacity for a 20-30 day trip, which would facilitate following seasonal catch opportunities around the South African coastline. Long lining for hake off the Northern Cape coast appears to have been successful throughout the long line experiment with fresh fish successfully exported from Port Nolloth to Spain.

3.1.3 Rock Lobster Fishery

South African rock lobster catches amount to 5–7 % of world catches. West Coast rock lobster is a high value export product that commands premium prices in European, American and Far East markets. Historically, the West Coast rock lobster has been the mainstay of the fishing industry in the Northern Cape Province and the factories at Port Nolloth and Hondeklip Bay were constructed principally to process comparatively large-scale rock lobster catches in the past.

Today the situation is much different. Although Northern Cape based operators currently hold an aggregate quota of 102 tonnes, the Total Allowable Catch (TAC) for this species in the Northern Cape currently stands at 33 tonnes down from 90 tonnes at the start of the 1990's. The landed catch has fluctuated from 46t in 1992/93 to 6t in 1999/2000 and 29t in the 2002/03 season and the TAC allocated to the Northern Cape was only landed in full twice during the past ten years. Less than 30% of the allotted TAC was caught annually during the two seasons prior to this year.

The failure to land the full TAC has been due to a variety of reasons but principally because some quota holders deliberately delayed catching in Zones 1 and 2, offshore of Namaqualand, as a means to motivating for a transfer of quota's to the Western Cape where catch and transport costs were considerably lower. However, recently the full TAC has been allocated to a group of limited rights holders who are restricted to catching in the area. As a result of this permit condition and the fact that these allocations represent the only access right enjoyed by the participants, the fishermen concerned have been highly motivated to catch and land their entire allocation. The other Northern Cape based quota holders currently catch and land their entire allocation in the Western Cape

A recent review of the biological data available shows no evidence for a major decline in resource status that would justify what are believed to be conservative TAC's not being caught in full. It goes without saying that landing the full lobster TAC allocated to the Northern Cape each season would result in increased socio-economic benefits to the people of the region were it to be caught and landed in full in the area. A fishing experiment to catch the full lobster TAC for the Northern Cape over an extended season has been proposed to Marine and Coastal Management and comprises part of this sector development strategy. In summary, the proposal entails carrying out a stock

assessment to determine the feasibility of fishing for rock lobster in an extended season on a sustainable basis. It is hoped that an extended commercially viable fishery can be established on the basis of sound scientific analysis of the status of the lobster fishery in this zone through a possible increase in the TAC for the area.

3.1.4 Harbours

The lack of a safe deep-water harbour is a major constraint to the development of the fishing industry in the Northern Cape Province.

The town of Port Nolloth possesses a shallow water harbour that can accommodate vessels with a draught of up to 4m and this allows fishing vessels of up to 22m ready access into the harbour. However, the absence of a man-made breakwater means that the harbour is exposed to a strong current and swells during storms when access to the harbour is severely limited. Preliminary investigations suggest that excavating sand could deepen the harbour to make it more accessible, especially at spring low tides. At the Port Nolloth harbour, there are two private jetties and one government jetty at which vessels can moor. The government jetty can take larger vessels (22m, 4m draught), whereas the Ovenstone and the ex-Port Nolloth Fisheries jetties can only take vessels of up to approximately 2-3m draught due to shallower water at that part of the harbour.

The town of Hondeklip Bay has sheltered launching and a jetty suitable for small vessels in close proximity to the disused Oceana fish processing factory. During the past eighteen months, severe winter storms have resulted in serious damage to part of the jetty and it would require rehabilitation prior to any future commercial use. Alexander Bay within the diamond area at Alexkor is used as a small craft harbour for diamond mining vessels of up to 14m. Due to its very small size and location within a mining security area it is not possible to use it as a fishing harbour.

3.1.5 Fish Factories

The only facility currently capable of operating as a fish processing facility is the John Ovenstone factory in Port Nolloth developed in the 1930's by the Premier Group. It has a capacity of 3000t of fish a year and is currently completely unutilised. During 1995 it was upgraded to HACCP health standards for the export of fresh fish during the hake long-line experiment. The factory has recently been used to hold West Coast rock lobster quota allocated to Northern Cape Province based quota holders. However, due to the low quota allocation, and the fact that no other fish has been landed in Port Nolloth recently, the factory has been running at a loss for the last five years. In August, 2002 Premier Fishing retrenched the entire factory workforce and has declared its desire to withdraw from the area. A minimal lobster holding facility is operated by a skeleton staff on a seasonal basis.

With the decline in the lobster TAC, the factory at Hondeklip Bay owned by the Oceana group was closed and the jetty and warehouses mothballed. There is scope to utilise the factory buildings for small-scale pump ashore mariculture activities but there is little likelihood of it ever being used again for fish processing

3.1.6 Skills

As a consequence of the fact that fishing and the processing of fish has taken place at Port Nolloth and Hondeklip Bay for many years, a well developed skills base exists in the industry in the

Northern Cape. In addition, recent transformation of the fishing industry in line with government's policies for small, medium and micro enterprise development and black economic empowerment has also seen the emergence of black-owned businesses in the industry in Port Nolloth. Currently, the majority of the hake trawl, hake long-line and West Coast rock lobster quota allocated to Northern Cape based fishermen is allocated to members of previously disadvantaged groups.

3.2 Mariculture in the Northern Cape: The Status Quo

3.2.1 Introduction

Aquaculture is a global growth industry. Across the world natural fish stocks are essentially maximised in terms of their sustainable exploitation and it is therefore expected that aquaculture production, particularly the farming of marine organisms – mariculture - will grow in response to increasing demand related to worldwide population growth.

Generally speaking South Africa has a high-energy coastline with few sheltered bays and is therefore not conducive to in-sea mariculture as practised in places like Norway, Australia, Scotland, Chile and elsewhere. This is true of the Northern Cape's Namaqualand coast with the possible exception of the deep-water bay at Buchberg where the use of high-seas cages could be evaluated for the farming of salmon or other high value fish species. Buchberg Bay is characterised by very deep water (30 metres within one kilometre of the shore) and is sheltered from the prevailing Westerly swell. The only other form of viable mariculture in the sea would appear to be sea ranching with sedentary species such as abalone.

Mariculture development in the Northern Cape has therefore been and will continue to be predominantly shore based and although it is a comparatively new industry it is one with tremendous growth potential, particularly when it involves the cultivation of high value species for export. Recent advances in technology development and the penetration of certain overseas niche markets has effectively kick-started the South African mariculture industry.

Although mariculture development in the Northern Cape could be said to be embryonic, the province has arguably the best conditions for shore-based mariculture anywhere on the South African coast. Not only is the area characterised by very favourable biological conditions including nutrient-rich unpolluted sea water but in addition, with the downscaling of diamond mining activity along the Northern Cape coast, shore based mariculture is ideally placed to take advantage of mine related infrastructure (roads, on-shore pumping facilities, dams, power supply, etc). A synergy exists that could see jobs created in mariculture to offset those that will inevitably be lost in mining. This is recognised by the Northern Cape provincial government which is actively promoting the development of mariculture in the area through the Northern Cape Fishing and Mariculture Development Company (FAMDA).

3.2.2 Abalone

Abalone is a highly sought after delicacy in the Far-East and wholesale at between \$28 -\$35/kg live weight. Due to the decline of the world's natural abalone fisheries, abalone farming is being established in a number of countries including South Africa. Local technologies have been proven and South African producers have been able to secure a competitive position in world markets.

At the foundation of the Northern Cape mariculture industry, Port Nolloth Sea Farms has established an abalone hatchery at Port Nolloth. Initially intended for the purpose of stocking the sea as part of a commercial abalone ranching experiment, the hatchery also supports an on-shore grow-out facility on-site and supplies abalone seed to other abalone farmers in the Western Cape. A second abalone grow-out facility operated by a company called Ritztrade is also located at Port Nolloth and is on the verge of full commercial production.

Experimental abalone ranching concessions have been granted to Port Nolloth Sea Farms in sea mining areas 5 and 6, effectively a 60km strip of coastline, and to Ritztrade in the Port Nolloth area. This technology has the potential to yield abalone production equivalent to the natural abalone fishery areas in the Southern Cape. Approximately 2000 hectares of kelp bed exists along the Northern Cape coastline that could be suitable for abalone ranching. Results to date indicate that although abalone survival is highly variable depending on the site characteristics and sea conditions, ranching may well be a lucrative commercial proposition for the future. Priority attention is being given to evaluating data gathered as part of the ranching experiment and determining whether there is a business case for the development of additional abalone ranching projects.

3.2.3 Oysters

Two oyster farms are currently in operation on the Northern Cape coast. The first, established by the state-owned diamond mining company Alexkor in 1993, cultivates oysters in seawater ponds constructed initially as holding dams for one of the diamond processing plants. Production of more than 500 000 oysters per annum takes place there and the project is currently undergoing rehabilitation and re-development. The other farm, privately owned, is located at Kleinsee within the De Beers diamond mine. Here, cultivation takes place in a dam constructed adjacent to a seawater supply pipeline that was constructed to supply water to a diamond recovery plant there.

3.2.4 Fish farming

Port Nolloth Sea Farms has experimentally reared Dusky Kob in holding dams at their abalone grow-out facility in Port Nolloth. In addition to this, a Johannesburg based company has indicated its willingness to consider Port Nolloth as the site for a R12 million fish farm development originally envisaged for development at three other candidate sites around the world.

3.3 Other Aquaculture and Marine Resource Based Activities

3.3.1 Kelp

A locally based company, Rekaofela Kelp, was formed with the assistance of FAMDA and the Northern Cape provincial government to exploit the kelp concessions granted by national government to a group of previously disadvantaged companies. This venture entails the harvesting and collection of beach-cast kelp, which is dried, hammer-milled, screened and bagged for sale to companies involved in the processing thereof. This resource is however considered to be under-utilised both in terms of primary collection and especially value-added processing. Some fresh kelp is also collected locally for the feeding of abalone at two farms in Port Nolloth.

3.3.2 Single Cell Algal Production

Sastech, the biotechnology division of SASOL established a pilot algal production unit at Upington for the extraction of beta-carotene, a pigment used amongst other things, in health foods as an anti-oxidant. Single cell algae are cultured in oxidation ponds filled with nutrient rich saline water and thereafter subjected to an industrial process designed to extract the beta carotene. Conditions in the Northern Cape are ideal for algal production due to the high level of solar radiation and the very low level of rainfall. In 2001, the AECI took over the facility from SASOL and recently, the CSIR has taken a commercial interest in the project. Currently, efforts are being made to commercialise the project and scale-up production accordingly through the injection of capital and the implementation of an administrative and organisational restructuring strategy.

4 FISHING AND MARICULTURE SECTOR DEVELOPMENT STRATEGIES FOR THE NORTHERN CAPE

4.1 Background

Sector planners responsible for the promotion of fishing and mariculture in South Africa face a number of challenges that will need to be addressed in order to secure the orderly and sustainable development of both sectors. Quite aside from the technical, economic and financial aspects of challenge to develop fishing and mariculture, there are also a range of issues pertaining to administration, regulation, institutional development, transformation and social justice to consider. Marine and Coastal Management (MCM), a branch of the national Department of Environmental Affairs and Tourism, has been assigned the responsibility to manage the development and conservation of marine and coastal resources to ensure the sustainable utilisation of such resources, as well as to maintain marine ecosystem integrity and quality through the provision of appropriate scientific liaison, logistical, administrative and personnel management. As such, MCM is also the lead agent for new developmental processes pertaining to fishing and mariculture development.

4.2 Policy and Transformation

Since 1994 the South African government has devoted considerable attention to promoting transformation in the fishing industry. In passing the Marine Living Resources Act (Act No.18 of 1998) government seeks to remove obstacles to equal opportunities in the fishing industry and reconcile the inherent tension between the urgent need for change, on the one hand, and the need for stability in the industry, on the other. However, in doing so it recognises that the finite nature of fisheries resources may be compromised by a wide-scale expansion of fishing effort, thereby jeopardizing long-term sustainability. This effectively limits the numbers of new entrants into the industry from the historically disadvantaged sectors of society. Mariculture is also recognised for the potential contribution that it could make to economic development in coastal areas and the development of a national Mariculture Sector Plan is underway. However, mariculture is a fledgling industry with significant barriers to entry. One of the challenges facing those tasked with promoting the development of the industry will be to ensure access and participation on the part of the historically disadvantaged sectors of society.

The challenge confronting decision makers and resource managers therefore is to develop and implement a dispensation which broadly establishes an acceptable and sound balance between the access of various legitimate user groups to marine living resources, while safeguarding the long term sustainability of such resources. Notwithstanding the fact that most of South Africa's commercially important marine resources are already fully utilized there is considerable potential for the meaningful transformation of the marine fisheries sector if inter-firm, geographical and racial inequalities in access to fisheries and marine resources can be effectively addressed.

4.3 The Northern Cape Province: A Sector Planning Approach to Fishing and Mariculture Sector Development

Within this new policy and legislative context the Northern Cape provincial government has attached a high priority to promoting investment in the fishing and mariculture sectors as a means to mitigating the future negative socio-economic impact associated with diamond mining downscaling. Acknowledging the role that MCM must play in promoting fishing and mariculture development at a national level, the provincial Department of Economic Affairs and Tourism has nonetheless carried out a sector planning exercise for fishing and mariculture in partnership with the Gariiep Spatial Development Initiative, Rhodes University together with local stakeholders in the Namaqualand area.

Under its concurrent responsibility to promote economic growth and development, the provincial Department of Economic Affairs and Tourism has taken the responsibility for identifying and promoting fishing and mariculture sector development opportunities along the Namaqualand coast.

Commencing in 1996 with the compilation of the Fishing and Mariculture Baseline Study which was intended to inform the emerging Northern Cape Provincial Growth and Development Strategy, the Department correctly identified the fishing and mariculture sectors as having significant development potential. More importantly it framed a set of recommendations that spelt out what provincial level public sector interventions would be necessary to stimulate growth and development in fishing and mariculture. In the event, the provincial government did act on some of the recommendations, most notably the establishment of the Fishing and Mariculture Development Association (FAMDA) an agency that would promote increased access to marine living resources as well as the identification, appraisal and implementation of projects aimed at creating new livelihoods through the sustainable utilisation of those resources.

This was followed by the publication in 1999 of the Northern Cape Province Fishing and Mariculture Sector Plan which consisted of two major elements. Firstly, a comprehensive stocktaking and diagnostic section that profiled and analysed the socio-economic conditions prevailing at the time, the level of social and economic need as well as the potential of fishing and mariculture to meet these needs. Secondly, an actual Sector Plan for fishing and mariculture development with developmental targets, possible projects and strategies designed to overcome identified constraints to sector development.

Importantly, the Fishing and Mariculture Sector Plan concluded that fishing and mariculture could make a major contribution to the development of the regional population and economy as long as there would be a strong emphasis on institution building, marine resource management, technology development, education and investment marketing. It was estimated that the optimal development of fishing and mariculture could create at least 2500 jobs over 10 years, absorbing much of the unemployment likely to result from the downscaling of mining in the Namaqualand area. The Sector Plan also noted the need to ensure that coastal and fisheries resources are developed and managed in a sustainable, equitable and integrated manner. Only in this way would it be possible to promote synergy between development initiatives and avoid conflict.

One possible shortcoming of the Fishing and Mariculture Sector Plan was that while it was a product borne out of an in-depth process of stakeholder consultation, some of its content became dated before FAMDA had been adequately capacitated to implement many of the recommendations. Consequently, a Fishing and Mariculture Sector Scan was commissioned by the Gariiep Spatial Development Initiative in conjunction with FAMDA and the provincial Department of Economic Affairs and Tourism in 2001 to revise and deepen the original sector plan and to identify specific project opportunities that could form the basis of a public sector led, private sector driven sector development strategy. The remainder of this document focuses on a number of key strategic issues and interventions that need to be addressed in order to expedite fishing and mariculture sector development in the Northern Cape.

4.4 Fishing Industry Sector Development

It must be acknowledged that the scope for the further development of the fishing industry is limited by a number of infrastructural, economic and institutional constraints. In particular the lack of a safe, suitable, deep-water harbour places an operational constraint on the size of vessels that can be operated in the Namaqualand region. Furthermore, in terms of logistics and access to input supplies and markets, the remoteness of the region imposes something of a disincentive to fishing out of Port Nolloth and/or landing fish in the area. Finally, a number of institutional constraints related to the current rights allocation process and business development make substantial new industry growth in the area unlikely.

Consequently, the essence of the fishing sector development strategy for the Northern Cape is to optimise the utilisation and return to existing resource allocations, maximise levels of utilisation of existing fishing industry infrastructure, consolidate industry transformation and lobby for special dispensations where justifiable. To date three main areas of strategic intervention have been identified that need to be pursued in order to reinforce and rejuvenate the fishing industry in Namaqualand.

4.4.1 Strategic Intervention F.1 – Promotion of the Port Nolloth Fishing Node

To date, the transformation process has seen a re-allocation of existing fishing quotas to previously disadvantaged Northern Cape based fishermen. Beyond that, an opportunity exists to rejuvenate and grow the fishing industry in the area through strategic investments in harbour infrastructure and the rehabilitation of existing fish processing facilities at Port Nolloth. However, whilst Port Nolloth possesses a suitable infrastructure for fishing in the form of: a harbour suitable for vessels of up to 22m; jetty facilities, a fish processing factory with a 3000 ton capacity; and good communication and transport links facilitating the marketing of product, there are also a number of constraints to the further development of commercial fishing out of Port Nolloth. Some of these include: distance from major markets and service providers; siltation and other operating limitations at the harbour; old factory equipment and, a limited volume of fish quotas available to local fishing entrepreneurs.

A holistic strategy is thus required to revitalize Port Nolloth as a regional fishing port to overcome constraints, and build on regional strengths and opportunities. Possible strategies to promote development of Port Nolloth as regional fishing node include:

- **The facilitation of joint venture business arrangements** between fishing companies to create a “critical mass” of fish that would make fishing and fish processing inherently more economically viable in the Port Nolloth area (and thus the possibility of making investments in upgrading existing fish processing and harbour facilities more attractive).
- **Public sector investments in critical fishing industry related infrastructure**, including the upgrading of the Port Nolloth harbour (through improved management of moorings and dredging of sand to improve access to the harbour) and the fish processing facilities at the John Ovenstone factory (which remains a State-owned property).
- **Regional fishery management interventions that would promote fishery development in Port Nolloth** would require careful negotiation and evaluation with Marine and Coastal Management and the participants in the Northern Cape fishery. They could include: the designation of Port Nolloth as a landing port for certain operations targeting certain species; a reduction or waiver of fishing levies to incentivise fishing and fish processing operators to base themselves in the region; preferential access to certain fish stocks (e.g. shallow-water hake with long-lines, monkfish above a certain latitude) for Port Nolloth based operations; and, direct support for experimental fishery development.

4.4.2 Strategic Intervention F.2 – Support for the Development of a Small-Scale Experimental Fishery

One of the projects initially identified through the Sector Plan was the small-scale commercial fishing of certain in-shore and near-shore species. Low levels of capital investment and high socio-economic impact seemingly afforded an opportunity to develop a regional fishery that could help to grow the fishing sector in the area. Possible constraints to the project included the fact that the regulator, MCM, did not recognise the fishery as there was insufficient biological knowledge about possible fish stocks. Also, there was no immediate local access to vessels and equipment or financial capital.

Nevertheless, FAMDA, supported by Rhodes University managed to successfully motivate a two-year small-scale fishing experiment. In terms of agreements reached with MCM, ten experimental fishing permits have been issued to six Port Nolloth based operators (mainly existing quota holders) and four Hondeklip Bay based operators (all currently inactive in the fishing industry). Observers who will sail with the fishermen to record catch data and related information have been trained and some funding has been secured to retain their services for a limited period. MCM has granted some resources to Rhodes University to assist with the analysis of data and FAMDA is championing the project locally.

However, the project is inadequately resourced and further support is required to properly resource the experiment. The provincial Department of Economic Affairs and Tourism has assisted the Hondeklip Bay based permit holders to acquire small vessels and equipment as well as an operating budget to allow them to commence with the experiment. FAMDA is also trying to facilitate a schedule of fishing activities by all permit holders in order to fully operationalise the experiment. Nevertheless, there is still a requirement for further assistance. Additional funding is required to finance FAMDA to retain a full-time project co-ordinator and the budget for the analysis of the information recorded as part of the experimental permit conditions needs to be increased.

Given that this project is a commercial pilot project and that the existence of a commercially and ecologically sustainable in-shore fishery still needs to be proven, there would seem to be justification for further public sector support, particularly since the private sector permit holders are already taking commercial risk through their participation in the project.

4.4.3 Strategic Intervention F.3 – Review of West Coast Rock Lobster TAC

Indications are that the West Coast Rock Lobster resource in the Namaqualand area could support higher levels of exploitation on a sustainable basis. The entire TAC is currently fished within a radius of ten kilometres of the town of Port Nolloth, leaving vast areas of coastline completely unutilised. In addition, as reported in Section 3.1.3 there would appear to be biological justification to consider an extended season in the Northern Namaqualand coastal areas where it appears that the West Coast rock lobster life cycle may permit fishing at times with more favourable sea conditions. Consequently, it is proposed that a review of the TAC should be undertaken. Clearly this would necessitate a concomitant review of the state of the fishery in the area to determine whether there is a scientific basis for considering both an increase in the local TAC as well as an extended fishing season. To this end FAMDA is preparing a motivation for funding and would like to commission the above-mentioned exercise in conjunction with MCM.

4.5 Mariculture Industry Development

Indications are that the Namaqualand coast probably offers the best opportunity for mariculture development along the entire South African coastline. Not only are biological conditions excellent but coastal mining and mariculture may be complementary economic activities although they are often seen to be in conflict. Not only is the opportunity cost of developing mined out areas for mariculture very low, but the existence of infrastructure serving the mines – roads, power, telecommunications, pumping infrastructure, dams, etc – provides a potential boost for mariculture development as long as mine planners and mariculture planners can find common ground. The only existing impediment to this symbiotic relationship is the need for strict mine security which need not necessarily preclude mariculture developments within restricted areas (as Alexkor's oyster farm and Kleinsee's oyster farm proves) although it is often used as a reason why access cannot be granted (as De Beers previous reluctance to allow Rekgaofela Kelp to work a concession on their property proves).

Outside of the mining areas – i.e. on the remaining approximately 10% of the coastline – there is potential for developments where there is some degree of agglomeration and physical, social and municipal infrastructure. The towns of Port Nolloth and Hondeklip Bay are the two nodes around which it will be possible to promote mariculture in the short-term and where in fact a number of projects are currently being promoted.

4.5.1 Strategic Intervention M.1 – Access to the Coast

Combined with favourable marine biological conditions, excellent shore based infrastructure exists on the Northern Cape coast to support mariculture development. Ironically, it is the existence of infrastructure associated with diamond mining that provides a major comparative advantage for mariculture development in the area, but strict mine security effectively limits access to sites within the mining security areas. To some extent this has been recognised by both the state-owned diamond mining company, Alexkor and De Beers who operate the Kleinsee mine. In both cases

some attempt has been made to explore ways to make mariculture spatially compatible with diamond mining. However, to date, limited success has been achieved and heavily restricted access to high potential shore-based sites probably represents the main constraint to mariculture development in the area. Gaining access to these sites must be a high priority if mariculture is to develop at a pace that will allow it to mitigate the negative medium to long-term impacts of the downscaling of the Namaqualand diamond mines.

That said, the requirements of mine security are acknowledged and a compromise may be necessary in the short to medium-term that ensures some degree of spatial compatibility between diamond mining and mariculture. Consequently, a nodal or “aquaculture park” approach to shore-based mariculture is perhaps the most appropriate basis for the promotion of mariculture development on the Northern Cape coast. In any case it would appear that there are a number of technical and economic advantages to be gained from clustering mariculture activities and a number of possible mariculture development nodes have been identified based on environmental, spatial and infrastructural considerations.

However, this will not be an effective strategy where the marine living resource in question is to be harvested in its naturally occurring state. In this instance it is essential that the matter of access to the coast be addressed in order to facilitate the exploitation of marine living resources such as kelp, west coast rock lobster, mussels and limpets inside the mining areas. By way of example one public sector supported empowerment project aimed at developing sustainable coastal livelihoods is effectively compromised by a lack of access to concessions granted by the state. In this case, a lack of access to the coast is sterilising what would otherwise be a golden opportunity to empower an impoverished coastal community.

Thus, the matter of how to increase access to the coast without compromising the legitimate rights and interests of existing land-users must be resolved. It is proposed that local, provincial and national government collectively engage the senior management of De Beers and Alexkor in this regard to identify the means by which access to the coast can be improved, firstly, for persons, natural or juristic, who enjoy a legitimate right to harvest marine living resources, and secondly, to entrepreneurs wanting to utilise high potential coastal sites for mariculture development.

4.5.2 Strategic Intervention M.2 – National Mariculture Sector Plan

While the Northern Cape provincial Department of Economic Affairs and Tourism has been proactive in instituting measures designed to identify and facilitate mariculture development opportunities, it could be argued that national government has not kept pace with the province. It is acknowledged that the first priority of national government has of necessity been the management of a process of policy and legislative reform which is itself enabling of mariculture development. However, MCM has not yet succeeded in installing the core competencies and capacities required to drive mariculture development country-wide. That said MCM has recently declared its intention to undertake a national mariculture sector planning exercise. It is assumed that the matter of institutional reform and the organisational development of MCM to position itself, or a designated agency, to become a strong promoter of mariculture development will form part of the sector planning exercise.

It is imperative that needs and plans of the coastal provinces for mariculture development are taken into account in the formulation of the forthcoming national mariculture sector planning exercise. In particular, the importance of mariculture development as a driver of regional economic transformation for a post-mining economy in Namaqualand must be recognised and fundamentally the need for MCM to become a facilitator of mariculture development and not just a regulator thereof must be explicitly recognised.

4.5.3 Strategic Intervention M.3 – Industrial Support Measures

The development of an appropriate set of industrial support measures to reinforce mariculture development is critical. Mariculture would appear in some ways to “fall between two stools” when it comes to receiving public sector support for industry development. Until recently, there were no specific measures that explicitly recognised mariculture as a qualifying industry. Strictly speaking in terms of the Standard Industrial Classification (SIC) mariculture is classified as an agricultural activity and therefore may have not been foremost in the prioritisation of the design of industrial support measures.

Nevertheless, an entrepreneur contemplating an investment in mariculture could secure access to some of the generic industrial support measures, especially those related to research and technology development and possibly human resource development. However, from a policy perspective, the Department of Trade and Industry has recently recognised mariculture as a qualifying industry for its range of industrial support measures. More specifically, inputs have been solicited from stakeholders in the mariculture industry and these have been included in the formulation of new criteria for the SMEDP programme.

What would seem to be required though is a more comprehensive consideration of an appropriate set of industrial support measures designed specifically to facilitate mariculture industry development. The formulation of such a portfolio of instruments of support for industry development should go beyond national instruments such as those already referred to and be widened to include support measures that could be provided by local and provincial government too. The specific aim should be to target the major known impediments to mariculture development and design and avail measures and support that can effectively reduce barriers to entry to this industry.

4.5.4 Strategic Intervention M.4 – Institutional Strengthening of FAMDA

FAMDA has proven to be a highly successful means to the identification, and facilitation of mariculture projects in the coastal areas of Namaqualand. The deployment of a dedicated capacity in support of identified project potential has already led to the creation of a significant number of sustainable livelihoods. However, FAMDA is severely limited in its effectiveness by human resource and financial constraints and the organisation is in clear need of strengthening so as to be able to reinforce its ability to provide the institutional development and other support required by developing mariculture ventures in the area.

In the past year or so, FAMDA has undergone something of an institutional reform having been transformed from a member based voluntary association with a constitution to a company registered in terms of Section 21 of the Companies Act. This change in legal status was necessitated by a shift in the role and function of FAMDA from a body that was focused

predominantly on facilitating access amongst members to rights allocations and high level advocacy issues related to fishing and mariculture development to an organisation much more clearly focussed on business development in fishing and mariculture, albeit that it still also functions as an advocacy body for the promotion of specific fishing and mariculture project developments in the Namaqualand coastal zone.

It is anticipated that the role and function of FAMDA will continue to evolve as mariculture development gains pace in the area. Indeed, FAMDA has already identified specific areas in which it needs organisational strengthening through the acquisition of additional financial and human resource capacity so as to be able to perform its expanding role. As a matter of priority it will therefore be necessary to secure additional support from national, provincial and local government as well as FAMDA members themselves in order to strengthen the organisation.

4.5.5 Strategic Intervention M.5 – Reducing Barriers to Entry to Mariculture

Mariculture development country-wide is currently constrained by a number of barriers to entry. These range from competing land-uses and a shortage of suitable sites for mariculture development to a lack of market information that informs the economics of mariculture enterprise. From a lack of dedicated industrial support measures to bureaucratic inefficiencies in the processing of permit applications, a number of barriers exist that currently act as a disincentive to investment in this infant industry.

A lack of supporting Infrastructure and investment into the research and development of mariculture technologies are two specific barriers to entry that currently constrain mariculture development in the Northern Cape Province. It follows therefore that considerable attention needs to be devoted to identifying measure to overcome these barriers to entry in the finalisation of a provincial and/or national mariculture development strategy. It is proposed that public sector investments in supporting infrastructure and technology development are two areas where the State can act to effectively remove barriers to entry into the mariculture industry. Specific project related proposals have been formulated in this regard as part of the profiling of new investment projects that appear in Chapter 5 below.

4.5.6 Strategic Intervention M.6 – Promotion of Hondeklip Bay Mariculture Node

Hondeklip Bay is a small enclave of publicly and privately owned land surrounded by diamond mining areas. As such, that is with open access, it is proposed that the town could be the site of the development of a shore-based mariculture node. With the recent closure of the Trans Hex group's diamond mining there and with virtually no other significant source of employment in the area, the population of Hondeklip Bay is experiencing severe economic distress. The development of a mariculture node as an alternative source of sustainable livelihoods is therefore seen as a high priority.

To this end, pumping infrastructure, several suitable buildings and a jetty exist at the disused lobster factory owned by the Oceana fishing company that could be used to house a small number of mariculture projects. With this in mind, FAMDA has approached the company with a proposal to locate a small-scale abalone out-grower operation at the factory. In turn, they have indicated their willingness to consider making the facility available for this purpose. Sufficient space also exists to

house a number of other mariculture businesses on site. Added to this labour could be drawn from the local community and basic services exist for electricity, water supply and telecommunications. Road access is on secondary roads and an upgrade may be necessary to promote easier access to the town.

In this instance a partnership between the Namakwa district municipality, FAMDA, MCM and the provincial Department of Economic Affairs and Tourism could be instrumental in facilitating the development of Hondeklip Bay as a mariculture node as envisaged. Commitment has already been obtained by a private sector operator to support the abalone grow-out operation with technical and management services.

5 PORTFOLIO OF PROJECT DEVELOPMENT OPPORTUNITIES

A portfolio of projects in which the Department of Economic Affairs and Tourism has a role in facilitating project development through the Fishing and Mariculture Development Association (FAMDA) in conjunction with a range of other national government departments, parastatal development finance institutions and local government are presented below. Table 1 provides a summary list of projects that make up this portfolio.

Table 1 – Summary List of Fishing and Mariculture Development Projects

Project	Location	Jobs	Development Cost
Kelp Harvesting and Collection	Namaqualand coast	50-150	R3,750 m (3 x modules @ R1,250 m)
Mussel and Limpet Harvesting	Namaqualand coast	23	R1,500 m
Kelp Processing	Port Nolloth	25	R1,850 m
Namaqualand Mariculture Industrial Park	Port Nolloth	120-250 (over 5 years)	R1,500 m feasibility study R3,500 m – SPV/Devco & planning R15,540 m – core park infrastructure R35,000 m – private sector anchor projects
Small-scale Fishing Experiment	Port Nolloth and Hondeklip Bay	24	R0,144 m - project co-ordination R0,250 m – data analysis to prove fishery
Port Nolloth Fish Factory Redevelopment	Port Nolloth	50	R0,500 m – feasibility study
Hondeklip Bay Abalone grow-out	Hondeklip Bay	20	R4,950 m (over three years project lead time)
Oyster Hatchery	Port Nolloth	6	R2,650 m
Abalone Hatchery	Port Nolloth	8	R2,500 m
Abalone Ranching	Port Nolloth and Hondeklip Bay	30	R3,750 m
Oyster Farm	Port Nolloth	8	R2,150 m
Port Nolloth Abalone Farm	Port Nolloth	8	R4,950 m
TOTAL		372-602	R84 484 m

Project Title	Kelp Harvesting and Collection
Location	Port Nolloth, Hondeklipbaai, Brazil Richtersveld, Nama-khoi and Kamiesberg Municipalities Namakwa District Municipality
Description	This project aims to optimally utilize the seaweed resource along the coast of the Northern Cape in an ecologically sustainable and economically viable manner for the benefit of the historically disadvantaged coastal communities of Hondeklipbaai and Port Nolloth. Supported by FAMDA, the operating company has access to three of the four kelp concessions on the Namaqualand coast allocated to PDI companies as part of the transformation process initiated by Marine and Coastal Management.
Status	<ul style="list-style-type: none"> Existing project employing approximately 35 people producing 700 tonnes of dried, milled kelp Project not maximising utilisation of concession areas (financial constraints, shortage of equipment and lack of access to some concession areas)
Investment Required	For project expansion through the acquisition of additional equipment at R 1, 250 million per production unit for three units – R3,750 million
Employment	Currently employs 35 people
Production	Current production levels are in the region of 700 tonnes per annum with a value of R 0,840 million. With additional equipment production levels could increase to approximately 3000 tonnes per annum with a value of R3,600 million.
Exports	100% of the primary processed seaweed is exported.
Empowerment/ Transformation	The existing company (Rekaofela Kelp) operating in Namaqualand is owned by 72 local, historically disadvantaged individuals. The directors of the company are currently participating in a skills development and transfer programme.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Agriculture, Land Reform, Environment and Conservation
Inter-governmental	Department of Environmental Affairs and Tourism Department of Trade and Industry The Richtersveld, Nama-Khoi and Kamiesberg Municipalities.
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers and processors of marine products.
Time-frames/ Duration	Existing project involving utilisation of existing resource – benefits can be realised immediately following investment in equipment.
Provincial Government Support Required	<ul style="list-style-type: none"> Funding for acquisition of additional machinery (3 modules at R1,250 million per module) – R3,750 million Negotiation of access to inter-tidal zone within Alexkor, Trans Hex and De Beers mines to work concessions held by company Institutional support for FAMDA to continue to support management of the project
Other Public Sector Support Required	<ul style="list-style-type: none"> Business skills and management development – FAMDA, LBSC Training and development – Department of Labour
Comments	FAMDA has successfully managed to acquire funds through the Department of Environmental Affairs and Tourism's Sustainable Coastal Livelihoods Programme for the implementation of the first additional module of the project (R1, 250 million). Further funding is still required to finance additional production units which will employ an additional 100 people. It is imperative that this project is supported in this way if the concession holders are to be able to prove their ability to work the concessions ahead of the next round of rights allocations. Failure to do so could result in the concession holders losing their concessions.

Project Title	Mussel and Limpet Harvesting
Location	Port Nolloth, Hondeklipbaai, Alexander Bay, Kleinsee Richtersveld, Kamiesberg and Nama-khoi Municipalities Namakwa District Municipality
Description	A pilot project to be implemented to harvest mussels and limpets in the inter-tidal coastal zone along the entire Northern Cape coast. The objective of the project is to determine the stock levels and to ascertain what percentage of the biomass of each species can be sustainably harvested. The project also intends to ascertain the economic viability of harvesting the resource. Should the project be successful, mussel and limpet harvesting could be commercialised through a rights allocation and thereby provide a new business opportunity for SMME's to get involved in the sustainable utilisation of marine living resources along the Northern Cape coast.
Status	<ul style="list-style-type: none"> • New project • Experiment to prove commercial sustainability of harvesting mussels and limpets • Part funding - R1,500 m - secured through SCLP (DEAT)
Investment Required	Pilot project R 1,500 million for initial acquisition of equipment and training
Employment	23 new temporary jobs (for the duration of the pilot project)
Production	Unknown at this stage. One of the objectives of the experiment is to determine the magnitude of the sustainably exploitable biomass with a view to creating new sustainable coastal livelihoods.
Exports	50% of production will be exported.
Empowerment/ Transformation	All the employees of the project will be local historically disadvantaged individuals. Technical assistance will be obtained from existing players who will also assist with training and skills transfer to project participants.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Agriculture, Land Reform, Environment and Conservation
Inter-governmental	Departments of Trade and Industry Department of Environmental Affairs and Tourism The Richtersveld, Nama-khoi, Kamiesberg and Namakwa Municipalities.
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers and processors of marine products.
Time-frames/ Duration	Pilot project to be implemented over an initial period of 12 months Project roll-out involving establishment of individual mussel and limpet enterprises after the completion of the pilot project
Provincial Government Support Required	<ul style="list-style-type: none"> • Assistance to secure access to inter-tidal zone within Alexkor, Trans Hex and De Beers mines • Funding for project management via FAMDA
Other Public Sector Support Required	<ul style="list-style-type: none"> • Support for product and market development – Department of Trade and Industry • Training and development of project participants – Department of Labour
Comments	FAMDA has successfully managed to obtain funds through the Department of Environmental Affairs and Tourism's Sustainable Coastal Livelihoods Programme for the implementation of the pilot project (R1,5million). However, depending on whether it will be necessary to extend the pilot project it may be necessary to secure additional funding of R1,500 to capitalise the project. In addition, FAMDA will need to be assisted to support the establishment of small-scale harvesting enterprises in the event that the pilot project indicates that the commercial viability of harvesting mussels and limpets,

Project Title	Small Scale Fishing Experiment
Location	Port Nolloth, Hondeklipbaai, Richtersveld and Kamiesberg Municipalities Namakwa District Municipality
Description	The primary objective of the experiment is to ascertain whether a sustainable small scale commercial fishery concentrating on hake, kingklip, snoek and St Joseph shark can be initiated in the Northern Cape. These species are known to occur in significant numbers in the near-shore zone, albeit sporadically during the year. Therefore any small-scale commercial enterprise targeting these species must have the versatility to employ different equipment at different times. The experimental permits therefore permit a multi-gear approach and require the collection of both biological and economic data that will be used to determine the ecological sustainability and the economic feasibility of both the fishery and this strategy. This data will be used to formulate a management proposal to the Department of Marine and Coastal Management (MCM) for a future near-shore, multi-species fishery. This project also makes provision for acquisition of vessels and the administration thereof as a means of empowering the four Hondeklip Bay companies to participate fully in the experiment.
Status	<ul style="list-style-type: none"> • Approved experimental project (DEAT) 8/2002 – 7/2004 • Partially resourced through MCM and PDEAT • Programming of experiment currently being revised
Investment Required	Vessels and gear – R 0, 750 million Administration and operational costs – R 0, 600 million
Employment	24 new temporary jobs
Production	Unknown at present. One of the objectives of the experiment is to determine the stock levels of the four targeted fish species and what would constitute a sustainable harvest.
Exports	Most of the fish will initially be available for local consumption but depending upon the eventual size of the fishery and assuming the value-adding processing of fish is possible, exports could be achieved.
Empowerment/ Transformation	The permit holders are local PDI's and will employ local fishermen to participate in the project. However, where unfamiliar catch methods are used, external technical assistance may have to be obtained on condition that skills transfer to local fishermen.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Transport and Public Works
Inter-governmental	Department of Environmental Affairs and Tourism Department of Public Works. The Richtersveld and Kamiesberg Municipalities.
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers and processors of marine products.
Time-frames/ Duration	Experiment – 24 months (August 2002 – July 2004)
Provincial Government Support Required	<ul style="list-style-type: none"> • Funding for appointment of project co-ordinator – R0,144 million • Funding for the assessment of data gathered through pilot project – R0,250 million
Other Public Sector Support Required	<ul style="list-style-type: none"> • Repairs and access to infrastructure at Hondeklipbaai and Port Nolloth – Department of Public Works • Training and development – Department of Labour
Comments	FAMDA has facilitated the allocation of the ten experimental permits that were issued to Northern Cape-based companies, four from Hondeklipbaai and six from Port Nolloth. Should the data collected throughout the project be conclusive and prove the feasibility of a new fishery in the Northern Cape, the economic impact of the project for the towns of Hondeklipbaai and Port Nolloth will be substantial, particularly for the former. The R1,350 million funding for the project required for acquisition of vessels, equipment and operating costs has recently been provided by the Department of Economic Affairs and Tourism to enable the participation of Hondeklip Bay permit holders in the project.

Project Title	Hondeklipbaai Abalone Farming
Location	Hondeklip Bay Kamiesberg Municipality Namakwa District Municipality
Description	This project entails the establishment of a shore-based abalone farm at the disused fish processing factory at Hondeklip Bay. Abalone juveniles will be purchased from a local abalone hatchery and reared in tanks until they reach market size at which time they will be exported. The rearing of juveniles will result in a lower mortality rate than with hatched abalone and thereby decrease the risks associated with normal abalone grow-out facilities that are supplied directly from hatcheries. The global demand for abalone is relatively constant (although reduced at present as a consequence of SARS). It is envisaged that a shortfall in the supply of wild abalone is imminent due to an increase in the harvesting (legal and illegal) of wild abalone stocks. The only way that South Africa can maintain the current supply levels is by encouraging and supporting the farming of abalone.
Status	<ul style="list-style-type: none"> • New project • Part-funding secured through DEAT Poverty Relief Programme (Year 1: R0,880 m) • Provider of technical and management support identified
Investment Required	R 1,650 million per annum over three years (Total R4,950 million)
Employment	20 new permanent jobs (18 women and 2 males)
Production	By year four the project will produce 9 tonnes of abalone per annum, with a value of R 2,4 million per annum.
Exports	100% of the production will be exported.
Empowerment/ Transformation	All the employees of the project will be local historically disadvantaged individuals from Hondeklipbaai. They will be allocated equity within the business. Technical assistance and management support will be secured locally and skills transfer will be prioritised.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Agriculture, Land Reform, Environment and Conservation Department of Transport and Public Works
Inter-governmental	Department of Trade and Industry, Department of Public Works Department of Environmental Affairs and Tourism The Kamiesberg and Namakwa Municipalities.
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers (kelp company) and other mariculture operators (abalone farms).
Time-frames/ Duration	After 36 months the project will be economically self-sustainable.
Provincial Government Support Required	<ul style="list-style-type: none"> • Assistance in securing access to Oceana factory for project establishment • Financial assistance at R1,650 million per annum for three years pending first sales – R4,950 million
Other Public Sector Support Required	<ul style="list-style-type: none"> • Transfer of State land from national to provincial government (disused fish processing factory)
Comments	One of the strategic interventions proposed by way of this sector development strategy entails the promotion of Hondeklip Bay as a mariculture node. It is critical that the public sector should play an enabling role in promoting economic growth in Hondeklipbaai, the most impoverished coastal town in the Northern Cape. Research already conducted indicates the economic and financial viability of an abalone farming development at Hondeklip Bay. The study also reveals that a single project such as this one, together with related fishing and mariculture initiatives also described in this document could go a long way in alleviating the dire poverty afflicting the community in this area. .

Project Title	Namaqualand Mariculture Industrial Park (NAMIP)
Location	Port Nolloth, Richtersveld Municipality Namakwa District Municipality
Description	This project entails the development of a clustered set of complementary mariculture activities sharing common infrastructure and technical and business development support services. By achieving economies of scale and reducing barriers to entry to individual mariculture entrepreneurs through reduced overhead costs, locally available R&D facilities and, available land partially prepared, zoned for mariculture and appraised for environmental impact, it is anticipated that the Mariculture Park will attract private sector investments in mariculture. The project concept is currently based on a park operating company providing common infrastructure and services to two anchor projects and a number of smaller-scale satellite abalone production units sharing input supply chains and marketing channels with the anchor abalone project.
Status	<ul style="list-style-type: none"> • New project – anchor for mariculture development in Namaqualand • Project concept document completed • Project registered as a PPP with national Treasury • Planning for feasibility study advanced
Investment Required	Park establishment R15,540 million Anchor projects (private sector investments) - Abalone farm - R17,497 m, Turbot farm - R9,968 m, Abalone satellites - R7,466 m (co-funded with public sector)
Development Impact	
Employment	120 new permanent jobs growing to 250+ jobs within 5 years
Production	The estimated annual turnover of NAMIP including the individual business located there will be approximately R 110 million once in full production.
Exports	100% of production will be exported.
Empowerment/ Transformation	The NAMIP will be operated as a Public-Private-Partnership, with emphasis on promoting regional economic development and black economic empowerment.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Agriculture, Land Reform, Environment and Conservation
Inter-governmental	Department of Trade and Industry Department of Environmental Affairs and Tourism The Richtersveld and Namakwa Municipalities.
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers and processors of marine products.
Time-frames/ Duration	Development of NAMIP infrastructure – 12 months Establishment of individual mariculture enterprises – 6-24 months.
Provincial Government Support Required	<ul style="list-style-type: none"> • Feasibility study – R0,500 million • Development and co-resourcing of Special Purpose Vehicle/Development Company – R1,500 million (Yr 1), R1,000m (Yr 2), R0,500 (Yr 3) • Development and co-financing of NAMIP infrastructure – R15,540 million
Other Public Sector Support Required	<ul style="list-style-type: none"> • Infrastructure to service the site (road, power, etc) – Municipalities • Co-financing of feasibility study – DTI – R1,000 million • Co-financing of SPV/Development Company – DTI – R0,500 million • Co-financing of NAMIP infrastructure – DTI, DBSA, IDC, etc • Establishment of Research and Development facility – MCM-DEAT and DST • Training and development – Department of Labour
Private Sector Involvement	Financing and development of individual mariculture enterprises on the NAMIP, particularly anchor projects but also in joint ventures with PDI/emerging mariculturalists
Comments	The scenario presented represents a minimum “base-case”. It is anticipated that once established the park will attract further investments over the medium to long-term with concomitant increases in the development impact of the project on the local and regional economy. The project has already attracted considerable private sector interest.

Project Title	Port Nolloth Fish Factory Re-development
Location	Port Nolloth, Richtersveld Municipality Namakwa District Municipality
Description	This project entails the evaluation of re-development scenarios for the John Ovenstone fish processing factory in Port Nolloth. Premier Fishing has announced their intention to withdraw from Port Nolloth. It is envisaged that the facility could be re-developed as a multi-purpose fish processing and small-scale mariculture business incubator facility. The project will be linked to the NAMIP (and possibly operated by the same operating company) which is seen as a logical place to which small-scale mariculture ventures could "graduate". The factory facility could also house the research and development facilities for the NAMIP temporarily. A reconfigured fish processing facility at the factory will service the needs of PDI fish quota holders who wish to be part of this venture, as well as the small-scale experimental fishery project that has just commenced with support from MCM. On-site retail/tourism developments are possible at the factory site.
Status	<ul style="list-style-type: none"> • New project – expansion & diversification of existing processing facility • Valuation of factory obtained by FAMDA/Economic Affairs • Negotiation with Premier Fishing planned
Investment Required	Feasibility study – R0,500 million
Development Impact	
Employment	To be determined through feasibility but at least 50 jobs if fish processing recommences
Production	Multi-faceted – processed fish, live lobster, and various mariculture products
Exports	An estimated 60% of production will be exported.
Empowerment/ Transformation	The intention is to establish various partnerships between private sector investors/operators and the public sector. SMME development and black economic empowerment will be prioritised.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Agriculture, Land Reform, Environment and Conservation
Inter-governmental	Department of Trade and Industry Department of Public Works Department of Science and Technology The Richtersveld and Namakwa Municipalities.
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers and processors of fish products. Linkages to NAMIP mariculture ventures
Time-frames/ Duration	The re-development of the factory could take place over an 18 month period but fish processing operations could commence almost immediately
Provincial Government Support Required	<ul style="list-style-type: none"> • Funding for feasibility study – R0,500 million
Other Public Sector Support Required	<ul style="list-style-type: none"> • Co-financing of small-scale mariculture ventures – DTI, IDC, DEAT • Training and development – Department of Labour
Private Sector Involvement	<ul style="list-style-type: none"> • Leasing and operating of fish processing facility • Co-financing of small-scale mariculture ventures – DTI, IDC, DEAT
Comments	The project is a means by which PDI fish quota holders can be incentivised to land their fish in Port Nolloth instead of the Western Cape, thereby restoring land-based fish processing jobs in Port Nolloth that have been lost over the past 3-5 years. The project also has the potential to provide a site for small-scale mariculture ventures and an interim research and technology development facility for the Namaqualand Mariculture Industrial Park. The factory site could also be the location for tourism and retail developments.

Project Title	Kelp Processing
Location	Port Nolloth, Richtersveld Municipality
Description	The project has as its ultimate aim the optimal utilisation of the seaweed resource along the coast of the Northern Cape. It involves researching the options for the value-added processing of kelp collected and harvested in the area by a PDI company that holds three of the four kelp concessions available in the Namaqualand Coast. At present beach-cast kelp is collected, dried and milled for export to the far-east through Western Cape based intermediaries. South Africa is a net importer of high priced colloids such as agar, alginate and carrageenan. On the Northern Cape coast, Kelp (and Gracillaria) processing for the production of alginates and agar, used in the local and international food processing industries, represents a potentially highly lucrative business opportunity that could bring benefits to the historically disadvantaged coastal communities of Hondeklip Bay and Port Nolloth.
Status	<ul style="list-style-type: none"> • New project • Involves establishing the feasibility of value-added processing of primary product (kelp) • Terms of Reference for investigation completed
Investment Required	Feasibility study to determine value-added processing opportunities – R 0, 350 million Establishment of a pilot commercial value-adding plant – R 1, 500 million
Employment	25 new jobs (approx)
Production	To be determined through the pilot.
Exports	The project would aim to achieve a relatively high export percentage.
Empowerment/ Transformation	The existing company (Rekgaofela Kelp) working the kelp concessions referred to above is owned by 72 local, historically disadvantaged individuals. The aim of this project is to facilitate the acquisition of equity by Rekgaofela Kelp in a joint venture with external project developers.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Agriculture, Land Affairs, Environment and Conservation.
Inter-governmental	Department of Trade and Industry and the Richtersveld Municipality.
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers and processors of marine products.
Time-frames/ Duration	The feasibility study and establishment of the pilot plant will take 18 months
Provincial Government Support Required	<ul style="list-style-type: none"> • Funding for investigation into feasibility of value-added processing of kelp in the Northern Cape – R0,350 million • Establishment of kelp processing pilot project – R1,500 million • Support for research and development
Other Public Sector Support Required	<ul style="list-style-type: none"> • Research and Development – CSIR & DST • Training and development – Department of Labour
Comments	This project is intended to ascertain the economic and financial viability of processing of a primary product. Whether as organic fertiliser or sodium alginate for food processing and industrial uses, the long-term viability of the existing kelp collection, drying and milling project relies on adding value to the primary resource. Depending on the outcome of the above-mentioned investigation it will be necessary to secure further development capital for the project. The successful development of a kelp processing facility would truly empower the kelp concession holders by providing a means of both optimising revenues from the kelp resource and reinforcing the sustainability of jobs in the local seaweed industry in the Namaqualand region.

Project Title	Abalone Hatchery
Location	Port Nolloth, Richtersveld Municipality Namakwa District Municipality
Description	This project forms an integral part of the Port Nolloth Fish Processing and Mariculture Incubator. It entails the establishment of an abalone hatchery that will cater for the growing demand for abalone spat and juveniles. The South African onshore abalone industry is expanding rapidly as is abalone ranching which has been successfully piloted in the Northern Cape. Within this sector development strategy there is scope for a hatchery to supply three projects that form part of the strategy (Hondeklip Bay Abalone, abalone ranching and the small-scale abalone out-grower units at the mariculture incubator site). There is also scope for sales to a larger-scale abalone farm that is envisaged as an anchor project for the NAMIP. Further expansion of the local abalone industry will also lead to an increase in the demand for juvenile abalone that could be satisfied by a local abalone hatchery.
Status	<ul style="list-style-type: none"> • New project • Possible JV partner identified
Investment Required	R 2,5 million
Employment	8 new permanent jobs
Production	The objective is to produce 1million abalone spat (10mm) per annum valued at approximately R1 each. The project will be in full production after 18 months.
Exports	The product is an intermediate product supplying an export industry.
Empowerment/ Transformation	All the employees of the project will be local historically disadvantaged individuals. Technical assistance/management will be sourced externally and skills transfer to enable human resource development will be an integral part of project design.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Agriculture, Land Reform, Environment and Conservation
Inter-governmental	Departments of Trade and Industry, Department of Environmental Affairs and Tourism Department of Public Works The Richtersveld and Namakwa Municipalities.
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers and mariculture operators (abalone farms).
Time-frames/ Duration	After 18 months the project will be economically sustainable.
Provincial Government Support Required	<ul style="list-style-type: none"> • Co-funding through FAMDA – R1,650 million
Other Public Sector Support Required	<ul style="list-style-type: none"> • Land to be made available through municipality at Namaqualand Mariculture Industrial Park site
Comments	It is envisaged that this project will form an integral part of the Port Nolloth Mariculture Incubator. The project provides a unique opportunity to harness local expertise in the abalone industry to facilitate further growth in abalone production through the supply of spat and juvenile abalone to new abalone projects envisaged in the area, particularly the small-scale abalone producers whom it is intended to establish at the site. The project could also be instrumental in the development of these producers, some of whom will eventually “graduate” to the Namaqualand Mariculture Industrial Park (NAMIP).). In any JV the private sector partner would be expected to invest the balance of development capital required.

Project Title	Oyster Hatchery
Location	Port Nolloth, Richtersveld Municipality Namakwa District Municipality
Description	This project forms an integral part of the Port Nolloth Mariculture Incubator. It entails the establishment of an oyster hatchery in order to cater for the growing demand for oyster spat nationwide. Currently all oyster spat is imported from countries such as France, Chile and England and there is no oyster hatchery in South Africa. The proposed hatchery could conceivably provide spat to the two oyster farms in the Northern Cape and the one at Luderitz in Namibia who have indicated that they would source spat locally if it were available and price competitive. South African demand for oysters is growing with demand outstripping supply. The prospect for establishing a market for locally produced spat is therefore very good.
Status	<ul style="list-style-type: none"> • New project • Possible JV partner identified
Investment Required	R 2,650 million
Employment	6 new permanent jobs
Production	Production will be gradually increased as demand increases. Initially, an estimated turnover of R 1 million per annum is expected.
Exports	The product will be sold to local oyster farmers.
Empowerment/ Transformation	All the employees of the project will be local historically disadvantaged individuals. Technical assistance/management will be sourced externally and skills transfer to enable human resource development will be an integral part of project design.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Agriculture, Land Reform, Environment and Conservation
Inter-governmental	Departments of Trade and Industry, Department of Public Works Department of Environmental Affairs and Tourism The Richtersveld and Namakwa Municipalities. The Namibian Government (the Karas Region)
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers and mariculture operators (oyster farms).
Time-frames/ Duration	After 12 months the project will be economically sustainable.
Provincial Government Support Required	<ul style="list-style-type: none"> • Co-funding through FAMDA – R1,650 million
Other Public Sector Support Required	<ul style="list-style-type: none"> • Land to be made available through municipality at Namaqualand Mariculture Industrial Park site
Comments	It is envisaged that this project will form an integral part of the Port Nolloth Mariculture Incubator. The project provides a unique opportunity to harness local expertise in the oyster industry to facilitate further growth in oyster production through the supply of spat to existing and new oyster projects envisaged in the area. This project could also be instrumental in the development of small-scale oyster farmers, some of whom may eventually “graduate” to the Namaqualand Mariculture Industrial Park (NAMIP). In any JV the private sector partner would be expected to invest the balance of development capital required.

Project Title	Abalone Ranching
Location	Hondeklipbaai, Port Nolloth Kamiesberg and Richtersveld Municipalities Namakwa District Municipality
Description	Naturally occurring abalone stocks are under severe pressure along the South African coast due to an abnormally high incidence of poaching and over fishing. At the same time, the on-shore abalone farming industry is growing and achieving a high level of exports. In the Northern Cape a unique opportunity exists to ranch abalone in the ocean through the practise of seeding appropriate areas with juvenile abalone. This project therefore entails the release of juvenile abalone into the sea where they will grow, largely untended to be harvested later once they reach a marketable size. The attraction of abalone ranching is the relatively low capital development and overhead costs. At the same time, growth rates at experimental sites in the Northern Cape, where ranching is already being practised by two operators are such that ranching seems to be a viable proposition, although growth rates appear to vary from area to area.
Status	<ul style="list-style-type: none"> • New project • Experimental commercial ranching concessions available from MCM • Possible joint venture partners identified
Investment Required	R 1,250 million per annum over three years - R3,750 million
Employment	4 new permanent jobs during the seeding stage 30 new permanent jobs during the harvesting stage
Production	By year four the project will produce 12 tonnes of abalone per annum, with a value of R 3,2 million per annum.
Exports	100% of the production will be exported.
Empowerment/ Transformation	All the employees of the project will be local historically disadvantaged individuals from Hondeklipbaai and Port Nolloth. . Technical assistance/management will be sourced externally and skills transfer to enable human resource development will be an integral part of project design. Workers will be allocated equity within the business.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Agriculture, Land Reform, Environment and Conservation
Inter-governmental	Department of Environmental Affairs and Tourism The Richtersveld, Kamiesberg and Namakwa Municipalities.
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers (abalone hatchery) and other abalone farms (for holding facilities).
Time-frames/ Duration	After 36 months the project will be economically sustainable.
Provincial Government Support Required	<ul style="list-style-type: none"> • Co-funding for the project - R 1,250 million per annum 2003/04 to 2005/06 – R3,750 million • Assistance to secure ranching permits through MCM
Other Public Sector Support Required	<ul style="list-style-type: none"> • Market development - Department of Trade and Industry • Product development (for example value-adding/canning) - DTI
Comments	Extensive research conducted along the Namaqualand coast has shown that juvenile abalone seeded in the appropriate habitat can survive and grow to a harvestable size. The expertise to seed and establish small stocks of the species along the Namaqualand coast has been developed, and the Namaqualand coast, with no natural abalone stocks and an abundance of suitable abalone supporting habitat, has been identified as an important site for a potential abalone ranching industry. Expertise will be transferred to the local community through a process of intensive on-the-job training by project members experienced in both the scientific and practical aspects of ranching along the Namaqualand coast. It is important for government to play an enabling role for economic growth along the Namaqualand coast. Through research commissioned, it is clear that an economically sustainable abalone ranching project could go a long way in alleviating poverty by creating much needed long-term jobs in the region.

Project Title	Oyster Farming
Location	Port Nolloth, Richtersveld Municipality Namakwa District Municipality
Description	A shore based oyster farm will be established in Port Nolloth. Oyster spat (juveniles) will be purchased from an oyster hatchery and reared in bags and baskets until they reach market size. Risks associated with the project will be reduced firstly, through the farming of juveniles which will result in a lower mortality rate and secondly through the use of local expertise that will provide mentorship, technical advice and management services to the project. Demand for oysters in South Africa is buoyant with demand currently exceeding supply.
Status	<ul style="list-style-type: none"> • New project • Possible joint venture partners identified
Investment Required	R 2,150 million
Employment	8 new permanent jobs
Production	Production will be gradually increased as demand increases. An estimated annual turnover of R 1 million is expected.
Exports	The product will be sold to local intermediaries and should our production be competitive we will export.
Empowerment/ Transformation	All the employees of the project will be local historically disadvantaged individuals. Technical assistance/management will be sourced externally and skills transfer to enable human resource development will be an integral part of project design. The business model will allow for equity for the workers.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Agriculture, Land Reform, Environment and Conservation
Inter-governmental	Department of Trade and Industry Department of Public Works Department of Environmental Affairs and Tourism The Richtersveld and Namakwa Municipalities.
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers and mariculture operators (oyster hatchery and other oyster farms).
Time-frames/ Duration	After 12 months the project will be economically sustainable.
Provincial Government Support Required	<ul style="list-style-type: none"> • Co-funding through FAMDA - R 2,150 million
Other Public Sector Support Required	<ul style="list-style-type: none"> • Land to be made available through municipality at Namaqualand Mariculture Industrial Park site
Comments	The South African domestic market for fresh oysters is growing and demand currently outstrips supply. The rapid growth rates achievable along the Northern Cape coast due to the high level of nutrients found in the sea water off the Namaqualand coast gives the prospective oyster farmer a natural competitive advantage. Expansion of this sub-sector of mariculture is envisaged on the NAMIP (Namaqualand Mariculture Industrial Park). The development of an economically sustainable project will assist in the alleviation of poverty in Port Nolloth through long-term job creation.

Project Title	Port Nolloth Abalone Farming
Location	Port Nolloth Richtersveld Municipality Namakwa District Municipality
Description	This project entails the establishment of a shore-based abalone farm in Port Nolloth. Abalone juveniles will be purchased from a local abalone hatchery and reared in tanks until they reach market size at which time they will be exported. The rearing of juveniles will result in a lower mortality rate than with hatched abalone and thereby decrease the risks associated with normal abalone grow-out facilities that are supplied directly from hatcheries. The global demand for abalone is relatively constant (although reduced at present as a consequence of SARS). It is envisaged that a shortfall in the supply of wild abalone is imminent due to an increase in the harvesting (legal and illegal) of wild abalone stocks. The only way that South Africa can maintain the current supply levels is by encouraging and supporting the farming of abalone.
Status	<ul style="list-style-type: none"> • New project • Part-funding secured through DEAT Poverty Relief Programme (R0,900 million) • Provider of technical and management support identified
Investment Required	R 1,650 million per annum over three years (Total R4,950 million)
Employment	8 new permanent jobs
Production	By year four the project will produce 9 tonnes of abalone per annum, with a value of R 2,4 million per annum.
Exports	100% of the production will be exported.
Empowerment/ Transformation	All the employees of the project will be local historically disadvantaged individuals from Port Nolloth. They will be allocated equity within the business. Technical assistance and management support will be secured locally and skills transfer will be prioritised.
Linkages	
Inter-departmental	Department of Economic Affairs and Tourism Department of Agriculture, Land Reform, Environment and Conservation
Inter-governmental	Department of Trade and Industry, Department of Environmental Affairs and Tourism The Richtersveld and Namakwa Municipalities.
Sectoral/Economic	Possible upstream and downstream economic linkages with input suppliers (kelp company) and other mariculture operators (abalone farms).
Time-frames/ Duration	After 36 months the project will be economically self-sustainable.
Provincial Government Support Required	<ul style="list-style-type: none"> • Financial assistance for three years pending first sales – R4,050 million (R0,750 m – year 1, R1,650 million – year 2, R1,650 million – year 3)
Other Public Sector Support Required	<ul style="list-style-type: none"> • Granting of necessary permits - Department of Environmental Affairs and Tourism
Comments	Research already conducted indicates the economic and financial viability of an abalone farming development at Port Nolloth. The study also reveals that a single project such as this one, together with related fishing and mariculture initiatives also described in this document could go a long way in alleviating the dire poverty afflicting the community in this area.

In addition to the projects profiled above, a number of other possible projects have been identified that could be developed as part of the strategy for the promotion of fishing and mariculture development on the Namaqualand coast. However, these are generic opportunities that have not yet been appraised and for which a project developer or sponsor has not yet been identified. They are nevertheless included as part of the implementation plan for this fishing and mariculture sector development strategy which will by necessity include “the appraisal and promotion of new projects”.

Project	Description
Oyster farming	<p>The South African domestic market for fresh oysters is also growing and demand currently outstrips supply. The rapid growth rates achievable along the Northern Cape coast due to the high level of nutrients found in the sea water off the Namaqualand coast gives the prospective oyster farmer a natural competitive advantage. Allied to this, a local oyster grower has expressed the intention to develop an oyster hatchery and will soon be in a position to supply price competitive oyster spat to other oyster growers in the area. Another entrepreneur has recently developed an oyster growing facility at Kleinsee and Alexkor continues to farm Oysters near Alexander Bay. Further expansion of this sub-sector is envisaged on the NAMIP</p>
Seaweed	<p>Aside from the kelp collection and processing projects described above, opportunities also exist for the cultivation of seaweed species such as Gracillaria that has been cultivated under pilot commercial conditions previously at Kleinsee on the Northern Cape coast.</p>
Marine Food Fish Farming	<p>Marine finfish farming is probably the most significant “next generation” investment opportunity in the mariculture industry in South Africa. Research carried out as part of the Northern Cape province’s Sector Planning process has shown that a variety of high value marine food fish could be cultured on the Northern Cape coast. Trout, salmon, turbot, kabeljou, kob and other indigenous line fish species are candidate species for commercial development. At present, discussions are underway with two prospective investors in marine finfish farming. One is contemplating the development of a R12 million farm at Port Nolloth producing turbot – an exotic species – for export. The other is pilot testing the rearing of Dusky Kob, an indigenous species.</p> <p>In support of the possible development of marine food fish farming, a local consortium is currently soliciting funding for the establishment of a marine finfish hatchery and the development of commercially viable hatchery technology to support the development of the marine food fish industry on the Northern Cape coast.</p>
Abalone processing	<p>As a diversification and value-added processing opportunity, the canning of Abalone in the Northern Cape may represent an attractive commercial proposition, particularly once a critical mass of primary production has been established in the area. Some abalone produced in the Northern Cape production is canned in the Western Cape at present but the Northern Cape provincial government would be very supportive of the processing of local produce in the Northern Cape.</p>
Halophytes	<p>A class of plants known as halophytes (sea water plants) represent a possible project opportunity on the Northern Cape coast. Grown successfully in the Middle East for export to Europe, Salicornia is grown for the fresh produce market and for the extraction of seed oil for use in the pharmaceutical market. Given the low opportunity cost of cultivating plants irrigated with seawater on</p>

	old mined out areas, halophytes could potentially represent a commercial investment opportunity on the Northern Cape coast.
Brine Shrimp Artemia	Brine shrimp (<i>Artemia</i>) are small crustaceans that occur naturally in salt ponds. During harsh environmental conditions brine shrimp produce small cysts that can be dried and stored for several years. When returned to water the cysts hatch as young brine shrimp. A large international market exists for brine shrimp cysts used for the generation of live feed in fish hatcheries around the world. While local species are not best suited for this purpose (because they are a large, low value species), the cultivation of exotic species, wholesaling for \$50-70 per kilogram, would make artemia culture a viable proposition. The global market for <i>Artemia</i> is growing and under-supplied and this may make their cultivation on the Northern Cape coast a viable proposition.
Shallow-water Hake	Hake trawlers target deep-water hake as they haul cleaner catches (i.e. larger fish with less by-catch of other species) in deeper waters (ca. 500m). Research catch data analysed indicates that shallow-water hake is found off the Northern Cape and fish of a harvestable size are within the range of small-scale vessels that could operate out of Port Nolloth. An investigation is currently being undertaken to determine the merits of a feasibility study to determine the commercial viability of this fishery.

6 STRATEGIC PARTNERS FOR FISHING AND MARICULTURE DEVELOPMENT

In promoting fishing and mariculture development in the Northern Cape Province, the provincial government will have to establish a number of partnerships and strategic alliances with a range of public, parastatal and private sector agencies. Some of these have already acknowledged the potential of the fishing and mariculture sectors to contribute significantly to the further growth and development of the Namaqualand coastal economy while others have not. In developing partnerships and strategic alliances with the afore-mentioned agencies, it will be contingent upon the provincial government and its agents to raise levels of awareness of the growth potential for these sectors and the positive socio-economic impact that fishing and mariculture development can have in the Namaqualand region. Table 2 below identifies a number of partner agencies that could support provincial efforts to promote sector development as well as their current and possible future additional role in that process.

Table 2 – Strategic Partners for Fishing and Mariculture Development

Organisation	Current role in fishing and mariculture development	Envisaged future role in fishing and mariculture development
Department of Environmental Affairs and Tourism, Branch: Marine and Coastal Management	<ul style="list-style-type: none"> • Control access to marine resources • Custodians of legislation and policy pertaining to fishing and mariculture development • Perform regulatory functions 	<ul style="list-style-type: none"> • Lead agent for national mariculture sector plan • Greater developmental role in promoting fishing and mariculture industry development
Department of Trade and Industry	<ul style="list-style-type: none"> • Provider of generic range of industrial support measures • Trade and investment promotion 	<ul style="list-style-type: none"> • Provider of tailored industrial support measures • Project development partner – MOU's for support from Council of Trade and Industry Institutions
Department of Science and Technology	<ul style="list-style-type: none"> • Provider of generic funding for research and technology development (on a competitive basis) 	<ul style="list-style-type: none"> • Provider of targeted research and technology development in support of specific projects
Northern Cape Department of Economic Affairs and Tourism	<ul style="list-style-type: none"> • Commissioned baseline sectoral study into fishing and mariculture (1996/97) • Commissioned Fishing and Mariculture Sector Plan (1998) • Instrumental in establishment of FAMDA (1998/99) 	<ul style="list-style-type: none"> • Provide material and financial support to FAMDA • Provide direct financial and material support to key projects • Provide avenue for lobbying national and local government on matters pertaining to fishing and mariculture development.
Fishing and Mariculture Development Company (FAMDA)	<ul style="list-style-type: none"> • Agency established to promote fishing and mariculture development in the Northern Cape through increased 	<ul style="list-style-type: none"> • Candidate organisation to assume role of operating company for NAMIP / Fish factory project developments

	<ul style="list-style-type: none"> access to marine resources Currently co-manages Rekgaofela Kelp, Small-scale experimental fishery, mussel and limpets projects Currently provides input into sector planning processes 	<ul style="list-style-type: none"> Should continue to act as implementing agent for fishing and mariculture sector plan Could administer and support coastal management processes on behalf of MCM-DEAT and Dept Agriculture, Land Reform, Environment and Conservation
Northern Cape Department of Environmental Affairs and Tourism	<ul style="list-style-type: none"> Co-manages Provincial Coastal Committee, Coastal Management and Sustainable Coastal Livelihood Programmes with MCM-DEAT Administers NEMA and Environment Conservation Act (EIA's) and other environmental legislation 	<ul style="list-style-type: none"> More direct collaboration with FAMDA and Department of Economic Affairs and Tourism w.r.t. EIA's and related legislation
Alexkor	<ul style="list-style-type: none"> Supports development of mariculture as part of its programme to support sustainable non-mining projects for a post-mining economy There are a number of pumping sites that offer potential development nodes within the Alexkor property Oubeep Bay immediately to the South of Port Nolloth offers a high potential site for both shore based aquaculture and ranching 	<ul style="list-style-type: none"> Privatisation pending – likelihood that oyster project will be disposed of to combination of private and community interests In future, could facilitate or frustrate access to un-developed high potential mariculture sites Need to be engaged to secure access to mariculture sites to facilitate development of sector ahead of minerals downscaling
De Beers	<ul style="list-style-type: none"> Support mariculture activity – pilot oyster farm - at Kleinsee in a mined out area adjacent to the mine's AK3 pump station Mine policy favours the development of non-mining businesses with private sector partners with specialist expertise. Control access to high potential coastal sites Abalone ranching concession offshore Kleinsee coast Limit access to kelp concession held by Rekgaofela Kelp 	<ul style="list-style-type: none"> In future, could facilitate or frustrate access to un-developed high potential mariculture sites Need to be engaged to secure access to mariculture sites to facilitate development of sector ahead of minerals downscaling Could be lobbied to consider providing financial assistance to key fishing and mariculture projects as part of its planning for a post-mining economy
Richtersveld Municipality	<ul style="list-style-type: none"> Member of Provincial Coastal Committee Represented on FAMDA's Board of Directors 	<ul style="list-style-type: none"> Zoning of land adjacent to coast in Port Nolloth Provision of municipal infrastructure and services to fishing and mariculture projects

Nama-Khoi Municipality	<ul style="list-style-type: none"> • Member of Provincial Coastal Committee • Director on FAMDA's Board of Directors 	<ul style="list-style-type: none"> • Zoning of land adjacent to coast in Kleinsee • Provision of municipal infrastructure and services to fishing and mariculture projects
Kamiesberg Municipality	<ul style="list-style-type: none"> • Member of Provincial Coastal Committee • Represented on FAMDA's Board of Directors 	<ul style="list-style-type: none"> • Zoning of land adjacent to coast in Hondeklip Bay • Provision of municipal infrastructure and services to fishing and mariculture projects
Namakwa District Municipality	<ul style="list-style-type: none"> • Member of Provincial Coastal Committee • Represented on FAMDA's Board of Directors 	<ul style="list-style-type: none"> • Provision of infrastructure in support of NAMIP
Rhodes University	<ul style="list-style-type: none"> • Have provided consulting services for the formulation of Northern Cape Fishing and Mariculture sector planning processes over past six years • Are currently engaged in formulation of coastal management strategy for MCM-DEAT 	<ul style="list-style-type: none"> • Technical and scientific support as well as resource economics
Council for Scientific Research (CSIR)	<ul style="list-style-type: none"> • None at present 	<ul style="list-style-type: none"> • Possible partners in technology development for mariculture
Land Bank	<ul style="list-style-type: none"> • None at present 	<ul style="list-style-type: none"> • Possible financier of fishing and mariculture enterprises
Development Bank of Southern Africa (DBSA)	<ul style="list-style-type: none"> • None at present 	<ul style="list-style-type: none"> • Possible financier of infrastructure (public and private) necessary for fishing & mariculture development
Industrial Development Corporation (IDC)	<ul style="list-style-type: none"> • Financier of Abalone and Oyster farming (Port Nolloth Sea Farms) 	<ul style="list-style-type: none"> • Possible financier of fishing and mariculture enterprises
Private Sector	<ul style="list-style-type: none"> • Development and operation of fishing and mariculture enterprises in the area 	<ul style="list-style-type: none"> • Development and operation of fishing and mariculture enterprises in the area

7 IMPLEMENTING THE FISHING AND MARICULTURE SECTOR DEVELOPMENT STRATEGY

7.1 Creating an Enabling Environment for Fishing and Mariculture Development

The realisation of the development potential in the fishing and mariculture sectors in the Northern Cape Province requires the lead agency and its partners to have a clear implementation plan. At the very least, in order to achieve increased investment, participation, competitiveness and environmental integrity it will be necessary to achieve:

- Commitment between state and parastatal agencies to the specific development targets and outcomes specified in this sector development strategy.
- Co-ordination between the various public entities, state and parastatal, involved in implementation.
- Close collaboration between the public and private sector through effective partnerships to secure the investments needed to create jobs and maximise the socio-economic benefits to be gained through fishing and mariculture development.
- A facilitative spatial planning framework for the development of fishing and mariculture activities on municipal land.
- The development of requisite core competencies and capabilities to ensure the development of the capacities necessary for the development of competitive fishing and mariculture ventures.
- The development of a facilitative institutional framework for fishing and mariculture development through an effective range of organisational structures, processes, and instruments.
- The proper sequencing of implementation actions to ensure the coherent development of the fishing and mariculture sectors in the Northern Cape Province.
- Monitoring of progress to ensure the efficient and effective use of public and private sector resources in support of fishing and mariculture development.

7.2 The Role of the Public and Private Sectors in Fishing and Mariculture Development

The resource requirement for the implementation of the fishing and mariculture sector development strategy is considerable. Resource constraints and the need for efficiency dictate that role confusion and duplication of effort must be avoided. Distinction therefore needs to be made between those investments that the public sector will have to make to stimulate development in this sector from those that will be made by the private sector. Above all, the key to the successful promotion of the fishing and mariculture sectors is the development of a meaningful public-private partnership. This strategy recognises that the process of developing sector potentials must be public sector led and private sector driven.

The public sector role in promoting fishing and mariculture development should include the allocation of resources for:

- Sector planning
- The provision of institutional support to catalyse industry development
- Reducing barriers to entry into mariculture through the provision of supporting infrastructure and research and development services
- Providing access to industrial support measures
- Support the private sector through investment promotion
- Assist the private sector with market development
- Supporting and monitoring the participation of PDI entrepreneurs in fishing and mariculture development
- Regulation

The role of the private sector is paramount in driving the development of fishing and mariculture in the Northern Cape. The private sector can be expected to:

- Make commercial investments in the various fishing and mariculture opportunities that exist in the area and in so doing assume normal commercial risk
- Penetrate markets for marine products through the production of internationally competitive commodities
- Provide training, mentorship and guidance for fair recompense to PDI's involved in fishing and mariculture development

7.3 Summary of Strategic Interventions and Projects

In this section, the series of strategic interventions that need to be undertaken by the public sector in support of fishing and mariculture development in the Northern Cape Province as well as the portfolio of projects in which the public sector should take a leading role in implementation are summarised in Table 3 below. When combined, these strategic interventions and project level support measures to be provided by the public sector will constitute the bulk of the Northern Cape Fishing and Mariculture Sector Development Strategy.

Table 3 – Summary of Strategic Interventions and Projects that form the Northern Cape Fishing and Mariculture Sector Development Strategy

SUMMARISED FISHING AND MARICULTURE SECTOR DEVELOPMENT STRATEGY		
Strategic Interventions	Responsible Agency	Required Action / Support
F.1 – Promotion of the Port Nolloth Fishing Node	FAMDA, MCM, PDEAT, Richtersveld and Namakwa municipalities	<ul style="list-style-type: none"> • Facilitation of joint venture business arrangements between quota holders for processing and marketing • Public sector investments in critical fishing industry related infrastructure • Regional fishery management interventions to promote fishery development

F.2 – Support for the Development of Small-Scale Experimental Fishery	FAMDA, MCM, PDEAT	<ul style="list-style-type: none"> • Provide funding for appointment of project co-ordinator • Provide resources for assessment of data gathered as part of pilot project
F.3 – Review West Coast Rock Lobster TAC	FAMDA, MCM	<ul style="list-style-type: none"> • Resources for stock assessment and related scientific appraisal
M.1 – Access to the Coast	PDEAT, DEAT, DME, DPE, DPLG	<ul style="list-style-type: none"> • Engage with De Beers, Trans Hex and Alexkor to facilitate integration of mine decommissioning with mariculture development
M.2 – National Mariculture Sector Plan	MCM, PDEAT	<ul style="list-style-type: none"> • Make provincial inputs into national sector planning exercise
M.3 – Industrial Support Measures	DTI, MCM, PDEAT	<ul style="list-style-type: none"> • Lobby for designation and review of specific industrial support measures to support mariculture development • Support local government to provide appropriate support for mariculture development as part of LED / IDP development management
M.4 – Institutional Strengthening of FAMDA	PDEAT, MCM	<ul style="list-style-type: none"> • Provide support for organisational development • Secure additional funding for activities related to implementation of Sector Development Strategy
M.5 – Reducing Barriers to Entry to Mariculture	PDEAT, MCM, DTI, DST	<ul style="list-style-type: none"> • Review specific barriers to entry and identify measures to overcome such barriers • Formulate proposals in respect of infrastructure development, applied scientific research and technology development
M.6 – Promotion of Hondeklip Bay Mariculture Node	FAMDA, PDEAT, MCM, Kamiesberg and Namakwa municipalities	<ul style="list-style-type: none"> • Secure access to Oceana factory site for development small-scale mariculture node • Identify and secure municipal support for infrastructural development in support of mariculture node
Public Sector Led Projects	Project Status	Public Sector Support Required
Namaqualand Mariculture Industrial Park	<ul style="list-style-type: none"> • New project • Anchor project for mariculture development in Namaqualand • Project concept document completed • Project registered as a PPP with national Treasury • Planning for feasibility study advanced 	<ul style="list-style-type: none"> • Secure access to (municipal) site • Development and co-resourcing of planning for PPP / operating entity – R0,5 million • Feasibility study – R1,5 million • Co-financing of NAMIP infrastructure - R15,5 million • Development and co-financing of supporting infrastructure • Establishment of research and development facility
Port Nolloth Fish Factory Redevelopment	<ul style="list-style-type: none"> • New project – expansion & diversification of existing processing facility • Valuation of factory 	<ul style="list-style-type: none"> • Facilitate access to factory facility • Funding for feasibility study – R0,500 million • Co-financing of small-scale mariculture

	<p>obtained by FAMDA/Economic Affairs</p> <ul style="list-style-type: none"> • Negotiation with Premier Fishing planned 	<p>ventures – DTI, IDC, DEAT</p> <ul style="list-style-type: none"> • Training and development – Department of Labour
Kelp Harvesting and Collection	<ul style="list-style-type: none"> • Existing project employing approximately 35 people producing 700 tonnes of dried, milled kelp • Not maximising utilisation of concession areas (financial constraints, shortage of equipment and lack of access to some concession areas) 	<ul style="list-style-type: none"> • Funding for acquisition of additional machinery (3 modules at R1,250 million per module) – R3,750 million • Negotiation of access to inter-tidal zone within Alexkor, Trans Hex and De Beers mines to work concessions held by company
Mussel and Limpet Harvesting	<ul style="list-style-type: none"> • New project • Experiment to prove commercial sustainability of harvesting mussels and limpets • Part funding secured through SCLP (DEAT) 	<ul style="list-style-type: none"> • Assistance to secure access to inter-tidal zone within Alexkor, Trans Hex and De Beers mines • Funding for project management via FAMDA • Training and development of project participants
Kelp Processing	<ul style="list-style-type: none"> • New project • Involves establishing feasibility of value-added processing of primary product (kelp) • Terms of Reference for investigation completed 	<ul style="list-style-type: none"> • Funding for investigation into feasibility of value-added processing of kelp in the Northern Cape – R0,350 million • Establishment of kelp processing pilot project – R1,500 million • Support for research and development
Small-scale Fishing Experiment	<ul style="list-style-type: none"> • Approved experimental project (DEAT) 8/2002 – 7/2004 • Partially resourced through MCM and PDEAT • Programming of experiment currently being revised 	<ul style="list-style-type: none"> • Funding for appointment of project coordinator – R0,144 million • Provide resources for assessment of data gathered as part of pilot project – R0,250 million
Hondeklip Bay Abalone grow-out	<ul style="list-style-type: none"> • New project • Part-funding secured through DEAT Poverty Relief Programme • Provider of technical and management support identified 	<ul style="list-style-type: none"> • Assistance in securing access to Oceana factory at Hondeklip Bay for project establishment • Financial assistance - R1,650 million per annum for three years pending first sales
Oyster Hatchery	<ul style="list-style-type: none"> • New project • Possible JV partner identified 	<ul style="list-style-type: none"> • Co-funding through FAMDA – R1,650 million
Abalone Hatchery	<ul style="list-style-type: none"> • New project • Possible JV partner identified 	<ul style="list-style-type: none"> • Co-funding through FAMDA – R1,650 million
Abalone Ranching	<ul style="list-style-type: none"> • New project • Experimental commercial ranching concessions available from MCM • Possible joint venture 	<ul style="list-style-type: none"> • Co-funding for the project - R 1,250 million per annum 2003/04 to 2005/06 – R3,750 million • Assistance to secure ranching permits through MCM

	partners identified	
Oyster Farm	<ul style="list-style-type: none"> • New project • Possible JV partner identified 	<ul style="list-style-type: none"> • Co-funding through FAMDA - R 2,150 million
Port Nolloth Abalone Farm	<ul style="list-style-type: none"> • New project • Part-funding secured through DEAT Poverty Relief Programme (R900 000.00) • Provider of technical and management support identified 	<ul style="list-style-type: none"> • Financial assistance for three years pending first sales – R4,050 million (R0,750 m – year 1, R1,650 million – year 2, R1,650 million – year 3) • Granting of necessary permits - Department of Environmental Affairs and Tourism

7.4 Implementation

In close collaboration with the provincial Department of Economic Affairs and Tourism, FAMDA has been tasked to identify a schedule of activities, budgets, outputs and time-frames that will define the detailed action plan for the implementation of this Fishing and Mariculture Sector Development Strategy.

As the provincially designated lead agent for the promotion of fishing and mariculture development in the Northern Cape Province, FAMDA will also be assigned the responsibility to alert public sector agencies identified above to the need for action on their part. FAMDA will liaise closely with identified agencies to secure commitment to the Fishing and Mariculture Sector Development Strategy.

The role of the private sector in partnering the public sector in implementing the Fishing and Mariculture Sector Development Strategy is critical. It bears re-stating that the development of mariculture in the Northern Cape will be private sector driven in so far as private sector capital will have to be raised for investment in the various commercial opportunities that exist in the area. It will also be critical to determine an appropriate set of financial support measures and incentives to reinforce private sector investment in the area. FAMDA will also play a critical role in garnering private sector support for fishing and mariculture development and will collaborate with the provincial Department of Economic Affairs and Tourism as well as the national Department of Trade and Industry in this regard.

7.5 Communicating the Sector Development Strategy

A very important task that will also be undertaken by FAMDA, together with the Department of Economic Affairs and Tourism, is the communication of this Fishing and Mariculture Development Strategy as widely as possible amongst those likely to be impacted by it. Starting with the membership and office bearers of FAMDA, the affected local authorities, the Provincial Coastal Committee, the fishermen and mariculturalists of the Northern Cape and the wider coastal community at large it will be necessary to disseminate information pertaining to the key elements of this strategy. In this way an iterative process of refinement and elaboration of the strategy will be possible as will an integrated approach to sector strategy implementation.

8 REFERENCE MATERIAL

Northern Cape Province – Baseline Sectoral Studies: Fishing and Mariculture, March 1997

Republic of South Africa, Marine Living Resources Act (Act No.18 of 1998)

Department of Economic Affairs and Tourism - Northern Cape Province Fishing and Mariculture Sector Plan, 1999

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