Between the Atlantic and the Namib
An Environmental History of Walvis Bay

Commissioned by the Walvis Bay Local Agenda 21 Project

Melinda Silverman
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FOREWORD

The Walvis Bay Local Agenda 21 Project is a three year development project funded by the Municipality of Walvis Bay and the Danish government's international development aid agency, Danida. The project started in mid-2001, at which time it was headquartered at the municipality itself, and spearheaded by the municipality’s new three person Environmental Management Section. The project also works with other municipal officials and with other stakeholders from the community, industry, and from national and regional government. Technical assistance for the project is provided by the Danish firm, COWI A/S, and partners, including DHI Water and Environment, and the Danish Municipality of Hillerod.

The project aims at achieving a workable balance between protecting the environment and promoting economic and social development – the real challenge of sustainable development. The intention is to attempt to assure that the citizens of Walvis Bay continue to benefit from their environment for generations to come. Accordingly, the overall goal has been to develop a plan and implement practical activities for the environmental management of the Walvis Bay area in line with the Local Agenda 21 approach for local people to work towards the sustainable development of their areas.

In this, the project developed a joint and simultaneous concern with the environment and development. Protecting the desert, the birds and the sea, conserving water and energy, combating water, air and ground pollution, and ensuring that people have decent services and sanitation and are living in a healthy fashion all fell within the ambit of the project and its activities.

The project was tasked with developing an environmental policy (i.e., the lines of action intended to be taken to conserve and improve the natural and urban environment) and a strategy (how this would be achieved with practical activities) in collaboration with the Municipality and citizens of Walvis Bay. Walvis Bay residents, as the project team soon discovered, are proud of their unusual environment, located as it is between the harsh Namib Desert and the cold South Atlantic Ocean. However, when “environmental management” was discussed, the response was typically to see it as synonymous with “nature conservation” rather than partaking of the broader view above, which emphasizes the constructive impacts of human action on all aspects of the environment, both natural and human-made. It was decided to build on this interest in Walvis Bay as a place whose people had always been and were still interacting in an ongoing way with their environment, notably its marine and desert ecosystems, with resulting ecological changes that humans have played a large role in causing.

My colleague, Melinda Silverman, was therefore commissioned to research and write an account of environmental change in Walvis Bay in relation to urban, social and economic development, with a particular focus on the postwar era. The surprisingly large amount of scientific and historical work on the area served as source material, complemented by an intensive period of in-person research in Walvis Bay. The town is often seen as a place of strong wind, blowing sand and malodour. Melinda’s report succeeds well in correcting and broadening the perspective. It stands as both a fascinating environmental history of Walvis Bay itself, and as an excellent model for how to portray the interaction of humans and nature in the making of the environments we inhabit and manage.

Robin Bloch
Chief Technical Advisor, Walvis Bay Local Agenda 21 Project.
ACKNOWLEDGEMENTS

This report is based on the work of many people. In particular, I would like to acknowledge:
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"The question of questions for mankind - the problem which underlies all others, and which is more deeply interesting than any others - is the ascertainment of the place which man occupies in nature and of his relation to the universe of things."

BACKGROUND

This report examines the dynamic relationship between human activity and the natural environment, outlining the processes that gave rise to the unique character of Walvis Bay. Constituted by ocean, bay, lagoon, desert and delta, this sensitive environment is subject to changing ocean currents, winds, tidal movements and periodic flooding, forces over which humans have little influence.

There are other aspects of the environment on which humans have a profound impact, however, using nature to sustain themselves and their economic activities through the exploitation of natural resources for trade, industry and production. Consequently this report places equal emphasis on human actions and their effect on this environment.

For many centuries these effects were not particularly significant and humans touched the earth lightly. On a global scale, economic development happened slowly until the 1500s because the world economy developed slowly; because populations grew slowly; and because improvements in productive technologies came slowly. Then came industrialisation, radically transforming the delicate balance between man and environment.

According to John McNeill in Something new under the sun: an environmental history of the twentieth century, industrialisation has spurred spectacular growth:

- a quadrupling of the world’s population;
- a 14-fold expansion of the world economy;
- a 16-fold increase in energy use; and
- an expansion of industrial output by a factor of 40 (2000, xix).

These advances should be evaluated against a 13-fold increase in carbon dioxide emissions and a nine-fold increase in water use.

Colonial expansion, which occurred in tandem with industrialisation, facilitated the spread of these, changed relationships to all parts of the world in unique and highly charged ways. The unequal division of power between colony and metropole intensified human exploitation of natural resources in the colonies to the benefit of those in distant metropoles. Walvis Bay’s status, first as a colony, ruled from the Cape, which in turn was ruled as a colony from Great Britain; and then as an enclave of South Africa, gave rise to short-sighted policies based on maximum extraction of natural resources.

Economic development in the twentieth century therefore should not be read only as a narrative of human progress, even though human ingenuity undoubtedly helped drive this process. New forms of energy, enhanced labour productivity, technological innovation and new forms of social and business organisation, all intensified the pace of economic activity. But the effects of these transformations were not always beneficial and their social consequences were often unpredictable. This great modern expansion proved both liberating, and disruptive. Surges in population, production and energy use inevitably affected different regions, nations, classes and social groups unevenly, favouring some and hurting others. A local practice in Southern Africa like the contract labour system is just one example that undoubtedly enhanced industrial production and benefited business, while simultaneously undermining indigenous communities.
The sheer size and intensity of the transforming processes associated with industrialisation has meant “that in some instances increased intensities threw some switches” (McNeill, 2000, 4). In a powerful illustration of this point, McNeill cites incremental increases in fishing capacity - in California and Peru - that ultimately caused the total collapse of some oceanic fisheries. This particular example should resonate for the residents of Walvis Bay who in the late 1970s witnessed the dramatic rise, but even more dramatic collapse of the pelagic - or shallow water - fishing industry. Overfishing during the boom years of the 1950s and 1960s finally “threw a switch”, nearly wiping out the pilchard and anchovy populations. This in turn led to the closure of factories, severe job losses and the departure of one-third of the town’s population. Today’s economy, built on the exploitation of Namibia’s demersal - or sea-bottom - fisheries could prove equally tenuous if fish populations are not maintained at sustainable levels. Residents of Walvis Bay who are aware of this history are already at a considerable advantage: they realise the need for the sustainable use of natural resources.

The Walvis Bay municipality is currently working to create the context for sustainable development through the Local Agenda 21 process to ensure that development is socially, economically and environmentally sustainable.

At present the Local Agenda Project is focusing on four areas of activity:

1. In collaboration with the municipality of Walvis Bay, an environmental policy is being drafted to ensure that human needs can be met without compromising the natural environment. A strategy will be devised to achieve these aims.

2. Scientists are studying the coastal area - including the lagoon, Pelican Point and the bay - to gather data that will help clarify the ongoing dynamic relationship between man and the environment in Walvis Bay, and to help the various stakeholders make informed decisions about sustainable development in the future. Some of the scientists are exploring tidal action on Pelican Point, looking at how natural forces could ultimately erode the peninsula.

There are therefore two challenges for residents of Walvis Bay and policy makers. The first is to measure and understand the rate and direction of environmental change. The second is to think sensibly about how environmental change might be managed before dangerous thresholds are breached by unwitting collective activities. This document seeks to track the complex relationships between humans and the environment in the past with a view to make accurate predictions about the future.

**STRUCTURE OF THE REPORT**

The report is structured chronologically. It identifies key periods in the history of Walvis Bay where the changing relationships between human agency and the environment are most clearly articulated. The sections cover:

1. **WALVIS BAY LOCAL AGENDA 21 PROJECT**
2. **BETWEEN THE ATLANTIC AND THE NAMIB - AN ENVIRONMENTAL HISTORY OF WALVIS BAY**
• The pre-colonial period
• European exploration
• Colonisation
• Consolidation
• Industrial expansion
• Uncertain times
• Annexation to re-integration
• Re-integration and after.

The natural environment is divided - albeit arbitrarily - into
• Desert
• Ocean
• Bay
• Delta, and
• Lagoon.

These environments and the biota they support are present throughout the historical evolution of the area, but some elements come to dominate the narrative at a particular time, with particularly dramatic effects.

This report explores human agency in three ways:
• An introductory section sketches the broad political background, in so far as it impacts on human engagements with the environment.
• Where human activity impacts directly on the five identified environments, the report examines this activity in relation to the affected environment.
• As Walvis Bay urbanised, a separate section deals with the town as a unique environment in its own right.

In the interests of clarity this report constructs some arbitrary divisions, chopping up history into discrete periods, dividing one type of environment from another, separating out the economic and political dimensions of human activity. Such compartmentalisation is problematic in a report that stresses dynamic interrelationships and synthetic analysis. You, as the reader, may wish to integrate the periods.
"Such is South West Africa... Nature is not submissive there as in other lands where hedges are made of primrose and a dance of daffodils. Men cannot change the revolution of the earth or the wind’s direction. They cannot mould the shape of South West Africa to their will. Men and animals and all things living there must come to terms with Nature and, if they can, turn the terms to their account."

Alexander Steward (1963) *South West Africa: The Sacred Trust*  
Da Gama Publications: Johannesburg
“Halfway up the barren Namibian coast, where the icy Benguela current rushes up from the Antarctic and the giant golden sand dunes of the Namib Desert reach down to the sea, lies the port of Walvis Bay.” (Berat, 1990, 1) Lynn Berat’s poetic description reflects the unique nature of the Walvis Bay landscape. Constituted by the ephemeral Kuiseb River; the Namib sand sea south of the river and the gravel plains to the north; beaches and Atlantic coastline; and the shallow lagoon, these rich environments exist in dynamic relationships to one another, “the result of river, marine, wind and man-induced processes”. (Lagoon Plan, 1998, 7)

Situated at the most arid part of the hyper-arid Namib Desert, the climate of Walvis Bay is strongly moderated by the cold-water upwelling of the Benguela system (Seely and Ward, 1989). Though rain is largely absent, fog is a regular feature throughout the year. The wind regime is characterised by high-velocity, high-frequency south to south-westerly winds in summer and high-velocity, low-frequency east to north-easterly winds in winter.

**DESSERT**

The great age of the Namib Desert - believed to be five million years old - has not afforded the area any rest. Dunes are in a constant state of flux. According to Colonel Ralph Bagnold, the pioneer of dune dynamics, these “vast accumulations of sand weighing millions of tons move inexorably, in regular fashion, over the surface of the country, growing, retaining their shape, even breeding, in a manner which, by its grotesque imitation of life, is vaguely disturbing to an imaginative mind”. (Ward, 1989,8)

The dunes create the essential character of the Namib, an area 2 000km long, but at most 120km wide. These dunes are dynamic, their forms a result of the effects of the wind, the amount of sand available and their position in the dune sea, varying in colour, height, width, complexity and composition. The larger southern dunes, between the Orange and Kuiseb Rivers, are composed of grains of quartz. Dunes along the coast move from south to north, and then begin to change, moving inland from west to east.
The barchan and transverse dunes in the Walvis Bay area shift about ten metres each year, reflecting the high energy of the unidirectional southerly winds. The long axes of the transverse dunes lie perpendicular to these strong winds, their massive slipfaces orientated towards the north. South of Walvis Bay where the sand sea is at its widest, parallel linear dunes lie between transverse dunes of the coast and the multicyclic dunes of the inland sea. These dunes, about 100m high and spaced more than a kilometre apart, are conspicuous from satellite photographs. They result from the combined effects of two major wind directions.

Dunes provide an "unlikely habitat for a diverse community of specialised animals and plants not encountered elsewhere in the world," each uniquely adapted to life on particular parts of the dunes (Ward, 1989, 9). The base has its own characteristic fauna and flora, distinct from that living higher up on the same dune. Above the dune base is an area of more steeply sloping sand – up to about 14% from the horizontal – called the dune slope, which also supports its own characteristic life forms. But, "of particular importance to the endemic fauna (that is fauna which is found only in the Namib Desert) is that portion of the dune – representing less than 1% of the total dune surface area – called the slipface." (Seely, 1992,11) Here sand rests at about 32 –34% above the horizontal. This is where life on the dune is concentrated.

Animals and plants of the desert have devised unique adaptive strategies, surviving with little rain - less than 15mm per annum - and deriving maximum benefit from the high humidity generated by fog sweeping off the coast. Seeds can lie dormant for years, animals can aestivate by seeking shelter in the summer months. Smaller animals like lizards and beetles can retreat on a daily basis below the sand. Larger animals can migrate or seek shade. Most rely on fog and wind-blown detritus as a source of food.

*Trianthema hereroensis* is the common succulent found on the sand between Swakopmund and Walvis Bay. The plant absorbs fog water through its leaves. These plants grow on the dune sea south of the Kuiseb River only as far inland as the fog regularly penetrates. It is an important source of food and shelter for many dune animals. Its seeds are eaten by beetles, and when green, oryx and gerbils forage on the leaves.

Satellite image of the central Namib desert. The Swakop river divides the dune sea south of Walvis Bay from the gravel plains to the north.

(Downloaded from website: https://zulu.ssc.nasa.gov/mrsid/mrsid.pl)
The ability of the desert to sustain this rich bio-diversity should not distract from the fundamental fragility of this environment. The desert is easily disturbed. Ecologically it is a low energy system because of the lack of water. Perennial plants grow slowly while annual ones can only grow in the years with adequate rain. As a result it requires a longer period of time for the vegetation of the area to recover from disturbance than if the rainfall was higher.

North of the ephemeral Kuiseb River are gravel plains, clearly distinguishable from the desert sands in satellite photographs of the area. This area is flatter and presents a harder surface than the constantly shifting dunes to the south. These plains are characterised by sandy soils often associated with crystalline gypsum or salt deposits. These soils have a surface capping scattered with many cobbles and pebbles.

This delicate crust supports the small shrub Arthraerua leubnitzea, endemic to the Namib. The plant germinates with the occasional rain and is then supported by fog. There is also a diversity of fog-dependent lichens. If this crust is disturbed it may never recover, providing instead another place for erosion to begin when the rain eventually falls. In this area where the lichen crusts often constitute the dominant plant growth, any vehicle tracks seemingly last forever. Gray’s lark (Ammomanes grayi), is endemic to the gravel plains.

OCEAN

The infinite horizons and the grey waters of the ocean along the Walvis Bay coast disguise the dynamic movements of the Benguela current as it sweeps north-eastwards from the Antarctic. “After mingling briefly with the warmer, faster, Agulhas stream the Benguela is deflected by the land mass (of Africa) and flows sluggishly up the west coast. On its way north and before its swings westwards to complete its counter-clockwise circulation, the current is constantly harassed by strong offshore winds which shift the surface water and produce an upwelling from the cold depths.” (Lees, 1969, 1) These highly mobile currents continuously shift sand, simultaneously eroding and depositing sand along the Namibian coastline.

The currents of the Atlantic churn up the sediment of ages. These currents bring to the surface “phosphates and nitrates discharged by prehistoric rivers, nutrients from dead and decaying matter, trace elements and minerals... are all brought within the galvanising touch of the sun’s rays... Countless billions of minute marine organisms graze and predate in these fertile waters, forming the first link in a food chain that sustains rich sources of pelagic and demersal fish... Conditions are classic: enriched moving waters washing over the banks and reefs of a widely sloping continental shelf and disturbed by powerful winds which maintain an almost constant turbulence. Teeming shoals of pilchards, anchovy, maasbanker [horse mackerel], and mackerel gorge on the luxurious concentrations of phyto-and zooplankton, and, in their turn are ravaged by migratory predators like the tuna and the snoek.” (Lees, 1969, 1-2)

Every so often, largely unexplained sulphuric eruptions rise up from the deep, discolouring water in the bay and killing off large numbers of fish. These eruptions, together with human interventions, threaten the marine ecology.

BAY

The unique geological circumstances surrounding Walvis Bay, at the junction between desert, ocean and delta, have given rise firstly to the bay and then to the lagoon. In earlier times the Kuiseb River poured masses of transported sand and gravel into a widespread delta. This delta protected the coastal area of the present town of Walvis Bay from the northwards shifting wind-driven sand masses. “Thus, in both a wind and sea current shadow, both of which restricted deposition, the precursor to the current bay formed.” (Grunert, 2000, 110)
The bay has existed for at least 5,500 years but has undergone considerable change. (Seely, 1992, 38) Today Walvis Bay is the largest natural harbour, and the only sandy bottom harbour along the Namibian coast. Seawater inside the bay is sheltered from tidal action by a promontory jutting northwards from the Walvis Bay coastline.

This promontory, with Pelican Point at its northernmost tip, is the result of a constant process of aeolian shift, the transportation of sea sand. Subject to changes through wind and waves, the point grows northwards at a rate of 17m a year, while the opposite mainland coast grows southwards towards the point. But as the promontory stretches ever northwards, two simultaneous processes threaten the bay:

- If the promontory curves inland it will enclose the bay and turn it into a lagoon.
- If the promontory stretches too rapidly, tidal movements could erode its middle portion. This would cause a breach, allowing waves to enter the once sheltered bay. Pelican Point would then become an island, exposing the coastline to the relentless action of the waves.

A few salt- and sand-tolerant plants grow on the inland side of the peninsula. The point also accommodates a colony of seals, some jackals and the endemic Benguela dolphin within its waters.

LAGOON

The lagoon is estimated variously between 3,000 and 5,000 years old. Similar processes that have contributed to the formation of the bay, have created the Walvis Bay lagoon. “Sand masses driven continually onward by wind and ocean currents along the coast have closed three sides completely around a shallow water zone, which in former times was part of the open sea.” (Grunert, 2000, 111) Sediments from the sea-bed, wind-driven sand and the fluvial mud derived from sporadic flooding of the Kuiseb River constitute a rich mix at the bottom of the lagoon.

The Walvis Bay lagoon system is one of a series of several similar formations situated on the Namibian coast. From south to north these include Conception Bay, Sandwich Harbour, Walvis Bay and Cape Cross. Sand, drifting along the shore in a northerly direction, closed the harbour at Cape Cross during the last 400 years. Conception Bay and Sandwich Harbour were used by ocean-going vessels at the beginning of the twentieth century but can now only be accessed from the sea by very small boats.

The south-southwest to north-northeast orientation of the lagoon parallels that of wind direction.

Conditions within the lagoon are dynamic. Temperature and salinity differ in different parts of the lagoon at different times. Bay water fills the mouth, but within the lagoon, heating and evaporation produce extremes with temperatures of up to 30°C and salinity of 46 parts per 1,000 in the southern tip of the basin, compared to 35:1000 in the open sea. Sand conditions also vary: coarse and medium sand is found near the mouth, while finer sediments with substantial levels of clay and organic material are present in the central and southern reaches. The high proportion of phyto-plankton generated and imported into the lagoon in turn supports a large zoo-plankton population. Soft bottom - or benthic - fauna provides food for fish and bird populations. In earlier times coastal fish species including bottlenose dolphins were recorded entering the lagoon. Jackals and hyaenas patrolled the banks.

The lagoon attracts large numbers of birds. It is an important habitat for intra-African migrants - those birds which migrate seasonally within Africa, including: the Greater flamingo, Lesser flamingo, Black-necked grebe, Damara tern, Chestnut-banded plover and Avocet. The lagoon also accommodates a large number of palearctic migrants - birds that migrate seasonally between Africa and the northern hemisphere including the Ruddy turnstone, Curlew sandpiper, Little stint, and Sanderling. Birds found permanently in or near the lagoon include the Caspian tern, Swift tern, Black oystercatcher, White-fronted plover, Hartlaub’s gull and the Kelp gull.
The rich waters of the lagoon support large bird communities.

(Local Agenda 21)

In 1995, the lagoon was declared a Ramsar site under the “Convention on Wetlands of International Importance Especially as Waterfowl Habitat”. Namibia is a signatory to the Ramsar Convention and is therefore legally responsible to conserve its Ramsar sites. (Burger, Stubenrauch and Seely, 1996, 34)

DELTA

North of Walvis Bay is the Swakop River. Unlike the Kuiseb, immediately south of the town, the Swakop looks like a river and behaves like a river. Its large catchment area and a well-defined course in its lower reaches ensure that water in the Swakop consistently flows into the Atlantic. Because of this consistent flow of water, the Swakop River now holds the dunes on its southern bank, effectively arresting any further northward movement of dune sand.

The Kuiseb River behaves in a far more unpredictable fashion, however, reaching the sea infrequently - only 15 times in the last 160 years. This ephemeral river serves as a linear oasis passing through the central Namib flowing through the Namib Sand Sea to the south and the central plains to the north. The infrequent inundation of the Kuiseb Delta has allowed dunes to cross the Kuiseb and grow northwards. (Walvis Bay Local Agenda 21 Project Document, 88)

Although the Kuiseb flows into its delta at least once a decade (Billawer, 2002), no water is visible on the surface of the earth in the intervening years. Nevertheless, there are deep underground reserves in the Kuiseb Delta. A subterranean water supply in an underground aquifer supports the permanent growth of large trees like the camelthorn, Ana tree, wild ebony as well as invader species like the castor oil plant, thorn apple and mesquite. This vegetation in turn attracts people and animals.

Kuiseb River in flood.
(Phoo Krause)
Moreover, the reserves of underground water are not infinite. Dams upstream reduce the amount of water reaching the delta, and local extraction for Walvis Bay makes the delta sensitive to excessive use.

TOWN

Even though the Walvis Bay area has been inhabited for thousands of years, the development of a town started only with the arrival of European settlers intent on exploiting the resources of a vast hinterland for export to distant markets. This gave rise to a short-sighted view of urban development, wasteful land utilisation patterns, and the evolution of a town singularly unresponsive to its unique natural setting.

Although all towns are highly artificial, they soon come to function as unique environments and dynamic systems. They import resources from the surrounding hinterland, and export others, with effects that extend well beyond the municipal boundaries. Settlements leach resources – water, energy and raw materials – from the hinterland, while pumping noxious wastes and pollutants back into the countryside, out of sight of urban residents. When the town happens to be one like Walvis Bay, constructed in a fragile eco-system with few resources conducive to human habitation, the ecological footprint of the town is proportionately greater.

For the small population that Walvis Bay accommodates - estimated at about 41 000 people - the town occupies a disproportionate amount of land. Since the only resource amply available to colonial settlers was unoccupied land, the town was generously spaced, with broad streets and generous private gardens. The development of Kuisebmond in 1959 and Narraville in 1962, each buffered from the rest of the town by wide expanses of open land, compounded this land use pattern. Only now is there a realisation that such “sprawl” is wasteful of resources, requiring more roads, more maintenance, and longer water and sewer pipes.

Land is only one of the resources consumed by the town. Other inputs include:

- **Water:** For many years Walvis Bay imported “the world’s most expensive water” from distant Cape Town. Today it pumps water from the Kuiseb aquifer south of the town, a precarious resource that is steadily being drained by the demands of the town.

- **Energy:** The Walvis Bay municipality purchases electricity from the national energy utility Nampower. The town also has an oil-fired generator for emergencies. The oil must be imported from abroad, and its carbon monoxide fumes add to pollution.

- **Raw materials:** Few materials are available locally. Building materials and food are largely imported from South Africa. When new buildings go up, inert desert sand has to be transported to sites to replace the salty, waterlogged soil in the town.

Subsequently the town also generates outputs, including:

- **Waste:** The city’s solid waste is dumped at a five hectare landfill 1.5km from the town in the desert. Landfills cannot be used for
development and can be unsightly. At present wind-blown litter pollutes the surroundings.

- **Sewage:** The town’s most commendable environmental programme is its sewage and effluent recycling. The days when sewage was simply dumped in the sea are long over. Sewage is now purified, and the effluent either used for wetlands or for public municipal gardens.
- **Industrial effluent:** The fish processing plants continue to discharge impure water into the ocean.
- **Air pollution:** Walvis Bay’s most notorious feature is its nauseating smell. The fish processing plants discharge pollution into the atmosphere, and the residents of Kuisebmond, the former African township, are worst affected by the smell.
- **Human activities:** Boundless open spaces are ideal for certain kinds of human activities, such as joy-riding across dunes in 4x4s, or desert military manoeuvres. Both activities have done untold damage to vast areas of the desert surface.
CHAPTER 3
THE PRE-COLONIAL PERIOD
UP TO 1400
The dynamic environment surrounding Walvis Bay may indeed have inspired poetic description but would not, at first glance, have presented an attractive prospect for human settlement. Though sustaining unique fauna and flora, the earth offers little in the way of sustenance. Soils are of no value for irrigated agriculture. Fresh water is scarce. Rain is insufficient to sustain much, except naturally occurring vegetation.

However there is evidence that the Walvis Bay area has been settled since the early Stone Age by pastoralists and strandlopers. Early visitors to Walvis Bay named the inhabitants Topnaars. “The word seems to be a Dutch translation of the Nama name #Aonin, which means the ‘people living in a marginal area’. According to Nama mythology, the Topnaars claim to be offshoots of the Gai-Ikhau (or so-called Red Nation), the eldest brother of five - each of whom founded a Nama group. The #Aonin consist of the Hurinin (‘people of the sea’) and the !Naranin (‘people of the Nara fields’)” (Billawer, 2002, 14).

The Topnaars who have lived for centuries in the vicinity of Walvis Bay have devised unique survival strategies. Adopting a nomadic way of life, they moved in response to the scarcity of water as well as the cyclical flooding of the Kuiseb River. Light structures built mostly of poles covered with bark or bushes gave architectural expression to this mobility.

Using small amounts of water extracted from the oasis at Rooibank and from wells sunk into the riverbed, the Topnaars have successfully cultivated the leafless !nara, an edible melon, for many centuries. The economy of the Topnaar community was - and continues to be - highly dependent on these plants. When fresh, they are a rich source of moisture and vitamin C, but they can also be dried and exported further afield. The health of the !nara crop is a key indicator of water availability in the Kuiseb Delta. Large areas of !naras are now dying off in the areas where water is being extracted.

Fish and shellfish were also important to the subsistence of Topnaars. The coastline, with its continental shelf accommodating a vast array of marine species, offered some resources to humans intent on settlement.

The cold upswells of the Benguela current make the sea rich in zoo- and phyto-plankton, sustaining a rich diversity of marine life. Fish, in turn, sustain a large numbers of predators, animals that may have been hunted by the Topnaars. Humans could also exploit shellfish living in the lagoon, and there is indeed evidence that people living in the vicinity of Walvis Bay relied on these marine resources.

The energy regime in this period of history was limited to human muscle power, which, in turn, was limited by the scarcity of arable land and water. A subsistence economy was conditioned by harsh ecological factors and the available technology at the time. In addition “redistributive social forces such as lending and re-lending stock within families and clans, controls on land ownership, and environmental barriers to the accumulation of personal wealth tended to limit concentration of economic... power” (United Nations Institute for Namibia, 1988, 27). This meant that the first residents living in the vicinity of Walvis Bay trod softly upon the earth and a state of relative balance between humans and the environment prevailed.
“Passing through our veld I see an elephant, 
Approaching Hambil’s gardens, green with corn-ears, 
His coming bodes us evil: he will die 
In Hambil’s fields. Why must that happen? 

Mighty men are coming down our highways, 
Making for our land where they wish to dwell. 
Coming from the lordly kraals of Pampa, 
Where they once lived, but now I see them here. 
I cannot see the reason for their coming…”

(Sisaama’s prophecy, quoted in Vinnia Ndadi (1974) Breaking Contract, 
LSM Press: Richmond)
In 1484 Diogo Cão landed on the western coast of Africa where he erected a cross and probably found men of the Nama tribe living off the fish and seals at Cape Cross. A little further south, present-day Walvis Bay was soon marked on Portuguese maps as “Rostro da Pedra”, Ridge of Rock, and later rechristened “Bahia das Baleas”, the Bay of Whales. The Portuguese viewed the area as desolate and uninviting with little advantage other than safe harbouring for ships.

Initially European explorers expressed scant interest in the area because they could see little of value to exploit. Confining their activities to the coast, they engaged in limited barter with local inhabitants, seeking out ivory for export. The erection of crosses and the raising of flags gave symbolic effect to the tenuous claims of the Portuguese explorers.

The limited interest of the early explorers meant that the delicate balance between humans and the environment remained largely undisturbed. However increasing European interest in Walvis Bay raised the profile of this area amongst European powers - and paved the way for future exploitation of the area’s resources.
“Indeed, at the risk of incurring the reader’s contempt, I confess I can never quite get over the feeling that the wonderful products of nature are objects to be admired, rather than destroyed; and this, I am afraid, sometimes keeps me looking at a buck when I ought to be managing my hindsights.”

The arrival of European settlers at the Cape of Good Hope in 1652 would soon have repercussions for the entire region. Initially the Dutch government saw the Cape as an important victualling stopover on the way to the East Indies. This in turn increased the strategic importance of Walvis Bay. By 1670 the first recorded clash between local inhabitants and “an aggressively expanding European civilisation” occurred at the mouth of the Kuiseb River near Walvis Bay (United Nations Institute for Namibia, 1988, 43). Seven years later at the same spot, “the Namas clashed with the crew of an exploration ship from the Cape, and succeeded in driving away the landing party which wanted to barter for cattle”. (United Nations Institute for Namibia, 1988, 43)

In 1761 the governor at the Cape sanctioned an expedition by Hendrik Hop to investigate the land north of the Orange River and to report on the usefulness of the territory. It was at this moment that the perception of South West Africa as a “frontier” entered the lexicon of the colonial powers. Dorian Haarhoff in his book The Wild South-West: Frontier myths and metaphors in literature set in Namibia, 1761-1988 examines the significance of this idea. According to Haarhoff, “Images of ‘Wild-Westing’, hunting, discovering, pioneering, appropriating, settling, farming, trekking, civilising, subduing, and defending are the stock images of a pervading frontier myth, and are indicative of a particular way of seeing the South African-Namibian connection.” While colonialists have primarily seen their own role as a civilising one, Haarhoff offers another view: “Frontiersmen were often racist bigots, anti-intellectuals and tasteless vulgarians, profligate destroyers of precious natural resources.” (Putnam in Haarhoff, 1991, 10) This inevitably colours the interactions between colonists and the environment they have been sent to colonise, and is a theme which will dominate the history of Walvis Bay up until reintegration.

In 1793 Captain FR Duminy occupied so-called Walfish Bay in the name of Holland. But within two years British occupation of the Cape supplanted the Dutch. From 1795 the British government proved equally curious about Walvis Bay, and commissioned a number of tentative exploratory trips. Finally, in 1878, Britain was galvanised into action in response to the strategic importance of Walvis Bay; concern that the trekboers living in South West Africa might set up a hostile Boer Republic; and ongoing requests from missionaries and traders for British protection from the indigenous inhabitants. After much deliberation about whether to annex the whole of South West Africa or just its most important harbour, the British government decided on the latter.

In 1878 Staff Commander Dyer set sail on the HMS Industry with instructions to annex no more than Walvis Bay and its immediate surroundings. With its considerable trade, the bay was obviously the key to economic control of the entire region. After discussions with the local European inhabitants, Dyer fixed the boundaries as follows: “On the south by a line from a point on the coast fifteen miles south of Pelican Point to Scheppmansdorf; on the east by a line from Scheppmansdorf to the Rooibank, including the plateau, and thence to ten miles inland from the mouth of the Swakop River; on the north by the last ten miles of the course of the said Swakop River and on the west by the Atlantic Ocean.” (Berat, 1990, 37) Significantly, the precise boundaries for European control did not make clear whether the oasis at Rooibank was included to ensure a supply of water.
Much like their Portuguese and Dutch predecessors, British control over Walvis Bay was somewhat tenuous. Commander Dyer was instructed to do little more than leave “the flag with some respectable resident”. (Wilken, 1978, 4)

The scramble for Africa intensified European interest in the area, particularly that of newly unified Germany intent on establishing a colonial foothold. In 1884 the British proclaimed Walvis Bay as part of the Cape Colony to arrest German ambitions in the area. German trade was then diverted north of the annexed territory to German-controlled Swakopmund. At the time a few missionaries and traders had settled near the bay. Writing in 1915, William Macdonald portrayed colonial policy as a “record of indifference and neglect. No money must be spent. Nothing must be done. Consequently, we find that everything is second-hand; a worn out lighthouse from Port Elizabeth, a wheezy tug from Cape Town. Everything is old, dilapidated and falling to pieces.” (Macdonald, 1915, 54)

Until 1915 Walvis Bay existed as a minute British enclave, surrounded by German territory, with limited linkages to the interior. But in 1914, at the onset of the First World War, South African troops seized South West Africa, defeated the Germans and imposed military rule. In 1920, after the defeat of Germany in the First World War, the League of Nations granted South Africa, a British colony at the time, a mandate over what was to come known as the South West African Protectorate. This had the effect of integrating Walvis Bay into the rest of South West Africa. The development of new linkages - road and rail - between the port and the rest of the protectorate entrenched South African control over the country and spurred development in the town. South African laws were extended to the protectorate, including South Africa’s segregationist “Native Policies” and the migrant labour system. These laws were enforced by a mediocre civil service mostly sensitive to the needs of the Boer population in the territory. It was no small irony that South Africa was explicitly charged through its mandate “to promote to the utmost the material and moral well being and
the social progress of the inhabitants of the territory” (United Nations Institute for Namibia, 1988, 25)

When South Africa imposed its controversial “Native Policies” in South West Africa, it met little resistance from the settlers because a legacy of racism already dated back to the previous century. James Alexander, a scientific explorer who visited Walvis Bay in 1837, commented that the “bay people... make out the year without cultivation of any sort, not even melons or tobacco, of which last they are extraordinary fond”. (Quoted in Wilken, 1978, 24) Francis Galton, a cousin of Charles Darwin and an ethnographer who had explored South West Africa in the middle of the nineteenth century, said the indigenous residents of Walvis Bay “behaved like baboons”. (Haarhoff, 1991, 39) Thus when South Africa’s “Native Policy” was gradually introduced to the area, it found an audience already attuned to racist practices.

**OCEAN**

When Thomas Baines visited Walvis Bay in 1861 he noted that “A large quantity of fish were drying on a framework of poles, and their huge heads were lying in heaps upon the beach”. (Baines, 1864, 3) Baines also recorded Namaqua Hottentots using seine nets to catch “small fish the shape and size of a herring, some sharks, sting-rays, cat and dog-fish, and several broad-finned flat bellied sharks...” (Baines, 1864, 10)

This must have alerted the Cape government to the richness of fishing grounds but this resource could not be effectively exploited. In 1876 William Coates Palgrave noted that “the absence of a suitable drying ground is, I believe, the existing obstacle to the success of such an industry. Fisheries have been established there from time to time, but so much sand was accumulated by the fish in the process of drying that it got a bad name in the market and ceased to be worth the cost of curing.” (Lees, 1969, 14)

In 1885 a German fishing association planned an investigation, but the demand for fish was so small that the investigation was called off.

Neglected by man, the fish were left to seals and birds. This contrasted sharply with the fisheries in the North Atlantic and Iceland where a productive fishing industry was established at this time. (Kurlansky, 1997)

But there were other marine resources off the coast of Walvis Bay and soon whaling counted as a significant economic activity. In 1795 British authorities were already concerned that between 20 and 30 American whaling ships were in Walvis Bay every season. (Kinahan, 1992, 31)

Practised in Europe from the seventeenth century, whaling intensified during the period of Europe’s industrial revolution because of a need for whale by-products: sperm oil useful in lubricating machinery, baleen used in corsets, umbrellas, and stays. The hydrogenating process invented in 1903 meant that whale oil could be made into margarine, soap, and most significantly, glycerine, which was needed for nitro-glycerine that is used in dynamite. A technological advance that tipped the balance in favour of man
was the explosive grenade now used in harpoons. It is sadly ironic that glycerine - a by-product of whale oil - was used to propel the grenades that made whale hunting so much more efficient.

Americans dominated whale hunting between 1820 and 1860, initially in the North Atlantic. The First World War quickened the market for glycerine (McNeill, 2000) and the hunt was soon extended to the Southern Ocean - waters south of latitude 60°S - the richest whaling grounds in the world.

A whale landed at Walvis Bay dwarfs the buildings in the harbour. (Wilken, 1978, 68)

In 1914 there were two locally based whaling companies in Walvis Bay: the Walfish Bay Whaling Company, Ltd of Glasgow, and the Durban Whaling Company of Durban. By 1915, William Macdonald had already noted the impending demise of the Walvis Bay whale population: “It should be mentioned that the whales are becoming rarer every year, or, at least, are being driven further out to sea.” (Macdonald, 1915, 52) A huge harvest averaging 350 whales per year was processed in Walvis Bay up to 1930.

When the Swedish explorer, Charles John Andersson, travelled to Walvis Bay in 1850 he found “a very spacious, commodious and comparatively safe harbour”. (Lees, 1969, 13) Initially a limited number of goods that could be bartered with local inhabitants were transported from the bay.
Colonial expansion increased trade significantly; however, exports of meat to St Helena, and the supply of livestock for the ships harvesting guano off the coast near Angra Pequena - present day Iboi - increased shipping significantly. The harbour received a further boost when the Matchless Mine further up the Kuiseb Valley started sending copper to the Cape Province from 1855.

The bay was not only a fresh products supply station, but also a "harbour through which arms or goods entered or left the region." (Billauer, 2002, 14) Control over the Baaiweg ("bay road") which had been constructed by Jonker Afrikaner, leader of the local inhabitants, to facilitate trade with the interior, was of great importance to the German colonisers as well as to the British who wanted to maintain their presence in the territory.

When the Germans started developing a harbour in Swakopmund in 1892, Britain's control over the country's imports and exports was threatened. "Realising that Walvis Bay would lose much of the overseas and interior trade if Swakopmund superseded it as a harbour, the Cape government decided in 1898 to improve the harbour facilities." (Wilken, 1978, 28) A wooden wharf equipped with a single crane was constructed and a railroad track to link the wharf with the settlement was built.

From 1795 onwards, British ships sailing in the vicinity of South West Africa were instructed by the Royal Navy to map conditions along the coast. Records from these ships reveal that in 1795, the bay at Walvis was formed by little more than a sandy spit that disappeared at high tide. (Kinahan, 1992) But a series of ship logs over the next century documented the relentless northerly growth of Pelican Point. In 1878, Navigating Lieutenant Bower of the HMS Diana produced a map and placed a beacon at the tip of Pelican Point, establishing a baseline that later cartographers would use for comparative purposes. Later that same year the HMS Mallard found the beacon between 300 and 400 yards inland. Ships similarly recorded an increasing build-up of sand on the ocean bed.

One morning in 1900, a mud island appeared inexplicably off the peninsula, alerting residents to the shifting sands along Pelican Point, only to disappear six days later. At the time this was considered a mere curiosity. The simultaneous growth and erosion of Pelican Point was not yet seen as a threat to the bay.

**LAGOON**

Further inland, the lagoon with its abundant fish and unusual birds presented the colonial explorers with a fascinating tableau. Significantly deeper than it is at present, the lagoon in 1850 seemed "with various kinds of fish; and at low water, many that have lingered behind are left sprawling helplessly in the mud. At such times the natives are frequently seen approaching, and with a Gemsbok's horn affixed to a slender stick, they transfix their finny prey at leisure." (Charles John Andersson, quoted in Lees, 1969, 14). In 1861, when Thomas Baines visited Walvisch Bay he recorded a "broad flat, covered with cat, dog, and other mud-frequenting fish, which, venturing too far with the last spring-tide, had been left at a distance from their element and were now adding each his mite to the 'ancient and fish-like smell' that pervades the whole place... Here the dense flocks of pelicans and flamingoes present an appearance that actually led the mate of the vessel to mistake them at first sight for houses: and considering that the last named bird, with its white plumage and scarlet wings, stands about four feet in height, I do not wonder at the current stories of their being mistaken for a column of infantry with red jackets and white caps and trousers." (Baines, 1864, 4)

**TOWN**

Urban development in Walvis Bay can be dated from 1844 when the first white settlers established relatively permanent buildings in the vicinity of the lagoon. The few isolated buildings were little more than wooden shacks. And even after three decades, the town inspired little praise: In 1876, when W Coates Palgrave was sent by the Cape government to report on the area,
he wrote that, “a more dreary scene than the coast about Walvis Bay can scarcely be imagined”. (Lees, 1969, 14)
By the 1880s a grid street pattern had been laid out, and the first five parcels of land sold off, one purchased by the Rhenish Mission Society to accommodate a prefabricated timber church exported from Hamburg, Germany. (Billawer, 2002, 24) By the turn of the century, a magistrate’s court, magistrate’s residence, customs office and other residential buildings constituted the town.

In 1915 when journalist William Macdonald arrived in Walvis Bay after a long trek across the Kalahari he prepared himself for disappointment: “Before me stretches a tranquil, sunlit sea, a pier, and some fishing smacks. Behind me are the buildings of the settlement. Of course, I must expect too much.” (Macdonald, 1915, 39) Macdonald ascribed the arrested development of Walvis Bay to the fact that the “whole territory is made up of Crown lands ... No one can buy or sell land. There is no freehold or leasehold or any sort of security of tenure.” For Macdonald Walvis Bay was the “City of What-Might-Have-Been”. (Macdonald, 1915, 52-53)

These sentiments accord with Haarhoff’s analysis: the metaphor of the frontier has meant that many writers in their descriptions of the terrain stressed its “unreality as an outer edge, unattractive and strange under a savage sun”. (Haarhoff, 1991, 44)

While urban development was undoubtedly constrained by the provisional attitude of a distant government, a more pragmatic problem prevented further growth: a severe shortage of water - for drinking, washing, carrying off of waste, and the powering of mills and machines.

During the nineteenth century residents collected water in barrels from Sandfontein 5km away, but this could only be used for washing because it was so brackish. Fresh water was shipped weekly from Cape Town in barrels, and, as a result, was extremely expensive. In 1899 the Cape Colony sent equipment to Walvis Bay to desalinate seawater by
condensation. According to Macdonald, “It distils the sea-water, which is then sold to residents and others at £1 1s per ton (200 gallons). Masters of vessels say this water is the most expensive in the world. This pumping plant is a comedy.” (Macdonald, 1915, 53) Macdonald recommended “dipping down” to extract the then plentiful ground water below the Kuiseb Delta.

Significantly the water issue was the main cause behind a dispute regarding the enclave’s boundaries, when Germany in 1884 claimed the natural oasis at Rooibank as part of their territory. The British disputed this claim, invoking the original instructions given to Colonel Dyer. The pivotal significance of the boundary was well known: The party in whose territory the water supply fell would control the port, and therefore the whole country. This dispute was to rage on through three Anglo-German commissions until it was finally resolved in 1911, and the Rooibank oasis was included in the Walvis Bay enclave. (Wilken, 1978, Kinahan, 1992 and Billawer, 2002)

Until the early nineteenth century, South West Africa and Walvis Bay remained largely unaffected by the world-wide expansion of European commerce and empire building in the seventeenth and eighteenth centuries. But when the area finally fell victim to colonisation, the country soon became a source of raw materials and markets. This meant that the exploitation of the natural environment and development of Walvis Bay was largely intended to fulfil the demands of distant markets, rather than the needs of the local inhabitants. Thus Walvis Bay, like many colonial cities, soon acquired the infrastructure - ports, warehouses, railroads and roads - to meet the requirements of an export economy.
“Mr H. Noren Assistant Engineer, Harbours... requested His Excellency to cut the tape and thereby signify that the new harbour was officially open... At about 2 o’clock the remaining guests left by special train for Swakopmund, and so ended the official programme of a ceremony which everybody concerned in the welfare of the country trusts will mark the inauguration of a highly prosperous era for the whole of the South-West Protectorate.”

In 1921, two years after South Africa had been granted a mandate over South West Africa, the military regime governing the country was replaced by a civilian administrator. With control over both Walvis Bay and the remainder of South West Africa, there was no longer any need to administer Walvis Bay as a separate entity. Act 24 of 1922 prescribed “that the port and settlement of Walvis Bay would be administered as if it were part of the mandated territory of South West Africa and as if its inhabitants were inhabitants of the mandated territory”. (Wilken, 1978, 20) As a result, “the reunification with rest of Namibia ended three decades of disruption caused by imperial and colonial competition to control the territory”. (Moorsom, 1984, 14)

This inspired a significant spurt of investment in the port and in the town, but obviously not enough to gain the affections of its residents. In 1920, the mayor, Major Thomas, echoed the sentiments of earlier visitors, stating that “Walvis Bay is not at all a suitable place for a residential site and there is little doubt that as the port develops there, persons connected with it will make their homes in Swakopmund”. (Lees, 1965, 174)

**TOWN**

Informality, pragmatism, and makeshift arrangements characterise frontier outposts. But the sense of stability afforded by the integration of Walvis Bay into South West Africa brought a new sense of order to the town. In 1922 a Health Committee was set up to take charge of water supply, local business licences, hygiene issues and the control of “native locations”.

Geographers Hungiree Wilson Billawer and Muriel Same Ekobo describe the intense pace of urban development during the 1920s: “The Railway and Harbour Administration took over the land from the current harbour zone up to approximately the current central business district. The residential plots close to the lagoon and the harbour area were registered in the official General Plan of 1924 were gradually bought up. The Cottage Hospital, Walvis Bay’s first medical centre, was built in 1928. The first municipal offices and police station were constructed during the same period.” (Billawer, 2002, 24)
In 1922 a new rail connection to Swakopmund, which was already linked to the interior, was built. This connection ensured the efficient transportation of minerals, karakul pelts, cattle, and livestock from the interior, and then via the bay to various export markets. Between 1923 and 1926 port facilities were extended, the harbour was dredged to accommodate larger ships and a new quay was opened. This allowed large steamers to moor alongside the wharf, instead of anchoring in the open, two miles out. (Wilken, 1978, 36)

The South African Railways and Harbour Administration also set up a new water extraction plant in Rooibank in 1923 to supply the harbour with fresh water and to meet the irrigation, industrial and municipal needs of the town. In 1932, electricity, which was only supplied to the harbour and hospital by a local cold storage company, was extended to the main town with the installation of two new generators (Billawer, 2002). But improvements in urban infrastructure did not extend to sewerage: this was discharged into the ocean in the belief that the ocean is large enough to withstand anything.

In 1931 the town acquired municipal status and a town council was established. The name Walvis Bay, meaning Whale Bay, was gazetted in South Africa’s two official languages, English and Afrikaans: Walvis Bay and Walvisbaai respectively. (Billawer, 2002, 16)

“Like many colonial towns, Walvis Bay was racially segregated. The formal settlement area was reserved for whites, the original area or ‘Old Location’ … was demarcated for coloured and black residents.” (Billawer, 2002, 24)

**OCEAN**

Just as the town was acknowledging its history as a whaling station by formalising the name “Walvis Bay”, whales started disappearing from the area. Yet another technological advance tipped the scales even further in favour of humans: factory ships designed to render a whale into oil and bone meal in less than an hour. The “first seagoing slaughterhouse” sailed in 1925. (McNeill, 2000, 239) Initially the Norwegian Antarctic fleet operated a shore-based factory from the port. Then, with the introduction of factory ships, they used Walvis Bay as a winter base. The young Sam Nujoma found employment at the Norwegian whaling station as late as 1947 (Nujoma, 2001, 31). But soon thereafter the whole operation was transferred to Cape Town, ending whaling at the Bay.

In the meantime a small local handline fishing industry focused on snoek. Skilled fishermen worked off open decked boats, storing the snoek on board in salt-filled troughs. Several times a month coasters arrived from Cape Town to take transfer of the catches. At the time only one company operated from Walvis Bay, and exported most of the catch to Mauritius.

In 1932, entrepreneur Adolf Winter established a new business in Walvis Bay, inspired by the rush to harvest guano from Ichabo Island off Angra Pequena in the 1840s and 1850s. Rich in phosphates, guano was a highly desirable agricultural fertiliser and many guano hunters made their fortunes
from the sale of this “white gold”. In the 1840s and 1850s greedy guano merchants took “less than 18 months to strip the centuries old guano deposits, which in some places, lay as thick as 15 metres.” (Tarr, 1997, 110)

Almost a century later Winter noticed Cape cormorants nesting on Bird Rock, a shallow island between Walvis Bay and Swakopmund. However most of the guano deposited by the cormorants was periodically washed away. He then decided to build a roost off the Walvis coast, “a platform on which the birds could build their nests, and where the guano would accumulate in time. Winter’s peers considered him crazy and finding investors was difficult.” (Vogt, 2002, 21) But Winter’s idea paid off, as the platforms provided ideal breeding sites and roosts for the birds who seek places that are inaccessible to predators like jackals and hyenas. These platforms also made it easier for humans to harvest the guano. Guano taken off the platform was cleaner than that scraped off rock - and therefore fetched a higher price.

Unlike his predecessors at Ichabo Island, Winter harnessed human innovation and an understanding of the need to work with nature to develop a successful business based on the sustainable exploitation of Walvis Bay’s marine resources.

DELTA

In 1934, dramatic floods (the so-called “hundred-year rains”) surged down the Kuiseb Delta to reach the sea “and the town was inundated for several months. Fortunately most houses were built on stilts, a precautionary measure taken to prevent the accumulation of sand and flood water from entering the house.” (Wilken, 1978, 119) For five months the only way to get around the town was by raft. Mosquitoes and snakes, which had been washed down the river, became a constant problem, and “an inquisitive shark made regular house-to-house calls”. (Wilken, 1978, 119) Residents of Walvis Bay must surely have been reminded of their tenuous position in this inhospitable landscape.
CHAPTER 7
INDUSTRIAL EXPANSION
1940s - 1960s
Economic integration of world markets, industrialisation, and Fordism - the kind of mass production made famous by automobile manufacturer Henry Ford - provided the impetus for world economic growth after 1945, when international trade resumed after the Second World War. But this new type of development affected different parts of the world in different ways. The growing manufacturing sector in Western Europe and North America fuelled employment, spurred mass consumption, exploited vast amounts of energy and resulted in rising levels of air pollution.

But the effects of this industrial boom on the colonies were very different. Many of the significant advantages of the boom in the colonies - increased employment, and rising gross domestic product - had to be weighed against intensified and often unsustainable extraction of raw materials, the mainstay of many colonial economies.

According to McNeill, “economic integration often commodified nature suddenly. When groups of consumers, through the magic of markets, were presented with the opportunity to buy something hitherto unavailable, they often did so. If that thing was elephant ivory, rhinoceros horn, giant panda skin, alligator hide, ostrich feathers, beaver fur, tortoise shell, whale oil, teak, or the like, then the link-up between consumer and source of supply changed ecology in the zone of supply, often drastically. This was because supply was governed by rhythms of reproduction, not subject to rapid acceleration. Rhinos will not procreate on demand ...” (McNeill, 2000, 320)

Demand was all too often focussed on zones where supply was limited and where social restraints on rapacity were limited. This resulted in the rapid exhaustion of commodities and the dramatic transformation of ecologies. It also disrupted the common property regimes of traditional societies that kept environmental change from getting completely out of hand. These traditional rules of access allowed many to use the resource but no one to deplete it. But globalisation swept many of these small-scale social systems aside. In fishing, for example, large operators serving distant markets brought in trawlers, overwhelming artisanal fishermen. As the rules fell away, free-for-alls ensued, and the fisheries collapsed too.

Political insecurity compounded the problem: “Wherever landowners, herders, fishermen, hunters, or miners feared that access to the resources that underwrote their livings (or their fortunes) might be lost tomorrow, they had every incentive to get as much as possible out today. Such fears while commonplace throughout history may well have grown with the rapid ebbs and flows of colonial empires.” (McNeill, 2000, 320-22)

McNeill may well have been thinking about Walvis Bay’s fishing industry, and the peculiar relationship between South West Africa and its South African masters when writing these words. Industrial expansion in South Africa, coupled with huge increases in employment, created a market for cheap, ready-prepared protein in the form of tinned pilchards.
This in turn spurred production in South Africa’s colonial outpost - Walvis Bay. Moreover, South African businessmen had little interest in conserving a resource belonging to a country to which they had no particular loyalty... but this is to leap ahead of the narrative.

After the war, an explosive combination between industrial production and colonial status characterised both Walvis Bay and South West Africa. Politically, South Africa continued to entrench its control over the area. Strategic investments in infrastructure reinforced the linkages between the two countries and South African legislation was extended to the territory. In 1946, South African Prime Minister Jan Smuts placed a request before the United Nations to incorporate South West Africa into South Africa “so that the Devil himself will not uncouple them”. (Haarhoff, 1991, 170)

In 1964, the Odendaal Report proposed a Bantustan model for South West Africa, similar to that operating in South Africa. This assigned separate “homelands” to the various ethnic groups. These homelands would function, in effect, as labour reserves, with the contract labour system ensuring a steady flow of workers in accordance with the needs of the employers. The Suidwester newspaper in Windhoek, called the plan “the most cogent blueprint for developmental aid and progress the world has seen in this decade”. But, as Haarhoff points out, “The newspaper presumably inhabited a relatively small world”. (Haarhoff, 1991, 171)

These developments formed the background for the rise of organisations like the Ovambo Peoples’ Organisation (OPO) - precursor to the South West African Peoples’ Organisation (SWAPO) - which mobilised South West Africa’s African population to resist South Africa’s plans. In 1959 an uprising took place in the old Windhoek Location when residents were threatened with forced removal to the new, tribally segregated Katatura Township, resulting in the death of 11 people. Sam Nujoma, president of OPO, was forced into exile in the same year. In 1967, another SWAPO leader, Herman Toivo ja Toivo, was tried in Pretoria and sentenced to imprisonment on Robben Island.

As the scale of resistance increased, the United Nations in 1966 declared South Africa’s occupation of South West Africa illegal. In the late 1960s two new words, not entirely unconnected, entered the lexicon of those concerned with South West Africa: the United Nations agreed that “Namibia” should become the name of the disputed territory, and the word “terrorist” was popularised by the South African authorities.
After the war, farming and mining expanded rapidly and the volume of imports and exports passing through the port at Walvis Bay increased dramatically. The major import was oil to fuel industrial expansion; the major export was mineral ores. These factors, combined with the boom in the fishing industry (documented below), made improvements to the harbour essential. “In the late 1940s the harbour was equipped to handle only a small-general trade. Its facilities were limited to three berths along a wharf, six cranes, a couple of oil tanks, a cargo shed, a cold store and oil platforms.” (Moorsom, 1984, 26) But in the 1950s, “Prosperity was in the air at Walvis Bay and South West Africa’s economy was stronger than ever before. Imports poured through the Walvis gateway, American companies opened new copper mines at Tsumeb and exports of ores, karakul and diamonds increased rapidly. In 1946 and 1947 there was even talk of a rail link from Bulawayo to Walvis Bay, but Rhodesian traffic would have added to the congestion of Walvis Bay because the South African Railways and Harbours had failed to keep up with the growth in trade.” (Lees, 1969, 169)

Improvements to the harbour in the 1950s included a storage shed and conveyor belt for ore from Tsumeb and fish-oil tanks to service the growing fishing industry. This was only the beginning. The 1960s saw South Africa investing R65 million in developing railways, harbours, roads and telecommunications in South West Africa (Steward, 1963, 28). Regular air flights between South Africa and South West Africa were another feature of intensifying links between the two countries.

For Walvis Bay, this meant further investment in the port. By 1965 the harbour had eight standard berths, one tanker berth, 33 electric cranes and a depth channel of 11m. The length of the quay was also extended by 1,400 metres. But when the South African Railways and Harbours Administration reclaimed land around the port, residents of town lost their beach and easy access to the ocean. Indeed, when high-rise buildings started to appear on the skylines of most other towns and cities, the tallest structures in Walvis Bay were the new cranes.

Sailors coming off the ships in the harbour contributed a cosmopolitan atmosphere to an otherwise dull and provincial settlement. Sam Nujoma was fascinated by the South African, British, Norwegian and other European soldiers who were still stationed at Walvis Bay in 1947. (Nujoma, 2001, 33) In 1959, Vinina Ndadi, an OPO organiser working in a Walvis Bay fish factory, stowed away on an American ship in the hope of reaching New York to report to the United Nations about the forced removal from Windhoek Location and the ensuing massacre. (Ndadi, 1974)
Walvis Bay had long been recognised as one of the world’s richest fishing grounds, but fishing was not a significant economic activity until the post-war period. The fishing industry geared up slowly in 1943 when the Walvis Bay Canning Company Ltd. was established to produce salted and canned snoek. Soon afterwards the South West African Cold Storage and Stock Farmers started to can, smoke, and freeze white fish for export.

According to Mark Kurlansky’s Cod: A biography of the fish that changed the world, the most important development in fishing after the Second World War “was that... three innovations - high-powered ships, dragging nets, and freezing fish - had come together in the factory ship”. (1997,139)

Earlier technologies caught fewer fish and relied on smaller ships which needed to return to shore regularly to land their catch, supporting the economies of seaside towns. Freezer ships reduced dependence on fishing towns with negative effects on the economy of those towns, and the fishing industry ceased to be a major employer. This had negative effects on both fish and local fishermen, but transformed the fishing industry in the North Atlantic. Americans who had always preferred meat soon developed a taste for fish, and easy-to-prepare fish fingers and fish cakes.

Fishing in the South Atlantic, particularly in Walvis Bay, followed a different growth trajectory, with the emphasis on canning rather than freezing. Here shore-based factories would soon provide thousands of jobs, boosting the economy of the town.

Before the fishing boom in 1946 “Walvis Bay had a European population of about 600... [with] a small Norwegian community clustered around the whaling station... Lying a few feet below sea level its drabness was relieved only by the brilliant colour of the flamingos in the lagoon. Wind gusted through the dusty streets. It seemed that the town might disappear beneath the sands of the desert.” (Lees, 1969, 166)

But all this was to change dramatically within the next few years. Robin Lees, writing in 1969 in the heyday of the fishing boom, portrays the wild excitement of the time in an aptly titled chapter “Whirlwind at Walvis Bay”.

According to Lees, the boom can be traced to the Ovenstone group, a South African company involved in lobsters. In 1947 the Ovenstones set up the Walvis Bay Canning Company (Walcanco) and “began experimenting with pilchards instead. Snoek fishermen brought in small [pilchard] catches, which were canned in half pound tins and a rusty old plant which had been used for meat meal was resurrected and used to process pilchards and pilchard offal.” (Lees, 1969, 167)

The catch-rate soon outstripped the capacity of this crude plant, the jetty had to be enlarged and complete reconstruction of the factory was undertaken. In 1948, Jeff Ovenstone persuaded his father to order a modern fish reduction plant from the United States. A 15-tons-an-hour fishmeal plant was installed “and there was no restrictions on the amount of fish that could be fed into it. Boats were brought to Walvis Bay, but the difficulty was to find the fishermen to man them. Apart from one or two, Walvis Bay’s only fishermen were nomadic snoek fishers who came in November, stayed until February and then followed the snoek southwards. They had little experience of shoal fishing, but a few were persuaded to stay and try their luck with pilchards...” (Lees, 1969, 168)

“The impetus and capital for industrial development came from the Cape with its skilled fishermen and its knowledge of the shoal fishery. But among the fishermen and the fishing company staffs there were still doubters who scorned the pilchards at Walvis Bay...”

Towards the end of 1948, there were two more companies and a third factory set up to exploit tuna, soon turned towards pilchards. In 1949 the South West African Administration made some attempts at regulating the industry. But most fishing companies, committed to large investments and
eager for profits, regarded the 1949 ordinance, which sought to licence all boats, as unnecessary and restrictive government interference. In the first few years, anybody with a licensed boat could catch fish and there were no restrictions on the tonnages landed.

“By 1952, eleven industrial sites stretching along the beach from the harbour had been allocated to the fishing industry - and the fourth major factory was in the course of erection…” (Lees, 1969, 171)

“In five years six factories had risen, one after the other, along the shores of Walvis Bay. The pilchard catch had soared from 1,200 short tons in 1948 to 289,000 tons in 1953. In that year, a total of 85,000 short tons of canned fish, fishmeal and fish-oil was shipped to world-wide markets and, of S.W.A.’s exports, fish products ranked second only to minerals. A fleet of 80 boats was now fishing this suddenly-coveted sea…” (Lees, 1969,173)

“Thesilverharvestso richlygatheredat WalvisBay.”
(NamibiaScientificSocietyArchive3642/42)

Fish factories in full production.
(Photo Krause)

“There was a stampede for Walvis Bay. It was no longer necessary to persuade South African fishermen to sail for South West or to remain at Walvis and, as the news spread, fishermen arrived from Norway, from Denmark and from the English herring industry… Fishermen were followed by other men drawn by the promise of easy fortunes. Clerks packed up their jobs to take the slow train from Windhoek to Walvis Bay… Farmers left their land, butchers sold their businesses to buy fishing boats; defrocked priests and disbarred lawyers came to find a place among their crews, and with the fishermen and the adventurers, there came factory staffs and factory labour… It was an onslaught for which Walvis Bay was entirely unprepared… Walvis Bay could easily have been mistaken for a ‘Wild West’ town in the throes of a gold rush…” (Lees, 1969,173-174)
Ironically both the growth of the industry and the attempt to curb it were inspired by the collapse of the Californian fish industry, immortalised by John Steinbeck in his novel Cannery Row. On the one hand, industrialists bought second hand plant from the shut-up factories in Monterey. On the other hand officials imposed a total catch quota of 250,000 tons - not on the basis of any scientific assessment, but "because the government was haunted by the dreadful example of the Californian fishery, and was determined to safeguard the Walvis fishery before it was too late". (Lees, 1969, 177) The Californian fishery had taken 750,000 tons from an area of sea three times the size of that off the South West African coast. The Walvis Bay ceiling was therefore set at one third the Californian catch. But factories were given time to adjust to new quotas. Catches remained at 250,000 until 1960 and no factory ever failed to fill its quota. Further restrictions were imposed in 1954. "The wild, wonderful boom days had ended, and the fishing industry got down to serious business. Less fish was now taken by fewer boats, and the right to a fishing 'site' became an extremely valuable privilege." (Lees, 1969, 178)

A promotional pamphlet advertising Walvis Bay issued in 1952 to coincide with the tricentenary celebrations of Jan van Riebeeck's arrival at the Cape of Good Hope (an event with historical relevance only in South Africa) described the "silver wealth of the sea at its very door"; spectacular "progress during the last five years"; and the fishing industry's "important effect on subsidiary activities: Last year over 2,000 tons of salt from the pans at Swakopmund and Cape Cross was utilised for curing purposes..." (Burke, 1952)

Within seven years - 1947 to 1954 - there were six large fish factories. These and other associated industries were controlled by "a tightly knit group of South African companies sheltering behind the 19km (12 mile) fishing limit." (Moorsom, 1984, 28) The large-scale production of canned pilchards, fish-meal and oil peaked in the 1960s, dominating the economy of Walvis Bay. By 1967, South Africa and South West Africa were placed sixth in the world's greatest fishing nations. For company directors and South African shareholders things could not have been better.

But the view from the factory floor sheds another light on the Walvis Bay fishing industry. Vinnia Ndadi, an "A grade" contract labourer recruited by the South West Africa Native Labour Association (SWANLA), started work in the cannery at the Ocean Fishing Company in January 1958, "operating the machines which sealed fish into tins."

"They were mostly automatic but I had to tend them continuously. The fish just kept coming all the time. Outside, big pipes connect the fishing boats with the factory. They fill up the hole with water, then pump out the fish into the cannery. Inside the fish are carried along on conveyor belts past the workers and through the machines."

"We started in the morning as soon as the first boats came in. Some boats went out at 5p.m., others later. The first ones usually returned at around 2 a.m. The watchman then came to wake us up shouting, 'Cannery cannery cannery cannery cannery!' which meant, 'The boats are in, get to work!' We quickly dressed and ran the fifty yards to the factory. Then we worked until the fish were finished."
If, say, five boats came back full we'd work from two in the morning until five the next evening. Sometimes even till 9 p.m. - and without a single break! You couldn't stop or 'the fish would get stale.' So the machines were going continuously, belts full and moving all the time. Many men got swollen legs and feet from standing so long. Eighteen hours! It's just too much for a human being. Sometimes a man's feet were so swollen he could no longer pull on his boots.

"I was getting one pound five a week. Good pay - but there was no such thing as a weekend. We worked seven days a week throughout the fishing season. We got overtime for anything more than 13 hours a day, but it amounted to only sixpence an hour. If I worked from two until eight at night - five hours extra - I'd get just two and six more. It was on the contract.

"To make things worse, the manager didn't give a damn about working conditions in the factory or workers' health. I mean about our swollen legs and packers' hands, bleeding and swollen from splinters in their fingers and under their nails. There were no medical services; you were taken to hospital in town only if seriously injured and even then, you had to return to work the same day if possible. If your feet got so swollen you couldn't put on your water boots, you were simply given a bigger pair!" (Ndadi, 1974, 53-55)

An awareness of these working conditions, and run-ins with racist supervisors contributed to Ndadi's growing political consciousness. He soon assumed a leadership role and organised resistance in the factory: "Something's got to be done,' I kept thinking. Then one day I called a meeting in the compound. I'd never done anything like it before, but felt strongly that it was time we workers stood up for ourselves..." (Ndadi, 1974, 55)

Ndadi organised a go-slow, ultimately achieving the transfer of a particularly sadistic white supervisor. "This is a great victory for us! I think we have all learned how strong we can be when we work together." But Ndadi was acutely aware that the workers still had a long way to go in the fight against long hours and low wages.

DELTA

Industrial progress gave rise to a growing sense of confidence, which in turn inspired people to take on aspects of the natural environment that had been considered beyond human intervention. Many governments after World War Two embarked on ambitious programmes to dam rivers and alter watercourses. During the 1960s, on a global scale, an average of one large dam was completed per day. (McNeill, 2000,159) Over and above altering the flow of water "dams served larger political purposes wherever they were built. Communists, democrats, colonialists, anti-colonialists all saw some big appeal in big dams. Governments liked the image they suggested: an energetic, determined state capable of taming rivers for the
social good. Dams helped to legitimate governments... Political utility helps explain why so many uneconomic and ecologically dubious dams exist.” (McNeill, 2000, 157-159)

Steward, in a political treatise devoted to legitimising South African control over South West Africa, devotes a disproportionately large section of his book to South African investment in two major dams, one near Mariental and another near Okahandja, under construction in 1963 at a cost of R1 million. (Steward, 1963, 26)

Walvis Bay was subject to the same forces, albeit on a more modest scale, when a wall was constructed in the Kuiseb Delta in 1962 to redirect the infrequent flow in the northern channel of the river. At 7.3km long and 2m high, the wall helped to keep floodwaters out of the town, but it has also had the effect of cutting off groundwater flows to the old Kuiseb Delta, causing !nara and other desert plants to die off.

Increasing exploitation of water from the delta during this period inevitably impacted on water resources in the aquifer, reducing supply. In 1951, water was rationed daily from 18h00 to 21h00. (Wilken, 1978, 45)

DESSERT

In 1962, the South African government decided to station a large army base in Walvis Bay. Reasons included the strategic importance of Walvis Bay, now in effect South Africa’s northernmost port on the western seaboard; political resistance to apartheid both in South Africa and in South West Africa; and an international community increasingly opposed to continued South African control over South West Africa.

Parts of the camp were located within the town and army personnel soon made up one-fifth of the white population. This inevitably boosted the economy of the town, providing a market for restaurants and shops. The bulk of the camp was located in the desert, extending the ecological footprint of the army base far beyond the confines of the town.

Army publications made much of the open shooting ranges and flat terrain of the gravel plains (“harde woestyn”) as the perfect exercise area for tanks and *panzer* vehicles (Garnett-Bennet, 1990, 20).

An article published in the April edition of *Kommando*, the official monthly magazine of the South African Defence Force, in 1962, proudly announced that South African forces would be intensively trained under desert conditions. (Kommando, 1962, 24) The accompanying photograph illustrates the extensive tracks in the desert sand made by construction and military vehicles. This did untold damage to the delicate ecology of the area. Army materiel, spent cartridges and military waste were regularly dumped in the desert.

By the mid-1960s, a military airport had also been built, consolidating Walvis Bay’s role as a forward base for extending military control over the rest of South West Africa.

LAGOON

Few human interventions impacted on the lagoon until the 1960s, but the development of a salt-producing plant on the western bank of the lagoon soon transformed this landscape. Namibia’s windy and arid coastline provides favourable conditions for the cheap production of salt. A small salt works in Swakopmund was already producing salt for the preservation of fish in the 1930s, but the potential for salt production in Walvis Bay had not yet been exploited.

In the 1960s Walvis Bay Salt Refiners (Pty) Ltd established evaporation ponds on the tidal flats to the west and south of the lagoon to extract salt from seawater. According to geologist Nicole Grunert, “The precipitation of salts out of the sea water is a geological process, which follows definite laws. In a lagoon, which is progressively cut off from the sea, evaporation is higher than the supply of further seawater. This leads to a permanent and inevitable increase of the soluble salt concentration dissolved in the water until a saturated brine is developed which by further water evaporation
causes the dissolved salts to crystallise and these are deposited on the bottom of the basin.” (Grunert, 2000, 112)

Situated in the tidal flats, the salt works occupied land that was previously part of the lagoon and was regularly inundated. This inhibited tidal flows into the lagoon, and may have intensified the build-up of silt on the lagoon bed. The vast evaporation pans, however, provided another attractive habitat for birds, and many flamingos gathered in the pans to feed off the microscopic crustaceans that afford the salt pans their startling red colouration.

With the development of the chemical industry in South Africa from 1951, a large export market was created, and the majority of salt produced by the plant was sent to South Africa for use as a raw material for the chlor-alkali industry producing chlorine and caustic soda. This provided another example of industrial development in South Africa, intensifying the extraction of raw materials in South West Africa.

The development of the salt works in the tidal flats, the growth of the town at the north-eastern end of the lagoon, and the build up of dunes preventing the southern arm of Kuiseb reaching the sea, together caused a reduction in the size of the lagoon and exacerbated the sedimentation process. The salt pans have also caused increased salinity in the lagoon.

But the salt pans also offered a number of benefits:
- They created large areas of permanently flooded shallow water with extensive shorelines providing a habitat for birds. Flamingos, in particular, feed off the algae that grows in the hyper-saline water.
- They cut off any significant wind-blown sand supply to the southern part of the lagoon, thus limiting sedimentation of this area.

TOWN

Industrial expansion, fuelled by the spectacular growth of the fishing industry, had its counterpart in the dramatic growth of the town, and promotional literature issued by the municipality advertised Walvis Bay as a “Town of Opportunity - Port of Tomorrow”: Walvis Bay was destined to play nothing less than “a very important role in the future development of Dark Africa and in world history”. (Burke, 1952)

Employees to man the growing factories and service the town were drawn from all over the country to boost the town’s population from 800 in 1946, to 22 000 in 1970, to 27 000 in 1976, according to Richard Moorsom (1984, 37). Figures from pamphlets issued by the municipality were more specific with respect to race - and to the changing terminology used by the government to refer to its African population:
- The 1951 census revealed “936 Europeans, 214 Coloureds and 2 017 Natives”, to give a total of 3 167 (Burke, 1952); and
- The 1966 estimates were “6 500 Europeans, 3 000 Coloureds, and 8 600 Bantu to give a total of 18 100 (Walvis Bay Municipality, 1966)
This growth - which resulted in the doubling of the town area - manifested itself through changes in the “white town”, which became known as Walvis Bay Proper (Billawer, 2002, 8), and in the nature of accommodation provided for blacks.

The 1950s saw significant improvements in the infrastructure servicing the town with the establishment of new water, electricity and sewerage schemes. In 1952, water consumption reached 60 000 000 gallons (Burke, 1952) and the first municipal power station was constructed, consisting of four diesel engines. By 1955 a new electricity generating plant opened with eight engines to meet the demands of the fishing industry. This was enlarged again in 1960.

While the additional infrastructure undoubtedly contributed to greater economic activity, it also made inroads into the natural resources of the area, particularly water. But increased water consumption was partially offset by a new sewerage treatment plant, a significant environmental advance. This meant that raw sewage was no longer dumped in the ocean. Treated effluent from the plant could be used as a source of water for irrigating municipal gardens and municipal sports grounds. The constant outflow of treated effluent was also channelled into a wetland to create another important habitat for coastal birds, including flamingos and pelicans.

These developments coupled with growing economic activity contributed to a new sense of permanence for many white residents, and heralded a fundamental shift in the architecture of the town. Until this stage most buildings in Walvis Bay had been built on stilts, as a response to drifting sands and occasional floods.

In order to promote residential development and to afford the town a more conventional appearance, the municipality took extraordinary measures to induce residents to buy plots, and build solid brick homes, going so far as assisting homeowners with the foundations for their houses. This involved digging up and carting away the salt-laden and water-logged soil from each residential plot and replacing this with inert dune sand that would not corrode the concrete foundations. As a result of these inducements, new houses sprang up regularly and wooden houses started slowly going out of fashion. (Interview with Jan Wilken, 2001) The municipal pamphlets made much of this modern building style, but this made the town more susceptible to flooding when water flowed down the Kuiseb, and contributed to the destruction of its unique architectural character.
Other blacks lived in the location immediately east of the town, wedged between the area set aside for the radio mast and the old cemetery. (Derived from a map drawn by Karl Schweickhardt, 1934, Walvis Bay Municipal Museum) According to Ben Amathila, erstwhile Minister of Trade and industry in Namibia’s first post-independence government, who had lived in the location in the 1950s, “the Old Location had no segregation” (Amathila, 2000), comprising a mixed community of Cape Coloureds, Monrovians, Topnaars and Oshiwambo speakers.

Amenities were few and residents relied on leftover wood and charcoal from the steam train as the only sources of energy to cook and keep warm; bucket latrines for sewerage disposal; and the hospital at Grootfontein, more than 500km away, for medical services in the absence of a local clinic. Social pressures amongst residents however ensured that residents were extremely house-proud, even in the context of extreme poverty: “If one’s yard was not clean, it became the talk of the township.” (Amathila, 2000)

Ongoing entrenchment of apartheid practices meant that residents were faced with the threat of forced removal in 1957. Residents of the location had heard that the new houses would be constructed on the dunes, from bricks made with dune sand. This mobilised residents to prepare a memorandum setting out the reasons they did not wish to move, but this was rejected, resulting in residents beating up the superintendent of the location. Residents feared a repeat of the situation in Windhoek, where the government had forcibly crushed an uprising against forced removals from Windhoek’s Old Location to the newly planned Katatura Township in which 11 residents were killed. Although there were rumours that reinforcements were on the way from Windhoek to crush any resistance in Walvis Bay, these never arrived and the removal was finally effected. (Amathila, 2000) This freed up land that would later accommodate a new municipal complex and police station in 1974.
In 1959 the Walvis Bay municipality developed the Kuisebmond township to accommodate their African population and in 1962 laid out Narraville to house Coloureds. Funded by the municipality through sale of water and electricity, and by a housing levy on employers, both new areas were built along the lines of South Africa’s apartheid townships. Kuisebmond was buffered from the rest of the town by the industrial zone and an expanse of open land. Narraville lay beyond an expansive road reserve connecting Walvis Bay and Swakopmund. Large numbers of small uniform houses strung out along wide roads contributed to a monotonous urban landscape. A higher standard of housing in Narraville reflected the bizarre hierarchy of apartheid racism. Kuisebmond accommodated a large “ultra-modern Ovambo compound designed to accommodate 5 312 Ovambo labourers employed in the fishing industry, harbour etc”. (Walvis Bay Municipality, 1966)

The location of Kuisebmond near the fish factories was a pragmatic response, ensuring that workers lived conveniently close to their jobs, but it also meant that residents of Kuisebmond bore the brunt of foul-smelling air emanating from the fish-meal and fish oil plants.
“For unlike any other industry, the fishing industry neither owns nor controls its raw materials and its fortunes can vary with the whims of the weather, the flow of ocean currents or the still-mysterious movements of the fish themselves. When the raw material is massed off the coast the industry feasts... but if the fish is not available the industry may starve, its assets in boats and machinery rendered worthless.”

In 1972, United Nations Secretary General Dr Kurt Waldheim visited South Africa and South West Africa to hold discussions about the future status of the country. This resulted in a major breakthrough for the United Nations, when the South African Foreign Minister stated that “South West Africa has a separate international status” and that the “South African government does not claim any part of South West Africa” (United Nations Institute for Namibia, 1988, 49). South African Prime Minister John Vorster also issued a statement saying that his government’s policy was to prepare the inhabitants for self-determination. The possibility of an independent Namibia, coupled with Mozambican and Angolan independence in the wake of the Portuguese coup of 1974, seriously threatened to undermine South African control over the sub-region. Thus, while it looked as if South Africa was preparing for a slow retreat from South West Africa/Namibia, South Africa began to entrench its control over Walvis Bay.

More South African laws were extended to South West Africa, and Walvis Bay in 1972 became the setting for the first banning order in the country, imposed on Nathaniel Maxuilili, the acting president of SWAPO.

The hostel remained a uniquely repressive environment. According to one visitor in 1972, “the men sleep in dormitories consisting of eight sets of two-tier bunks, all made of concrete... The windows are high, and open only onto the inside of the compound” - a feature explained by workers interviewed in 1976 as a security measure to prevent them from escaping during the regular police pass raids.” (Moorsom, 1984, 40) Conditions such as these inspired workers in Walvis Bay’s canneries to initiate a major strike in 1971 against the contract labour system which soon spread to Windhoek and Tsumeb. Further strikes in 1972 resulted in average wage increases in factories of 33%.

In response to the increasing pace of resistance to apartheid, both in South Africa and in South West Africa/Namibia, and the presence of a hostile government in Angola, the Walvis Bay army base was enlarged, new naval facilities were established in the harbour and the South African Navy conducted training exercises off the coast.

Military expenditure went hand-in-hand with increased investment in the town and in the fishing industry. For Walvis Bay, this meant business as usual.

OCEAN

Although the South African government had declared that its policy was to exploit marine resources with a view to sustainable yields over the long term, the pilchard quota was quadrupled “from 227 000 tonnes in the 1950s to a massive 965 000 tonnes in 1968. It also permitted two huge fish-meal factory ships based in Cape Town to fish outside the 19km limit without quota restrictions.” (Moorsom, 1984, 29) The highest catch ever was recorded that year.

By 1971 some experts were worried that these catches would decimate fish populations and on their advice fishing quotas were slashed and factory ships banned. There was a limited recovery for two years, but by 1974 the normal day shift at the Ovenstone factory, which supposedly offered the best working conditions, was 14 hours, five days a week, at a time of
relative scarcity. By 1975 quotas were pushed up again and the government invested R5 million in improved landing and repair facilities.

In 1976 nine fish factories in Walvis Bay were in full production: “Six combined pilchard canneries with meat/oil reduction plants, two more housed reduction plants only, one of them also containing white fish processing capacity, and a ninth was limited to the freezing of small quantities of pilchards. Investments in building and machinery for what is a highly capital-intensive operation grew from about R9 million in 1955 to R45 million in 1976. So too did profits: through the 1970s the sector’s gross profits were regularly over 30% both of income and capital investment, giving ‘exceptionally high yields’ to its predominantly South African stockholders. As one report had it, their ‘balance sheets proved that a fishing quota was a licence to print money”. (Moorsom, 1984, 29)

DESSERT

The increasing military build-up affected the base in Walvis Bay. The airfield and installations at Rooikop were enlarged and by the mid-1970s the base had the capacity to train up to 1 500 soldiers at a time. Weaponry at the base included artillery guns, mortar bombs, anti-tank rocket launchers, Eland armoured cars, Vickers machine guns, and hand grenades. Influenced by the United States army which was fighting in Vietnam at the time, South African forces used the desert as a vast testing ground, in much the same way that the American army exploited the Mojave, undermining this fragile environment.

In 1974 the honorary freedom of entry to Walvis Bay was conferred on the Second South African Infantry Battalion stationed in the town. (Wilken, 1978, 135)

Of all the stations available to South African army conscripts, Walvis Bay was among the least desirable, not only because the town offered little in the way of entertainment, but because soldiers were forced to run up and down the dunes with fully laden kits. Even soldiers who had not been posted at Walvis Bay had heard about the area’s highest and most dreaded dune, Dune Seven.

LAGOON

Production at the salt works increased significantly in the 1970s and the plant consistently employed about 100 people from 1974 onwards. The largest part of the salt harvest continued to be exported to South Africa, for use by the chemical industry.

Mounds of salt extracted through solar evaporation from pans near the lagoon.

(Namibia Scientific Society Archive 36488)
Amongst the significant investment of the South African government intent on entrenching its position were new municipal offices at a cost of R500 000, and a new municipal library at a cost of R250 000. These new buildings were located on land that had been freed up when the Old Location was demolished. During this period the government also commissioned a municipal caravan park, high-mast lighting for Kuisebmond, and completed extensions to the fishing harbour. (Wilken, 1978, 135) In 1971 a new suburb called Meersig was proclaimed along the edge of the lagoon as an “exclusively white, high-income area, with huge plots and luxury homes”. (Billawer, 2002, 24) As houses developed along the lagoon edge, views of the flamingos afforded white residents of Walvis Bay a unique appreciation of this environment which black residents, living beyond the fish factories on the other side of the town were unlikely to share.

The municipal boundary of the town was extended far beyond the built-up area to include all the land that had formed part of the original enclave annexed by Colonel Dyer in 1878, encompassing 1 124 square kilometres. The Walvis Bay municipality was helping prepare the ground for South Africa’s forthcoming annexation of the territory.
“South Africa could not withdraw from SWA/Namibia, as the operational area would then be transferred from the territory to the Northern Cape and South Africa would lose the initiative... South Africa’s enemies were intent on overthrowing its democratic lifestyle by polarising its population groups, gaining control of its mineral riches and dominating the Cape sea route”.

In 1976 the United Nations adopted Resolution 385 and later Resolution 435. These stated that "free elections under the supervision and control of the United Nations be held for the whole of Namibia as one political entity". (United Nations Institute for Namibia, 1988, 49) This was a clear signal that South Africa would have to relinquish control over South West Africa. In 1977 the South African government appointed the first Administrator General to administer what was to be called South West Africa / Namibia, and to collaborate with the United Nations in the transition to independence. On the very same day, South Africa hurriedly annexed Walvis Bay, and re-imposed direct rule after 60 years of administration from Windhoek. South Africa based its claim to Walvis Bay on the annexation a century earlier by Great Britain on behalf of the Cape Colony. In terms of Proclamation R202, the administration of Walvis Bay was transferred back to Cape Province. South African Prime Minister John Vorster clarified South Africa’s position: “I do not want there to be any misunderstanding whatsoever about this, Walvis Bay belongs to South Africa.” (Berat, 1990, 1)

South Africa’s aim was to retain Walvis Bay as a bargaining chip to restrict the political and economic space of a future independent Namibia. This annexation was a violation of international law. The United Nations and Namibian nationalists declared that Walvis Bay was historically, culturally, geographically and economically integrated into Namibia. Sam Nujoma, President of SWAPO, was equally emphatic about the status of Walvis Bay, countering Vorster’s claim: “SWAPO fights to liberate each and every inch of Namibia, including Walvis Bay.” (Berat, 1990, 1)

The relative stability that Walvis Bay had enjoyed as an integral part of South West Africa - albeit within the ambit of South African control - was now seriously threatened, transforming Walvis Bay into an isolated outpost, and a colonial anomaly in an age of independence. This had the effect of sharpening the appetites of the colonisers, whether government officials or factory owners, to make short-term gains as quickly as possible.

As apartheid legislation gradually loosened in the rest of the country, Walvis Bay was subject to even stricter control. Coloureds were removed from political life, and African residents were regarded as foreign nationals, citizens only of the homelands to which they had been assigned.

In 1978 the Walvis Bay Council embarked on elaborate centenary festivities to celebrate Colonel Dyer’s annexation in 1878. It was not often that the South African government found itself celebrating British colonial conquests, but in this particular instance, Dyer’s annexation resonated powerfully with South Africa’s political ambitions.

While the international community mobilised arguments to counter South Africa’s illegal annexation of Walvis Bay, it also began to address a new global concern: environmental sustainability. McNeill describes the process: “For millions of people swamps long suited to draining had become wetlands worth conserving. Wolves graduated from varmints to noble savages… Pollution no longer signified industrial wealth but a crime against nature and society.” (McNeill, 2000, 340) By 1987, the Brundtland report defined sustainable development as “meeting the needs of the present without compromising the ability of future generations to meet their own needs”. Then, in 1992 the United Nations convened a conference in Rio de Janeiro to discuss the effects of human activity on the environment, and to persuade governments worldwide to take responsibility for actions harming...
the environment. But the global rise of environmental consciousness had little effect on policy makers in Walvis Bay - yet. According to Jan Wilken, town historian and current town councillor, environmental consciousness was "not actively taken into account. It came to the forefront only in the last 15 years." (Interview with Jan Wilken, 2001)

Twelve years after the United Nations Security Council had adopted Resolution 435, Namibia finally achieved independence. But not Walvis Bay. For the next four years South Africa retained control over the town, relinquishing it only after the African National Congress won the elections of 1994.

The period between 1990 and 1994 inevitably involved consolidation of the South African army presence and continuing control over the harbour. Although the harbour authorities did not obstruct Namibian imports and exports moving through the port, the threat that South Africa would inhibit Namibia’s international trade gave rise to fears that a country with a 2000km coastline could become effectively landlocked.

The status of Walvis Bay also impacted on fishing, as foreign boats fishing off Walvis Bay rushed to haul in huge catches in the absence of any control and in a last desperate attempt to derive short-term economic benefits in the context of political uncertainty.

**OCEAN**

The years of prosperity for the fishing industry took a dramatic turn in 1977. While the production of canned pilchards was worth R64 million on 1976, this fell to R30 million in 1978. This should not have come as a surprise to fishing companies for whom “short-term profiteering took preference over long-term conservation of fish stocks.” (Moorsom, 1984, 29) Analysts of fishing trends worldwide could also have anticipated this frightening decline.

“Wherever modern fishing methods were applied,” says McNeill, “sooner or later high fishing pressure, combined with a natural downturn in fish stocks, led to a crash.” (2000, 248) The Japanese pilchard industry, which had been the world’s largest in the 1930s, crashed in 1946-1949, recovered in the mid 1970s and crashed again in 1994. Californian sardine fisheries declined sharply in 1945 and collapsed completely in 1968. Out-of-work Californian fishermen migrated to Peru to set up shop in the Humboldt Current, transforming the Peruvian fish industry. By 1962 Peru caught more fish than any country in the world. Fishing peaked between 1967 and 1971, landing up to 12 million tons. But this fell to two million tons in 1972 for the next 15 years, destroying the Peruvian economy and contributing to the turbulent politics of the 1970s and 1980s. (McNeill, 2000)

But the owners of Walvis Bay’s fish factories cared little for these cautionary tales, and “maintained their optimism. ‘Fishing is like farming, very seasonal,’ stated one company chairman, Robert Silverman, early in 1978. ‘If our fears are confirmed for this year, one bad year does not mean that it will be followed by another.’” (Moorsom, 1984, 33) His optimism proved to be ill conceived and pilchard catches continued to decline. Over the next two years the plants worked only intermittently.

In line with a worldwide trend, South Africa tried to legislate a 200 mile (320km) fishery zone extending from Walvis Bay and later in 1979, extending it along the length of the South West African/ Namibian coastline. Although South Africa used gunboats to patrol the fishing zone, this had no force in international law, because of the illegitimate nature of South African rule. This meant that Namibia saw its “fish scooped up by long distance fleets from eastern Europe and east Asia”. (McNeill, 2000, 250)

Competition between South Africans and foreign trawlers exacerbated the problem: Fishermen who refrained from catching young fish lost their haul to those who had no concern for future fish stocks. The migratory nature of
many fish compounded the difficulty of keeping local fish for local fishermen. "For most of the twentieth century, these difficult facts kept the fisherman’s life hard and poor. For commercially viable fish and whales it made life short." (McNeill, 2000, 238)

Political uncertainty about the status of Walvis Bay made matters even worse: “In ‘frontier’ areas cashing in quickly whenever possible was hard to resist, and the rationale of preserving a resource for the future was especially weak.” (McNeill, 2000, 322)

By 1981 factories had been banned from catching pilchards, but this radical action proved to be too little too late. As pilchards declined, anchovies moved in to fill the ecological niche. The introduction of anchovy nets in 1968 also led to over-fishing, and by the 1980s anchovy stocks were also collapsing. Fishing companies transferred their plant elsewhere, to South Africa and to Chile, in effect stripping Walvis Bay of its assets.

It was only after the collapse of the pelagic fisheries that attempts were made to diversify into horse mackerel and hake. But the fishing of hake was extremely limited because of the reluctance of South African companies to invest in costly freezer trawlers. The Walvis Bay fishing industry was no longer the economic mainstay of the town. By mid 1981 only four factories remained operational, and the once-booming town confronted a devastating depression.

**TOWN**

As the spending power of people involved in the fishing industry dried up, businesses closed down. One-third of the population and half the labour force left the town between 1976 and 1980. “In Kuisebmond the single quarters are 79% empty, the Ovambo hostel 63% empty and the flats 29%”. (Moorsom, 1984, 44) Some 7 500 jobs were lost between 1976 and 1979 - about half the workforce had been made unemployed in three years.

In 1978 the chairman of the local Afrikaner Chamber of Commerce Jan van der Merwe said that “everything has just gone bang.” (Moorsom, 1984, 45)

The economic collapse could not have come at a worse time for the South African government as it prepared to further entrench its control over its newly annexed territory. The government therefore took various measures to spur economic growth. There was significant investment in the harbour, rail network, a new prison, public housing, and the construction of a large military base at Rooikop. Walvis Bay was also given “border industry status”, benefiting from countless subsidies that had been designed to prop up South Africa’s economically dependent “Bantu homelands” including subsidies for wages and a 40% rebate on rail tariffs. Investors who took advantage of these concessions were well placed to undercut their competitors in other parts of the country.

In 1979, as Kuisebmond emptied out, a housing shortage emerged in Narraville, but attempts by Coloureds to move into white parts of town were vigorously resisted by a municipality intent on applying apartheid legislation.

**LAGOON**

The rail rebate, intended to spur Walvis Bay’s economic development, was particularly advantageous to the salt industry which is highly sensitive to transportation costs. The salt processing industry was “the most conspicuous instance of favoured status”. (Moorsom, 1984, 49) In mid-1982 railage from Walvis Bay to the chemical industry in Sasolburg in South Africa accounted for over 75% of the total cost on delivery. The rail rebate therefore gave the Walvis Bay plant a competitive advantage over other salt producing plants. Salt continued to be sent from Walvis Bay as a feedstock for South Africa’s chemical factories in Sasolburg and in Chloorkop, near Johannesburg.
The construction of a new road to provide access to the salt works and to Sandwich Harbour, and Paaltjies, truncated the southern lagoon and inhibited seasonal inundation towards south and east. This destroyed extensive areas of natural tidal flooding and affected the natural functioning of the lagoon system.

DESSERT

Increasing investment in the Rooikop army base was as much a measure to prop up the economy of the dying town as a military strategy to build up South Africa’s offensive capacity against SWAPO and their Angolan allies. In 1975 and 1976 the Second South African Infantry Battalion, based in Walvis Bay, played a major role in incursions into Angola, which continued until the 1980s. During this period Walvis Bay was brought under the unified South West African Command of the South African Defence Force for the first time. By 1981, Walvis Bay had one of the most intense concentrations of military force in Africa.

In 1990 a South African Army magazine reported that “present development plans for the military installations are well underway. The Rooikop base, which is now occupied by the elite Sixty One Mechanised Battle Group, has in the past relied on tentage for troop accommodation, a most unsatisfactory situation considering the desert conditions of heat and dust. The development programme which includes brick accommodation, better messing and ablution facilities is progressing well.” (Armed Forces, February 1990)

BAY

As South West Africa moved towards independence, the port became a priority for the South African government because control over the harbour effectively meant control over South West African imports and exports. This strategic lynchpin could, if necessary, be used to strangle a government unsympathetic to South African interests. Such political thinking inspired a spurt of new investment in the port even as shipping declined when the new “ro-ro ships” - specially designed for the speedy rolling on and rolling off of containers - sought out other harbours better suited to containerisation. In 1981, “R5 million had been allocated for harbour improvement including the relaying of all the railway track, the construction of a quay for small craft, and the rebuilding and modernising of three of the berths.” (Moorsom, 1984, 48) A new R2 million cold store opened in June 1982.
CHAPTER 10
RE-INTEGRATION AND AFTER
1994 - 2002
During the early 1990s it became obvious that Walvis Bay would not benefit from the increasing investment flowing into a newly independent Namibia if the town remained a South African possession. As a result the local business community and investors applied pressure on the South African authorities to resolve the political status of the town. These demands coincided with South Africa's own transition to democracy and by 1994 Walvis Bay was re-integrated with the rest of Namibia.

A new sense of opportunity pervaded the town. Many migrants flocked to Walvis Bay immediately after re-integration, swelling the population of Kuisebmond in particular.

Re-integration brought about a change in legislative regime. Walvis Bay was incorporated as a local authority and after local government elections in 1995, a new town council was established. For the first time residents living in Kuisebmond and Narraville - who had been marginalised by apartheid legislation - would be represented in the municipality. Walvis Bay was deemed to be a Part 1 Municipality with power to:

- Fix property rates and taxes and provide loans for housing;
- Provide and manage urban services such as water, electricity, sewerage and drainage, and refuse collection;
- Construct and maintain streets and public spaces;
- Determine land uses. (Billawer, 2002)

Since re-integration, Walvis Bay forms part of the Erongo Region. Although this is the smallest of the five districts, it is also the wealthiest due to mining, fishing and tourism. A Structure Plan, promulgated in 1999, guides development in the town. The Structure Plan places an emphasis on the creation of “an integrated coastal desert city, where people and their structures and activities co-exist with the natural environment in the most sustainable fashion, and where the unique ecology of the greater Walvis Bay forms the core of a new urban image for Walvis Bay”. (Stubenrauch Planning Consultants, 1999, 33)

The new global emphasis on environmental issues, which had been ignored when Walvis Bay functioned as a colonial outpost, now forms the background to the development of Namibia and Walvis Bay. The economy of both the country and town continues to be reliant on the primary extraction of limited natural resources - hence the need to ensure that these resources are managed in a sustainable fashion for the benefit of residents now and in the future.

“Safe the fish: keep oil away.” Children are becoming increasingly aware of the need for sustainable management of Walvis Bay’s natural resources.

(Submission to the children’s competition organised by the Walvis Bay Local Agenda 21 Project)
This new focus on environmental issues is borne out in the formation of the Walvis Bay Environmental Action Group in 1996, the Environmental Impact Assessments carried out for the development of Long Beach and Dolphin Beach, the formulation of the Walvis Bay Lagoon Integrated Environmental Management Plan (1998), the town’s Structure Plan (1999) and the current Local Agenda 21 Project which will establish an environmental policy for the town.

LAGOON

In 1995 the Walvis Bay lagoon was declared a Ramsar site, a wetland of international significance, focusing the attention of residents on the importance of this unique environment. The lagoon is the most valuable coastal wetland in Southern Africa for palaearctic shore birds. It is a safe haven for up to 160 000 birds as well as a feeding station for 2 000 shore birds and terns on their bi-annual migration routes to and from the Arctic. As a result birds in the Walvis Bay lagoon have
- great conservation value locally and internationally;
- economic value, successfully attracting tourists and bird-watchers with Walvis Bay being renowned as the best flamingo viewing locality in the world; and
- evocative value as the lagoon helps to define the identity of the town of Walvis Bay.

(Lagoon Plan, 1998, 20)

The lagoon also functions as a recreational amenity for windsurfing, kayaking, swimming and the use of small boats. There is concern that as these uses increase, bird and fish populations could be undermined. Natural processes in the lagoon are also threatened by pollution from harbour, including petroleum, fish processing waste, ore dust, cargo packaging waste, heavy metal waste, toxic waste, and galley waste. (Lagoon Plan, 1998, 21)

A careful balance will have to be found so that the lagoon can function both as a recreational amenity and a unique habitat for birds. (Burkhard Dobney)

But equally worrying is the build-up of silt on the bottom of the lagoon. Fish that need deep water can no longer find refuge and the lagoon now only accommodates small mullet, springer and skates. This in turn impacts on bird life. This sedimentation process can be partially ascribed to the build-up of wind-driven sand from the dunes flanking the eastern side of the lagoon, but is also the result of human activities. A number of man-made interventions have compromised the capacity of outgoing tides to flush out suspended sediments:
- The dredging of the harbour has increased the water-borne sediment load.
- Urban development has altered the profile of the lagoon edge.
- Tidal flooding patterns have changed due to the creation of the salt pans and the construction of roads crossing the tidal flats.

On the other hand a number of human interventions are helping to arrest sedimentation:
- Roads leading to the salt works have retarded the rate of sedimentation.
- Sand trapping barriers and dune stabilising efforts have also helped to cut off much of the sediment influx.
The salt works in the lagoon area continue to contribute to the economy of the town and generate about 100 jobs. Salt and Chemicals (Pty) Ltd produces over 400 000 tons of industrial quality salt each year in ponds covering an area of 4 000 hectares. Bulk salt is mainly exported to South Africa for its chemical industry but some bulk salt is also shipped to West Africa and Norway for the fishing industry. Bagged salt is exported to South Africa for use in animal feed supplements, in sugar refining, and as the raw material in the manufacture of refined table salt.

Salt production at Walvis Bay Salt Refiners. (Namibia Scientific Society Archive 3649/17)

The evaporation ponds of the salt works effectively extend the feeding grounds for many of the birds using the lagoon. This has helped to increase the population of the inter-African migrants, in particular lesser flamingos, illustrating that with good management, man and wildlife can co-exist. The salt-pan also form an ideal habitat for farming oysters and protect oysters from red tides and sulphur eruptions. These environmental advantages need to be weighed against increased sedimentation in the lagoon caused by the high-water protection dyke, the access roads and other barriers to natural water flow.

DELTA

Residents of Walvis Bay were alerted to the unpredictable nature of the Kuiseb River when floodwaters reached the saltworks in 1999/2000, illustrating that even man-made interventions like the wall, built in the 1960s, often cannot arrest the forces of nature.

Walvis Bay continues to derive its potable water for drinking and industry from the Kuiseb aquifer. There is, however, growing concern that “current extraction of groundwater exceeds natural recharge levels”. (Billawer, 2002, 20) Should saline water from the sea enter the aquifer, this will cause the vegetation in the Kuiseb delta to die back. This will in turn increase wind erosion and sand encroachment, posing a threat to residents, the harbour and the lagoon. This suggests that a water management policy that recognises water scarcity will have to be devised in the future.

At present research is being conducted regarding the establishment of a desalination plant to increase water supply in the area. But desalination plants are notoriously expensive and consume large amounts of energy. Thus pressure on one resource would be replaced with pressure on another. (Walvis Bay Local Agenda 21 Project, 30)

In the meantime water continues to be sourced from the Kuiseb aquifer.

The combination of the extraction of water from the delta and the effects of the wall against flooding have reduced the Topnaar community’s !nara fields. The Topnaar Community Development Forum has pointed to the economic significance of these fields as well as the cultural importance of ancestral Topnaar graves located in the delta. In addition, Local Agenda 21
specifically calls for “recognising and strengthening the role of indigenous people and their communities: Indigenous people have evolved a comprehensive, traditional scientific knowledge of the land, its natural resources and how to use these resources in a sustainable way. These values and traditional knowledge should be incorporated into national plans and traditional land should be protected against negative influences on the environment.” (Stubenrauch Planning Consultants, 1999, 41) Further developments in the delta will therefore have to be pursued in consultation with the Topnaar community.

Recreational quad-bikes, 4x4 vehicles and other dune sports have come to replace the South African army’s military exercises as threats to the desert ecology. However the declaration of the Namib-Naukluft Park as a conservation area 50 000 square kilometres in extent around the town will help to ensure that this area is treated with greater sensitivity in the future. Specific sites to accommodate quad bikes away from sensitive areas have already been established and will help limit the effects of these vehicles while generating economic opportunities.

While human interventions are being controlled in this way, the desert’s natural forces continue to impact on human activity. Sand encroachment is an ongoing problem, and roads have to be constantly cleared. Trees and reeds are an effective barrier against encroaching sands, and current initiatives to plant more street trees along the main roads and to green Kuisebmond will help to check the ongoing drift of desert sand into the town.

The long-shore transport of sediment has had a major effect on Pelican Point. There is evidence that this sand-spit is growing by 17.4m per year. The Point has helped maintain the quiescent conditions in the harbour, but there is concern that the midsection of the spit is being eroded. If the sand-spit is breached, increased sediments will be transported into the bay, exacerbating sedimentation and threatening the functioning of the harbour. Already millions of Namibian dollars are spent on dredging and maintenance of the harbour area. The harbour could silt up if existing management systems become inoperative.

Adequate depths are needed so that large, panamax-sized ships can dock in the harbour. This helps maximise the port’s infrastructure and its location - ideal to serve Zimbabwe, Botswana, the southern parts of Angola and Zambia. Because Walvis Bay harbour is now as deep as Cape Town, it can compete for traffic from bigger vessels that could not be accommodated earlier. The port can now handle vessels with a capacity of 2 200 to 2 400 containers.

Namport, the state organisation that took over management of the Walvis Bay port in 1994, has considerably expanded the facilities to comply with international standards. Each year 800 vessels and two million tons of
cargo pass through the port which handles dry-bulk, break bulk, petroleum products and containerised cargos. The harbour comprises a container terminal, two privately operated bulk terminals, a tanker jetty, a synchro lift and "a state-of-the-art cold storage facility" for the export of fish, meat and fresh fruit. (Namport, 2000, 11) The harbour also accommodates a thriving ship repair business in its dry-dock. There are plans to install another synchro-lift for ships up to 5 000 tons. Namport believes that the harbour will play an increasingly important role in Southern Africa because of congestion in South Africa's ports.

New infrastructure has enhanced the productivity of the port. (Local Agenda 21)

Such ambitious development is not devoid of environmental impacts. Ships have been known to leak toxic material including heavy metals, exotic organic compounds such as pesticides, oil and petroleum. All these can be acutely toxic and cause damage to marine food chains. Oil and petroleum products in particular can have profound effects on marine and land organisms, inhibiting growth, reducing reproduction, and tainting the flesh in fish and shellfish. Between 1993 and 1995 there were 27 minor oil spills and one major oil spill in the harbour. The introduction of exotic species can also cause changes in the relative abundance of various species, with the result that some species may be driven to extinction. (Heather-Clark, 1996)

OCEAN

Following years of over-exploitation by foreign fleets, management of Namibia's marine resources was taken over by the Namibian government in early 1990. Faced with the monumental task of rebuilding stocks, strict controls were enforced. New laws were promulgated to ensure more sustainable use of marine resources and significant Namibian ownership of the fishing industry.

In 1991 a new policy was devised to regulate exploitation rights and allocate quotas. In 1992 the new Sea Fisheries Act was gazetted. This emphasises the Namibianisation of all sectors of fishing industry with
quotas lasting for four, seven, or ten years. The longer rights are issued to companies that are mainly owned by Namibians, employ Namibians at sea and on land, have a proven track record in the industry, and have demonstrated long-term commitment to investing in the fishing industry. “For the people of Namibia, our independence came as a political salvation, a liberation from colonialism; for *Merluccius capensis* and *M. paradoxus*, our hake species, it came as a well timed rescue from destruction.” (Jurgens, 2001, 26)

But the new regime had little impact on fishing off Walvis Bay until re-integration. And indeed, between 1990 and 1994, fishing off Walvis Bay increased because of political insecurity.

Today this scenario is fundamentally different and strict fishing quotas are implemented along the entire Namibian coastline, suggesting that policies are in place for sustaining the industry over the long term.

The industry has also grown considerably. In 1990 the fishing industry’s contribution to Gross Domestic Product was 5%; in the 1999/2000 financial year this rose to 10.5%. The fishing industry’s share of the manufacturing sector increased to 36% last year. Fishing is now the second largest earner in the Namibian economy after mining and tourism. “Before independence, the industry provided 3 000 - 4000 jobs; this has grown to 14 000 - 15 000. In 1990 Namibians made up barely half of crews on vessels; now (2000) they make up 75%. Meanwhile local boat ownership in Namibian waters increased from 51% to 85%. The fishing industry is responsible for about a quarter of Namibia’s exports - the largest contribution after diamonds.” (Finance Week, 2000)

The Walvis Bay fishing industry is divided into four sectors:

**Demersal, or bottom fishing**, is the industry’s backbone. Hake makes up the largest catch amongst the white fish taken off the bottom of the ocean. The industry is a good source of permanent jobs, which is not the case with most other types of fishing. Demersal fishing is the largest employer in the region with 15 fishing industries registered in Walvis Bay, of which 11 are on-shore processors. Though generally processed at sea a greater proportion of demersal fish is landed wet, increasing from a mere 5% in 1992 to almost 55% in 2000 (Sherbourne, 2001). The white fish industry now accounts for almost 70% of all value added from the fishing sector and about 80% of all value addition on shore.

White fish is processed both offshore and on shore. Both catches and stocks are continuing to grow. Hake catches increased significantly from about 50 000 tonnes in 1990 to 200 000 tonnes in 2001, with a ten-fold increase over the last ten years. Europe is the destination for 95% of hake with Spain the biggest market.

Namibia’s waters also boast the scarce orange roughy found at depths of between 500 - 1200 metres. These fish live for over 100 years and generally reach sexual maturity at the age of 32. Namibia’s strain reaches maturity earlier at 24 which points to a higher rate of reproduction. Orange roughy, which has a firm white texture and a delicate taste, is popular among Americans who consume 80% of world production.
The pelagic sector suffered severe over-fishing in the 1960s. After the imposition of quotas in the early 1980s fish stocks recovered only partially, and were then denuded again by natural causes in the mid-1990s. As a result pilchard quotas have been cut dramatically in the past few years from a high of 125 000 tons in 1994 to 45 000 tons in 1999. Other fish species include anchovies and juvenile horse mackerel. This industry suffered further setbacks in 1999 when tinned fish was returned because of quality problems. Namibia's industry has lost the renowned Lucky Star brand and now has to develop its own identity. Increasing pilchard catches in South Africa have compromised the success of Namibian industry in this sector.

Midwater trawling - to a depth of 400m - is a new industry in which local players have a strong interest. Horse mackerel is the main product and the output is processed into fish-meal. A quota of 360 000 tons was awarded for 2000. This is a stable industry showing growth. Horse mackerel is the cheapest source of protein in Africa. Although scorned by South Africans, the traditional market for Namibian fish, horse mackerel is exported to Nigeria, Ghana, Cameroon, Congo Brazzaville, the Democratic Republic of the Congo, Angola and Mozambique, markets which are acutely sensitive to price.

Line fish are caught both by recreational anglers and commercial operators. The main target species include cob, steenbras, dassie, galjoen, snoek and barbel. Fishing activity increases during the summer holidays. Line fish catches are limited by the Sea Fisheries Act of 1992 to 60kg of fish or 60 whole fish per vehicle, but no restriction for fish caught off ski-boats. (Holtzhausen, 1997, 112) Six ski boats operate in Swakopmund and Walvis Bay. A fish tagging project - which tags fish with distinctive yellow nylon labels - is currently being implemented to determine the migration patterns of line fish species. The longest recorded distance covered by a fish was that of a galjoen, which was tagged at Torra Bay and recaptured at Stillbaai on the South African coast after travelling 2 483 kilometres in just over a year. “With all these activities exploiting the same resource, sound management is needed to ensure their sustainable utilisation. With increasing pressure on our popular angling species over the last few years, there has been a marked decline in the number of fish caught per angler... Preliminary results indicate that steenbras and dassie have become scarcer in the open areas where they were previously considered abundant.” (Holtzhausen, 1997, 112).
The dynamic interrelationship between human activity and the ocean has meant that humans have had profound effects on fish, but that the fishing industry in turn has had profound effects on humans. The effect of over-fishing, discussed elsewhere in this report, is only one example, leading to job losses and the collapse of the town’s economy.

Fish too must endure the periodic sulphur eruptions, over which humans have no influence, caused by the high nutrient content of the Atlantic Ocean, which resulted in the mass destruction of fish populations in 1850, 1861 and 1927.

But there are human actions that impact on the ocean that are well within human control - and reducing marine pollution is one of them. Today there is a growing awareness that oceans cannot endlessly absorb the waste products generated by human activity. In Walvis Bay, the fish factories dump dirty water from cleaning fish and unwanted fish parts into the ocean. Marine pollution experts are concerned that this industrial effluent is having a negative effect on water quality in the bay. This may impact on the continued health of fish populations but also affects the efficient production of factories which rely on the intake of clean seawater. Mussels in the harbour area have died due to a combination of oil spills, discharge of wastes and high concentration of organic pollutants discharged by fish factories. A recent report states alarmingly that sea pollution near the factories “is deemed to be of such a magnitude that discharge standards should be set and enforced for the fish processing industries”. (COWI, 2001, 7)

The build-up of pollutants in the bay is compounded by a dead-zone behind the breakwater which cannot be regularly flushed by fresh seawater entering the fishing harbour.

Foul air emanating from the fishing harbour is also a problem. Because many fishing vessels lack refrigeration, the catch rots on board before reaching the harbour. Also the fish-meal factories use direct flame dryers for the production of fish meal rather than more efficient steam units, releasing plumes of foul-smelling smoke into the air. Air pollution is exacerbated by sea breezes that carry the emissions from the factories into town. Alternatively when the air is stable, odours are not dispersed at all. In March and April, at the height of the fishing season, smells which otherwise affect only the residents of Kuisebmond, who live closest to the fish factories, pervade the entire town. Some people say the odour problem is so bad that it is affecting the town’s prospects of attracting tourists. For some residents, however, this odour is the “smell of money”. (COWI, 2001, 8)

Foul air emanating from the fish-meal plants affects the residents of Kuisebmond most severely. (Local Agenda 21)

**TOWN**

The integration of Walvis Bay into Namibia and increasing job opportunities in the fishing industry and tourism sector have made Walvis Bay a magnet. The majority of new residents come from the underdeveloped northern regions - Oshana, Oshikoto, Ohagwena and Omusati - areas which had functioned as little more than a labour pool in service of colonial needs. The resulting growth in Walvis Bay, estimated at 6% (Stubenrauch Planning Consultants, 1999), is placing severe pressure on the urban system. Population is currently estimated at 41,000.
Eight years after integration, Walvis Bay remains a highly unequal town. Residents in the former white areas, in Narraville and in Kuisebmond are significantly differentiated by income levels and education levels, with the wealthiest and best educated residents living in the southern parts of town, and the poorest least educated residents living in the north. Half the households in the town earn less than N$1 000 per month while less than five percent earn more than N$10 000. In Kuisebmond average monthly incomes are lower than the Primary Household Subsistence Level. Naraville residents earn an average of N$2 300 per month, while those in Walvis Bay central and Walvis Bay south - the former white areas - earn an average of N$3 500. Residents in Kuisebmond mainly work in the fishing industry that offers low wages. These residents are generally unskilled and their lack of training can be linked to the exploitative labour system of the apartheid era. (Billawer, 2002)

Substantial investments in infrastructure and a programme of incentives are being implemented to spur investment in manufacturing, particularly for factories that will produce goods for export. Factories that have been established in Walvis Bay's new industrial park can apply for Export Processing Zone (EPZ) status to access the incentives on offer. Seventeen companies in the Walvis Bay industrial park so far have EPZ status and some have started exporting. So far the programme has had only limited success creating only a few hundred jobs altogether in the EPZs in Walvis Bay and other centres nationwide. But the government is hoping that the harbour improvements will allow for more efficient exports of manufactured goods and imports of production material and machinery, and therefore attract more business. It is also hoped that the EPZ will benefit from the completion of the “Walvis Bay Corridor”, a programme to link the port of Walvis Bay with countries inland.

Economic development is required to address problems of poverty and unemployment. (Local Agenda 21)

In the face of such inequalities, economic development is a major priority of local government. Plans to diversify the economy so that the town is less reliant on fishing are being put in place, focusing on new manufacturing industries and the tourism sector.

The Walvis Bay Corridor - a project started in 1997 to develop modern transport routes between Namibia and potential trading partners in southern and central Africa - has three core elements: the port, the Trans-Caprivi and the Trans-Kalahari highways. The Trans-Caprivi runs from Rundu in north-eastern Namibia to the Zambian border. The Trans-Caprivi provides a route from Walvis Bay to Botswana and Gauteng, South Africa’s industrial heartland. Though the completion of the project has been held up by political instability in the sub-region, the Namibian government and local officials in Walvis Bay believe that these significant investments in transportation infrastructure will ensure increased traffic of goods through Walvis Bay, and enhance the importance of the town. (Finance Week, 2000)

The Walvis Bay municipality is also promoting tourism as another economic development focus. Nationally this is the fastest growing industry and has grown by 13% since 1993 to become the third largest contributor to Namibia’s Gross Domestic Product. Tourism, which is highly labour intensive, has the potential to play an increasingly important role in job creation.
In response to these opportunities, a Tourism Association has been established to market Walvis Bay as a tourist destination. So far the town has managed to achieve relatively high levels of occupancy - between 70 and 80 per cent - in the large variety of tourist accommodation on offer.

The Raft restaurant is one of Walvis Bay's tourist attractions and is the only building that recalls the original architecture of the town. (Local Agenda 21)

While the smells emanating from the fish factories and the lack of architectural character are off-putting, it is Walvis Bay's unique natural environment that has the potential to attract tourists. This suggests that sensitive environmental management will be needed to support this industry. The particular attractions of Walvis Bay include:

- Temperate climate: The cold Benguela current contributes to pleasant mild weather conditions throughout the year with temperatures varying from 10°C to 25°C. In summer especially, Walvis Bay is a cool refuge for those wishing to escape the extreme heat of the interior.
- Unique bird-life: The lagoon accommodates flocks of Flamingos, the coastline provides a home to the endangered Damara tern, White pelicans swoop over the Bay, and Cape cormorants can be seen roosting on Bird Island. The lagoon's status as a Ramsar site has consolidated this unique habitat as Walvis Bay's premier tourist attraction.
- Desert environment: Dunes and lichen fields in the proclaimed conservation area - the Namib-Naukluft Park - attract desert enthusiasts. At the right time of year oryx, ostrich, springbok and mountain zebra can be seen. Closer to town, opportunities for controlled quad-biking and dune climbing - particularly up Dune Seven - are special attractions.
- The Kuiseb Delta: Inara plants, and the unique way of life of the Topnaar community, can offer urban dwellers an insight into people who have managed to preserve a harmonious relationship with their environment
- Opportunities for recreational angling: These are available along the coast, to the north and south of the town.

But tourism also impacts on the environment in negative ways. In 1989, 260kg of litter was collected from a 20km stretch of beach; in 1990, 365kg was collected; and in 1991, 518kg was collected from the same area. (Heather-Clark, 1996) Plastic fishing line left lying on the beach can kill or disable birds and seals. Recreational fishing is a major tourist activity but could result in over-fishing and could alter the balance of fish communities. Moreover, fishing spots are often remote and can only be reached by four-wheel drive vehicles. This can destabilise dunes, disrupt birds and destroy their eggs and nests. Tourists walking on the mudflats surrounding the lagoon can threaten the burrowing systems of small organisms and disrupt the underlying sediments.

The export processing zone and the focus on tourism are being complemented by new housing projects designed to address the housing shortage amongst the town's poorest residents. By the mid-1990s Kuisebmond was totally overcrowded hosting up to 11 000 people. By then the single quarters, originally designed for about 1 300 people, housed up to 2 600. In Narraville there were also very high densities. By 2001 there was a housing backlog of 2488 units with 40% of households living in overcrowded conditions in the hostel and single quarters and 13% living in shacks (Billawer, 2002). The municipality is currently negotiating with
shack dwellers associations like Wana Noshoye to provide low-cost housing for people living in shacks, hostels and single quarters. The N$8 million Tutaleni housing project, intended to accommodate 1 116 families is complete. An innovative design, pioneering higher densities than the norm, provides four slabs with wet cores per 300m$^2$ per erf, in a transitional housing project which residents are expected to consolidate over time.

The Tutalenihousingprojecthas pioneered higher residential densities. (Walvis Bay Municipality)

Increasing density is a planning concept that now guides building development throughout Walvis Bay. The Structure Plan aims to contain further northward sprawl along the Atlantic coast, and contain any further expansion of the Central Business District. The intention is to make better use of existing social facilities and utility infrastructure by consolidating development on vacant lots in those parts of town that have already been developed, rather than allowing the town to spread any further onto undeveloped land. (Stubenrauch Planning Consultants, 1999) This will help to create clearly defined edges to prevent encroachment of sand and make pockets of shade between buildings that will be more closely spaced. In this way the town will gradually acquire a distinctive style more appropriate to desert environments. The Structure Plan also intends addressing the fragmentation arising out of apartheid planning.

Although the current demand for water has levelled off, a shortage of fresh water in the future could become a serious constraint to the development of the town. Water demand increased 11.4% between 1993 and 1994 and water consumed by the fishing industry more than doubled between 1991 and 1995.

At the moment, extraction from Kuiseb aquifer exceeds natural recharge. This could disturb the hydrological balance, allowing saline water from the sea to penetrate ground water. Water extraction is also undermining the sand-break role of the river and sand movement is endangering the town and lagoon. This is not a unique phenomenon. McNeill points so similar practices worldwide: “New technologies and cheap energy in the twentieth century allowed aquifer mining on a grand scale. This made deserts bloom and cities grow, lubricating a few economic booms. But it was a short-term remedy for water shortage, and often clearly unsustainable. In some cases the practice could - with luck - serve as a bridge to an age of cheap desalinisation of seawater. The aquifer age will prove a passing phase, except in happy situations where pumping rates do not outstrip recharge.” (McNeill, 2000, 156)

At present Namwater - the state utility charged with water supply for the country - is investigating the possibility of developing a desalination plant off the Atlantic coast. But such plants are often costly. In the meantime the use of recycled water - in the form of purified effluent - should be extended. Today, this is only available in the former white areas for municipal parks and playing fields. The municipality should also be encouraged to extend the supply of purified effluent to Kuisebmond and Narraville, so that these areas can also be landscaped.
“What people thought affected the environment because to some extent it shaped their behaviour. And of course, the changing environment played a part in affecting what people thought.” (John McNeill, 2000, *Something new under the sun: An environmental history of the twentieth century world*, W.W. Norton: New York)
Walvis Bay has never been kind to human settlement - desert on the one flank, icy ocean on the other; little fresh water, not much vegetation. But humans settled nonetheless, despite the adversity, lured by the only sheltered bay on Africa’s south-western flank: teeming with fish.

For humans to have survived here, their relationship with their environment has inevitably been one of muscular rivalry – sometimes subdued by nature, sometimes subduing nature. The story of Walvis Bay has largely been one of humans extracting resources from the environment for short-term profit, with little consideration for the future. The result has been massive environmental damage, whose effects continue to reverberate. The whales are gone, and the pelagic fisheries have been seriously compromised. The desert is scarred, the lagoon silted, the bay polluted, the wetlands under threat.

Painful experience has brought Walvis Bay a better understanding of the complex relationship between man and nature, the resource limits of the environment and its capacity to absorb human waste. But there is a further dimension to the problem. Rampant poverty and unemployment in the Walvis Bay area demand urgent economic growth. The challenge ahead is to make economic development possible without undermining the environment. This will require a new environmental policy to address these issues.

**OCEAN**
Marine resources need to be exploited cautiously, so that fish populations have time to replenish. Quotas need to be constantly weighed, and policed. Water quality in the bay must be monitored, and marine pollution controlled. More environmentally efficient technologies will cut down on pollution.

**DELT A**
Extraction from the aquifer should not exceed replenishment rates. There is an urgent need for water conservation by both residents and industry. Alternative sources of water, such as desalination, need to be explored.

**LAGOON**
The siltation process can be slowed by allowing the tides to flush the lagoon. Human interventions such as roads or additional salt pans, which interfere with the dynamic action of the waves in the tidal flats, need to be pursued with caution.

**BAY**
Dredging of the harbour needs greater sensitivity to the adverse effects on the lagoon. Pollution from visiting ships must be arrested.

**TOWN**
Urban planning measures can address wasteful land use patterns. Regulations are needed to prevent wasteful consumption of resources, reduce air pollution from the fish factories and recycle the town’s waste.

But there are causes for optimism. An environmentally sustainable policy for Walvis Bay need not be a pipe dream. It is eminently achievable with relatively modest effort, without compromising growth or the quality of human lives. It calls for a conscious commitment to doing things differently. It needs innovative and more efficient technologies. It requires small, strategic concessions today, as the price of avoiding large, traumatic ones later. As McNeill puts it: “We could make our own luck today, instead of trusting to luck.”

This points to the need for sensitive environmental management so that human actions now do not compromise human activity in the future. This may involve small compromises - bringing in less fish, recycling more water, dumping less effluent in the bay, transforming land use patterns ... Such small inconveniences now, may have huge benefits tomorrow.
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INTERVIEWS

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