Economic Resources and Activities
The coast is far more valuable economically than the small population along Namibia’s seaboard suggests, and it is fair to say that the coast is the heart of the Namibian economy. It is here that high proportions of Namibia’s income are derived from mining along the coast, trade through its harbours, marine fishing and fish processing, and tourism. These and other economic activities form the subject of this chapter.

While the coastal economy has grown rapidly over the past century, the values of many of its natural resources and the associated economic activities have risen and fallen. For instance, after more than 100 years of mining, onshore diamonds have been largely depleted, tourism and uranium extraction are comparatively new industries on the rise, while the fishing industry has switched several times to focus on new species once the stocks of previous target species fell.

Namibia’s national economy as a whole is largely based on the use of natural resources. The four main sectors – in order of contribution to national Gross Domestic Product (GDP) – are mining, tourism, agriculture and fishing. In 2008, the mining industry countrywide contributed nearly 16% to the Namibian economy and fishing (including processing) about 5%. Most mining and all fishing is along the coast where tourism also generates considerable revenue. Accurate estimates for tourism’s contribution to GDP are not available, but the total contribution – indirect and direct – across the whole country was estimated at 14.2% in 2006. Even though the estimates are for 2006, the overall patterns and orders of magnitude have not changed.

The following figures provide estimates of different sectors’ contributions to Gross National Income (GNI), which is very similar to GDP (see the Glossary). Even though the estimates are for 2006, the overall patterns and orders of magnitude have not changed.

- **Diamond mining**: N$4,433 million and about 53,000 jobs
- **Commercial fishing**: N$4,168 million and approximately 41,500 jobs
- **Guano harvesting**: N$6 million and six jobs
- **Sealing**: provided some 15–20 jobs
- **Salt**: N$11 million and some 128 jobs
- **Recreational angling**: N$56 million and 270 jobs
- **Mariculture**: N$17 million and about 150 jobs

Figure 41. Major mineral resource areas and mining activities in the coastal zone of Namibia.
The mining sector of Namibia was very much the backbone of the economy for many decades before national independence, with taxes and royalties from mining providing the lion's share of national revenue. Amongst the most valuable mineral resources were diamonds, uranium, copper, lead and zinc as well as gold, together with some semi-precious gemstones. The 1990s, however, saw a general decline in mining activities and revenues because some resources were exhausted or mines became uneconomical as a result of declining demand and prices. For example, demands for tin, uranium and copper dropped substantially, which led to the closure of some mines such as the copper mines at Tsumeb, Kombat and Matchless, and the Uis tin mine; the downsizing of others, Riising uranium mine, for instance, or shifts to new reserves, such as the development of offshore diamond mining by Namdeb.

However, these trends have been reversed due to greater demand recently for some of these minerals. The best examples are the high uranium and copper prices that have led to resurging interest in these commodities in Namibia. Certain old exploration projects have been reborn and old mines reopened.

**Diamonds**

Namdeb Diamond Corporation is Namibia’s largest mining company and diamonds have been mined in Namibia since they were discovered in 1908 (see page 117). However, after the first 90 years of operation, the stock of onshore diamonds was largely depleted. Namdeb consequently shifted its mining operations to the marine environment during the 1990s. Overall production of diamonds increased in the 2000s but then faced a dramatic collapse in 2008 as a result of a global economic recession. In 2009 the production of marine and onshore diamonds fell to less than 1 million carats after more than 2 million carats had been produced during each of the previous three years. Production recovered during 2010 when a total of 1,471,000 carats was recovered.4

Namdeb remains the single most important player in the Namibian economy having paid N$1.765 billion in tax in 2008. Other substantial diamond mining operations include Sakawe Mining Corporation, the successor to the Namibian Minerals Corporation (NAMCO), which produced 145,125 carats from the southern Namibian offshore concessions in 2007, for example.5 Other marine and onshore diamond mining operations further north on the coast have been less successful. This is to be expected if the current understanding of the source of diamonds coming from the interior of southern Africa via the Orange River, as described in the following sections, is indeed correct.

While relatively few diamonds are found per unit of ore mined, the quality of diamonds found is exceptionally good with over 95% being of gem quality. The volume of ore is also huge, which has allowed mining to continue unabated for more than 100 years. This rich supply on the Namibian coast is a consequence of a remarkable combination of circumstances. Originating from kimberlites in the interior of southern Africa, the diamonds have been transported down the Orange River to the sea over the last 45 million years. Since high quality diamonds are hard and extremely durable, the better quality ones have survived the long journey downstream while those with defects or inclusions have been broken and effectively filtered from the supply carried down the Orange.

Many diamonds have been mined from gravel terraces on the banks of the Orange River in places where they were trapped, for example in potholes. Other diamonds that made it all the way into the sea first settled on the wide continental shelf off the mouth of the Orange River. The combined forces of the Benguela Current and the strong southerly wind then moved the diamonds northwards and back towards the shoreline. The J-bays described in the section on landshapes (see page 53) provided excellent trap sites for diamonds, while others were carried onshore by the south-westerly winds. Some of the richest deposits found were in coastal valleys that are fortuitously aligned parallel to the wind direction. As a result, the diamonds were funnelled by the winds to form concentrations in the bottoms of the valleys.
Overall, the volume of diamonds progressively decreases northwards from their source at the Orange River mouth (Figure 42). The size of diamonds also declines up the coast because the larger, heavier stones settle closer to the river mouth. The so-called diamond gap along the central coast is probably a simple consequence of the coastline’s orientation. Thus, diamonds carried north by the Benguela Current bypass the central coast, only getting washed up on the northern shores. All stones carried that far from the Orange River mouth are extremely small.

During the last ice age some 18,000 years ago when sea level was around 120 metres below modern levels, diamonds were transported further westwards than they are today. The shoreline that developed then is the target for marine offshore mining today.

Soon after the discovery of diamonds the German colonial government proclaimed the so-called Sperrgebiet (the ‘forbidden zone’), an area from 26°South to the Orange River and extending approximately 100 kilometres inland. Although this proclamation was intended to protect the diamond reserves by restricting access to the area, it also protected a large area of desert habitat, much of which is still relatively pristine. Most of this area is now included in the newly proclaimed Sperrgebiet National Park (see Figure 3, page 17).

Onshore resources of diamonds have largely been depleted, and mining activity has moved into the offshore areas where various types of mining techniques are used. All the methods entail sorting through gravel to find the diamonds.

- In the surf zone and in water depths up to 30 metres, divers use suction hoses to suck up gravels onto the beach or onto small boats.
- Mid-water mining from 20-100 metres is where gravels are lifted by an airlift system in steel cylinders to a large vessel.
- Deep-water mining at water depths greater than 100 metres uses a seabed crawler or large diamond drills to remove and suck up the loose gravel through flexible hoses.

Figure 42. Diamonds along the coast were washed down the Orange River and then carried northwards by the Benguela Current and strong southerly winds. As a result, the size and concentration of diamonds decreases northwards of the river mouth. The numbers next to the diamond symbols in the south are the average carat sizes of the stones.

Marine diamonds now constitute about 64% of Namibia’s total diamond production, with the remaining 36% being mined largely from onshore beach deposits. While mining has occurred at various localities all the way to the Kunene River, mines in the northern areas have produced poor results because the few stones found there are so small. Nevertheless, some exploration licences for diamonds are still held both onshore and offshore along the northern coast.

Mining on the coast is challenging. Sea walls are built to restrain the sea and mining takes place below sea level, down to the bedrock. Constant maintenance of the sea wall is needed but once mining is completed in an area the sea is allowed to return. Ponds close to the shore that may remain after mining are potential locations for mariculture.

Today much of the mined area is rehabilitated.
Guano

Guano from sea-bird breeding islands has been harvested along the Namib coast since the 1840s and, between 1843 and 1991, 869,332 tonnes of guano was scraped and bagged off most of the islands (see Figure 1, page 6), with disastrous consequences for much of the islands' birdlife. Most of the guano was from several small islands off southern Namibia, but in 1931 a platform covering 1.7 hectares and now known as Bird Rock was built between Walvis Bay and Swakopmund to serve as an area on which birds could roost, nest and defecate. The guano is cleaned to remove feathers and other debris, ground to a powder, and then exported to Belgium. The platform yields approximately 650 tonnes of guano annually. Artificial guano platforms have since also been built at the salt works north of Swakopmund (4 hectares) and at Cape Cross (two sites with a total combined extent of 8 hectares).

In 2002, harvests from artificial platforms – which are of a higher quality than those from islands – amounted to some 1,600 metric tonnes. Nowadays, these platforms and some harvesting of guano on Ichaboe and certain islands in Lüderitz Bay cumulatively produce 2,000 to 3,000 tonnes per year. The Ministry of Fisheries & Marine Resources controls the exploitation of guano which is exported for use as fertiliser.

Phosphates

Guano consists largely of phosphates, but other phosphate resources are known from the Namibian offshore area, in particular off Cape Frio and Meob Bay. The phosphate resources lie in water that is 180-300 metres deep in places that are close to upwelling centres (see page 36). The resources have recently attracted new interest and appraisal for development, but the viable exploitation of this high bulk, low value resource in a difficult marine mining environment will be a considerable challenge. Phosphates are used in the fertiliser industry. Their processing and extraction can have harmful environmental consequences as they contain heavy metals such as cadmium, lead and uranium.

Salt

Salt is a direct product of the coastal environment, and its extraction by the evaporation of brine is a rare example of renewable exploitation of a mineral resource. The first salt production along the coast was from fossil rock deposits formed in the coastal pans, but most production is now derived from the evaporation of sea water in ponds and natural pans (see Figure 41, page 137). A series of ponds are used to concentrate the sea-water, the water being pumped from pond to pond until a concentration of about 28.8% NaCl (sodium chloride) has been reached, which is the concentration at which salt crystals form. The different colours of the ponds are a reflection of the salt concentration as well as the plant and invertebrate species that inhabit the ponds.

The bulk of salt production is shipped to South Africa, but West Africa is a growing market where it is used for human consumption, as a feed supplement in agriculture and in the chlor-alkali industry.

Most salt production currently takes place in Walvis Bay; at Panther Beacon in Swakopmund, and at Cape Cross. The Walvis Bay operation employs 110 people and produces some 700,000 tonnes of coarse salt per year, most of which is used in chemical manufacturing. Panther Beacon produces some 75,000 tonnes/year and Cape Cross around 30,000 tonnes/year. The salt is largely used as a livestock feed supplement, for human consumption and in the chemical industry.

By February 1846 all the guano (about 200,000 tonnes) had been removed from Ichaboe Island, producing an income of £2 million, equivalent to about N$2.27 billion today. Ichaboe now produces about 500 tonnes of guano annually.
Uranium

Uranium is the heaviest natural element and is used globally to produce nuclear energy, mainly to fuel power stations. Uranium is ubiquitous in the earth’s crust and is generally found in the highest proportions in granites, a rock type common in central Namibia. Uranium concentrations in igneous rocks such as granites are typically around 3 parts per million, but sedimentary processes can concentrate these low quantities by several orders of magnitude. The bulk of commercially viable uranium deposits in the world are thus found in sedimentary ore.

The plains and dune fields of the central Namib have significant concentrations of uranium in both sedimentary and igneous rocks, but igneous rocks in the Damara Group (see page 50) of the central Namib have unusually high levels of uranium, some of which has been eroded and is now concentrated in sedimentary deposits near the coast. Rössing is one of the few operating uranium mines in the world that exploits a purely igneous source of uranium. The U235 isotope which is required for nuclear fission only makes up 0.71% of naturally occurring isotopes while U238 forms the bulk of the remaining 99.28%. In 2008 Namibia produced 5,094 tonnes of uranium oxide (yellow cake) which placed it fourth in world uranium production after Kazakhstan, Canada and Australia.

Rössing mine began its operations in 1976, but faced challenges during the 1990s when uranium prices fell as low as US$7/pound from US$45 (Figure 43). Consequently, Rössing reduced its labour force from over 3,000 in the late 1970s to just over 800 people in late 2004.10 The recent price recovery has extended the viable lifespan of the mine. Rössing remains a major contributor to the Namibian economy, having paid N$650 million in taxes in 2008 and N$1.45 billion to local suppliers of goods and services.11

The rise in global demand for fuel for nuclear power and the subsequent increase in the price of uranium led to the development of new mines in the central Namib. The first of these was Langer Heinrich mine, which began production in 2007. The ore grade is higher than at Rössing and its sedimentary uranium is easier to mine because the ore is near the surface. More new uranium mines are currently being evaluated; two new mining licences have been awarded (Trekkopje and Valencia) and several exploration projects have reached the stage of doing feasibility assessments at an advanced level.

A recent study predicts that there could be between five and seven uranium mines operating in Namibia by 2020.13 However, the global uranium market remains volatile, and the demand for new sources of uranium is variable. On the one hand, new power stations are certainly needed, but the need for new resources of uranium is less certain because known resources are sufficient to provide fuel for current and new reactor development until at least 2030.14

While all the existing and proposed uranium mines are some distance from the coast, they will have significant impacts on demands for water, electricity, housing and other infrastructure and services. There are also grave concerns that groundwater may be polluted. Moreover, several mines and uranium prospects are within the Namib-Naukluft Park, and many people object to conservation areas being exploited for mineral resources and the consequent negative environmental impacts.

Against these expected environmental impacts are the expected economic benefits of the growing uranium industry. In addition to tax revenues and jobs created within the mines, a host of other developments are predicted: more desalination plants to

Figure 43. The price of uranium since 1967 expressed in terms of US$ per pound of uranium. The values were those current at the time, and do not account for inflation. In fact, peak prices in the late 1970s were equivalent to about US$115 in 2007.12
produce potable water, a new power station at Walvis Bay, the development of plants to produce acid and alkaline chemicals, the expansion of the port at Walvis Bay, the revitalisation of the Export Processing Zone, and the overall urban growth of Walvis Bay and Swakopmund, amongst others.

In summary, it seems certain that uranium will bring benefits and curses to the coast. Just how big the positives and negatives will be – and how we manage them – remains to be seen. It will be a particular challenge to the controlling ministries of Mines & Energy and Environment & Tourism to please the beneficiaries of the mines and minimise environmental damage.

**Dimension stone**

The physical processes that accompanied the formation of the Damara rocks (see page 50) helped produce folded marbles and coarse igneous rocks such as granite, which are now mined as dimension stone. The marbles and granites are largely used for building cladding and floor tiling. Many of the blocks of marble and granite are exported, which is facilitated by the local presence of suitable infrastructure: roads, railway lines and the Walvis Bay harbour. Tiles are also produced locally at factories in Karibib and Omaruru.

While the quarrying of dimension stone is a small industry, its effects are often highly visible as the scars of excavations on the surface of the desert. Numerous claims are held by operators of various sizes, and environmental controls over small-scale operators are typically not stringent; certainly not as strict as those over larger scale operators which are better financed, have rehabilitation plans and have shareholders to whom the mines account.

**Amethyst**

Amethyst crystals are a highly prized variety of quartz that is deep purple to pale violet, colours that are derived from impurities of ferric iron compounds. The crystals grow from liquids in cavities that formed when pressure was released in volcanic magma (rather like the bubbles that take shape in fizzy drinks when the top is removed). Well-formed crystals are valuable in their own right as mineral specimens, while other crystals are cut, polished and used for jewellery.

Amethyst is found as geodes or druses in volcanic rocks which are mined in the Skeleton Coast Park at Sarusas (Figure 41, page 137). Exactly the same rocks are found in Brazil where there are more extensive amethyst resources, a link that provides further evidence for southern Africa and South America having being joined in the former Gondwana continent (see page 50).

Petroleum

At the time of writing this book, methane in the Kudu gas field is the only known oil or gas field in Namibian waters that has potential commercial value. The gas would most probably be used to generate electricity if and when economic considerations allow. Four major sedimentary basins off the coast (Figure 41) that developed after the breakup of the Gondwana continent (see page 50) are currently the major targets for exploration. Eight exploration wells have been drilled outside of the Kudu field and positive indicators have been found in some of the wells. The chances of more valuable discoveries of petroleum reserves being made are therefore reasonable. The four basins contain all the major conditions and elements required for petroleum formation, which are:

- rocks containing organic material from which the hydrocarbons originate;
- heat to convert the organic material into liquid petroleum;
- permeable reservoir rocks which can absorb the petroleum;
- trap sites where the petroleum can accumulate in the reservoir rock; and
- impervious seals to prevent the petroleum from escaping.

**Tin and tungsten**

Currently no exploration or mining for tin and tungsten occurs in Namibia, but the remains of old mines at places such as Strathmore, Uis and Brandberg West (Figure 41) are vivid reminders of the volatility of the mineral business. In the past both mining and exploration for tin was vibrant in Namibia, but all operations ceased after 1989 when the price of tin halved and its extraction was no longer cost-effective. All that is left are the scars of the mines. Most of the tin is found in pegmatites or quartz veins associated with bodies of granite. Tungsten is often found with the tin and may be a resource to be exploited in the future.

**Economic Resources and Activities**

The drilling rigs used in the exploration for petroleum are in effect small villages generating their own power, desalinating sea water and providing accommodation and entertainment for the crew on board.

Accumulations of heavy minerals such as zircon, rutile and ilmenite are found worldwide on beaches and sand dunes. These are often mined as a source for zirconium and titanium as well as tungsten and rare earth elements. Heavy mineral sands can be seen accumulating on the modern Namibian beaches and are recognised by a characteristic black (magnetite) or pink (garnet) colour. No other commercial heavy mineral sands have been found in Namibia although exploration for these has taken place.
LIVING RESOURCES

The high biological productivity of the Benguela system supports a vibrant industry off Namibia and has done so for the last 60 years. Over 20 species of fish, lobsters and crabs are commercially exploited, and between 1999 and 2007 the industry contributed an average of 6.6% to the national GDP. In 2008, the value of fishing, onshore and offshore processing totalled N$3,410 million. In recent years, the fishery has landed between 0.4 – 0.6 million tonnes of fish, crabs and lobsters.

<table>
<thead>
<tr>
<th>Species</th>
<th>2009</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horse Mackerel</td>
<td>230,000</td>
<td>17,000</td>
</tr>
<tr>
<td>Hake</td>
<td>135,500</td>
<td>8,500</td>
</tr>
<tr>
<td>Pilchard</td>
<td>17,000</td>
<td>2,700</td>
</tr>
<tr>
<td>Monkfish</td>
<td>8,500</td>
<td>350</td>
</tr>
<tr>
<td>Deep-sea Red Crab</td>
<td>2,700</td>
<td>6,800</td>
</tr>
<tr>
<td>West Coast Rock Lobster</td>
<td>350</td>
<td>3,900</td>
</tr>
<tr>
<td>Tuna</td>
<td>33,700</td>
<td></td>
</tr>
<tr>
<td>Kingklip</td>
<td>33,700</td>
<td></td>
</tr>
<tr>
<td>Other fish species</td>
<td>33,700</td>
<td></td>
</tr>
</tbody>
</table>

The fishing industry (which includes the harvesting of crabs and lobsters) is the largest employer on the coast, particularly in the two major ports of Lüderitz and Walvis Bay. There are 25 fish processing facilities in Namibia, with 7 in Lüderitz and 18 in Walvis Bay. About one-third of the total value of the fishing industry is earned by onshore processing in these plants. Some 97% of all fisheries products are exported, 70% of which currently go to Spain. Products are also marketed elsewhere in Europe, Asia, the United States and southern Africa.

While the fishing industry has contributed much to the Namibian and coastal economy, it has also faced severe challenges over the years. The worst of these was the total collapse of the Pilchard (also known as Sardine) fishery. Bumper harvests of pilchard in the 1960s, sometimes of over one million tonnes per year, halved during the 1970s and then crashed in the early 1980s (Figure 45). It is frequently stated that the declines were due to over-fishing—often by foreign vessels fishing in Namibian waters— but environmental factors also may have been important. For example, pilchard and other marine resources were hard hit by major Benguela-Niño events in 1984/1985 and 1994/1995 (see page 41). These warm water intrusions led to a loss of oxygen in the seawater, while the warm water itself caused some species to abandon their normal spawning grounds and therefore not to breed.

The fishing industry also suffered from the effective collapse of stocks and harvests of Anchovies and West Coast Rock Lobsters, while harvests of hake are now less than half of what they were in the 1970s (Figure 44). Orange Roughy stocks have also decreased substantially and in 2008 the industry agreed to a moratorium on this species. In short, substantial proportions of Namibia’s marine resources have been lost, and the fishing industry remains in a difficult position which could become precarious when severe Benguela-Niño events occur again. The industry has also had to weather the effects of high fuel prices, unfavourable exchange rates and the global economic slow-down in the first decade of the 21st century.

The Ministry of Fisheries & Marine Resources has implemented strict controls over harvests since independence in 1990, when Namibia established the 200 nautical mile (approximately 370 kilometres) Exclusive Economic Zone (see Figure 2, page 8) to curtail poaching by foreign fishing fleets. Catches are now limited by annual quotas, known as Total Allowable Catches (TAC) for different species with the aim of allowing stocks to recover to levels where sustainable yields in the long-term are possible. In addition, the Ministry has attempted to boost Namibian ownership of the industry, but this is a challenging process since ownership of the fishing companies is not always clear.

Since fish populations move north, south and westwards out of Namibian waters, international co-operation is required to ensure sustainable harvesting. Two cross-border projects focusing on the Benguela, the Benguela Current Large Marine
Ecosystem Programme (BCLME) and the Benguela Environment Fisheries Interaction and Training Programme (BENEFIT), have helped spawn the newly formed Benguela Current Commission (BCC) which aims to foster management of the marine resources between Angola, Namibia and South Africa.

Fish are caught using three main methods:

- purse seine nets to catch pelagic species (mainly Anchovy, Sardine and Juvenile Horse Mackerel);
- trawled nets which catch demersal fish closer to the seabed (hake, Orange Roughy, adult Horse Mackerel, Monkfish, Alfonzino, West Coast Sole, Kingklip and some Snoek), and
- long-line and pole fishing for Southern Longfin Tuna (or Albacore), Swordfish, pelagic sharks, Silver Kob and Steenbras.

There are two species of hake: Deep-water and Cape Hake, and both their catches have also declined from roughly 500,000 tonnes each year in the 1970s to less than 200,000 tonnes in recent years. Catches of Horse Mackerel declined by about 50% over the last 30 years, but in this case the decrease was partly due to a reduction in fishing effort.

In terms of tonnages, hake and Horse Mackerel account for over 80% of production each year. While Horse Mackerel catches are bigger, income from hake is higher because of onshore processing. The hake fishery is also by far the largest employer in the sector. In 2006, about 18,000 jobs were directly or indirectly due to the onshore processing of hake and other species.

Above: One-third of the total value of Namibia’s fishing industry is earned by onshore processing in about 50 processing plants at coastal towns.

Above right: Purse seiners target pelagic species near the surface. The seiner circles the fish shoal with a deep curtain of netting and then closes the bottom of the net by hauling a wire running from the vessel through rings along the bottom of the net and back to the vessel.

Both Monkfish and Orange Roughy live at great depths of several hundred metres and more, from where they are caught in bottom-trawled nets. Harvests of Monkfish have fluctuated between about 5,000 and 15,000 tonnes every year, while those of the very long-lived Orange Roughy have decreased substantially and in 2009 there was a TAC of zero for this species.

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Recreational angling is important both as a use of marine resources and in attracting tourists. More than 90% of angling takes place in the Dorob National Park, previously the West Coast Recreational Area. Most of the remaining coastline is closed to recreational fishing to provide the most sought-after species with important refugia.

Recreational angling is an activity undertaken almost entirely by Namibians (inland visitors to the coast 36%, local coastal population 16% of fishermen) and South Africans (46% of all fishermen). The estimated value of recreational fishing to the economy grew from about N$26 million in 1999 to N$56 million in 2006. Most fishing takes place from the shore, though ski-boats are also used for angling beyond the surf. The most frequently landed bonefish are kob (mostly Silver Kob but also occasionally Dusky Kob), West Coast Steenbras, Galjoen and Blacktail. Sharks are also favoured catches, including the Copper Shark, Spotted Gulley Shark and the Smooth-hound. A limited amount of recreational crayfish harvesting by snorkelling takes place from the shore in the central area. Recent indications are that populations of the main species taken by recreational fishers – Silver Kob and the West Coast Steenbras – have declined.

The development of farming shellfish, seaweed and crustaceans, known as mariculture (or often marine aquaculture), is widely regarded as a sustainable way of generating wealth, foreign investment and earnings, as well as employment. However, the costs of starting and running such farming ventures are high, and skilful management is required if they are to be successful.

Currently, mariculture is dominated by the production of Pacific and European oysters in the sheltered bays of Lüderitz and Walvis Bay and in ponds north of Swakopmund. There is further potential for using ponds left behind by diamond mining in the Sperrgebiet. The oysters are held in baskets suspended from rafts and long lines, and are moved between areas of different depths and temperatures as they mature. Due to the rich supply of food available in the Benguela, Pacific Oysters can reach harvest size in as little as 8 months (compared with 3 years in northern Europe).
Oyster production earned about N$26 million in 2009 compared to N$35 million in 2007. The lower production in 2009 followed major failures in 2008 when red tides killed a high proportion of the farming stock of oysters, causing the temporary closure of farms in Walvis Bay and Swakopmund. Most Namibian oysters are exported to South Africa, China and Singapore.

One abalone farm was started in Lüderitz. Its yield of 15 tonnes in 2009 was worth over one million Namibian dollars. The farm had 15 employees. Seaweed is harvested near Lüderitz to produce agar, a gelatinous substance used in foods. Currently, about one quarter of the production is cultured while the remainder is harvested from wild stocks. About 120 tonnes of dry-weight is produced from approximately 10 hectares of sea weed under cultivation. The industry now employs 50 people.

Sealing
The harvesting of Cape Fur Seals off the Namib coast has a history that probably goes back to the early 1800s when the animals were first exploited for their pelts, which were then salted, dried and sold primarily to China. Controls over harvesting were introduced in 1922 as a result of over-exploitation, and seal harvesting has become a contentious, ethical issue in recent years. Animal rights groups often protest the culling, particularly the clubbing to death of pups. On the other hand, fishermen regard seals as competitors and a threat to their livelihoods. Many countries have now banned the import of products from Cape Fur Seals.

During the mid-1990s, changes in the distribution and abundance of fish caused by the Benguela-Niño event limited the availability of prey over much of the seals’ range. An estimated 300,000 seals died as a result. The major prey of the seal is the Pelagic Goby, a non-commercial species, but the seals also feed on Horse Mackerel and juvenile hake. It has been estimated that seals in the Benguela consume about one million tonnes of fish per year.

Nowadays, the seals are harvested for leather, fashionable garments for women (the skins of pups) and aphrodisiacs for men (the genitalia of bulls). Some blubber is produced while bone-meal and pet food have also been manufactured. In addition, the colony at Cape Cross is a major tourist attraction.

The annual TAC for the pup harvest has ranged in recent years between 34,000 in 2002 to 85,000 in 2006, when 6,000 bulls were also allocated for harvesting. Almost 35,000 seals were harvested in 2007. Most harvesting occurs at Atlas Bay, Cape Cross and Wolf Bay (see Figure 1, page 6).
As entry and exit ports for many goods moving into and out of Namibia and beyond, Walvis Bay and Lüderitz are important to the Namibian economy. The volume of trade increased substantially with the establishment in the year 2000 of the Walvis Bay Corridor Group through which Namibian harbours provide access to neighbouring countries via the Trans-Cunene, Trans-Caprivi, Trans-Kalahari and Trans-Oranje corridors. This public-private partnership, which includes Lüderitz, was set up to facilitate trade in southern Africa. Lüderitz mainly serves the fishing and marine diamond mining industries with occasional calls for servicing oil rigs drilling off the Namibian coast.

Trade through the coast will be further enhanced by the intended establishment of a dry port facility for Botswana in Walvis Bay, while the purchase of a floating dry dock will enlarge Walvis Bay’s capacity to service large vessels such as oil rigs. There are also plans to increase the container handling capacity at Walvis Bay from 140,000 to 500,000 containers per annum.31

Namibia promulgated the Export Processing Zone (EPZ) Act in 1995 to stimulate trade and development. EPZ status provides tax concessions for investors who wish to manufacture goods for export beyond the customs union. After starting strongly, three of the five EPZ companies at the coast suspended business in 2009. The other two operate only when orders are received.

There are very limited opportunities for conventional agriculture anywhere on the coast. Research into mushroom cultivation is underway at the UNAM Research Centre in Henties Bay (Above) while asparagus (above right) and olives (right) are high-value crops cultivated on a small scale in the Swakop River valley.

Chapter 6 Economic Resources and Activities

TRADE

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Figure 47. Routes and potential markets available through Walvis Bay.

Natural harbours are rare on the Namib coast and the two most protected bays, Walvis Bay (left) and Lüderitz (above), are Namibia’s only two ports. These are invaluable gateways for trade, not only into Namibia but also the rest of southern Africa. Walvis Bay’s location halfway along the coast of Namibia and close to international shipping routes gives it a strategic advantage for sub-continental trade. The port handles approximately 3,000 vessel calls per annum and some 5 million tonnes of cargo.32
TOURISM

Tourism has been the fastest growing sector of the coastal and national economy over the past 20 years. Much of the growth has been in numbers of foreign visitors, to whom the coast’s attractions are an export commodity which earns income for the coast and Namibia as a whole. The number of international tourists visiting the coast for leisure and business was estimated at about 422,000 in 2007.33 Nation-wide, the number of tourists increased more than threefold from 254,978 in 1993 to almost 930,000 in 2007. An estimated 474,000 people visited Namibia in 2008 purely for holidaying – about half of all foreign visitors to Namibia.34 Of the three most popular destinations for tourists, two are along or close to the coast: Swakopmund and Sossusvlei; the third is Etosha National Park.

Additionally, the use of the coast as a holiday destination for wealthier Namibians has grown rapidly, and many people have invested large sums of money in their own houses at the coast. This has some interesting implications. For example, the coast has become a sink for surplus wealth; coastal land is a resource in its own right since land close to the sea – where the priciest homes are built – has the greatest value.

It has been estimated that tourism on the coast contributed N$2,300 million of Gross National Income (GNI) to the economy in 2006. About 8,350 jobs along the coast were then dependent on the tourism industry.35 The industry relies on three main services: (a) accommodation, (b) tour operators and agents and (c) other service providers such as car hire firms, air charters, craft sellers, restaurants and so on.

The predominant focus of tourism at the coast is on Swakopmund and Walvis Bay, where a wide variety of activities are available to satisfy many tastes. These include activities related to eco-tourism and adventure sports such as sky-diving and quad biking. Surprisingly little of the remaining coast is visited by tourists or, indeed, accessible to them (Figure 48). For example, the entire Skeleton Coast Park generated less than a million Namibian dollars in 2006, of which only 7% was contributed by tourists from beyond the SADC region.36 This is remarkable: the Park stretches some 500 kilometres and covers 17,450 square kilometres of what is arguably one of the most rugged and attractive coasts in the world, and yet it provides Namibia with less than one million Namibian dollars, roughly the value of one or two luxury cars.

The real value of film and television production lies not in the spending of production teams or the employment of local people but in the free publicity for Namibia generated by the movies and actors.37 The value of film and television production has not been measured, but it is a significant, though transient aspect of the coast’s economy. In recent years several new films and remakes have been produced using Swakopmund as a base, for example: Flight of the Phoenix, The Trail, 10,000BC, Beyond Borders and The Prisoner. The real value of film production lies not in the spending of production teams or the employment of local people but in the free publicity for Namibia generated by the movies and actors.38

Tourism to Namibia is second only to mining in contributing to the country’s economy, and is thus more valuable than agriculture and fishing. But tourism is a particularly fickle industry which can swing up and down in response to foreign exchange rates, the health of the global economy and safety concerns, for instance. Lucrative tourism also depends heavily on visitors getting value for their money, on good, clean and safe infrastructure, and on socio-political stability.
The ports at Lüderitz and Walvis Bay were originally developed in the 19th Century to provide access to the interior of Namibia. When Germany began colonising Namibia in the 1880s they had no natural harbour through which they could access the centre and north of the country since Britain had annexed Walvis Bay in 1878. The solution was to construct a jetty at Swakopmund. This was never fully developed and, in any case, became superfluous after World War I when South Africa, who had inherited Walvis Bay from the British, took administrative control of the whole territory in 1915. Swakopmund was then effectively left without a reason for its existence, and remained a sleepy holiday resort until the uranium boom of the 1970s brought it new development. Oranjemund developed purely as a mining town, while Henties Bay grew as a village for fishing holidays and retirement.

Of all the infrastructure and services required by each town, water has usually proved the hardest to provide. The whole coastal belt is extremely arid (see page 24). With the exception of Oranjemund, which receives water from an underground aquifer that is recharged by the Orange River, all other settlements are very far from any permanent surface waters. As a consequence, domestic and industrial users have relied totally on groundwater resources (Figure 49).

Lüderitz’s water is obtained from an ancient subterranean channel beneath the ephemeral Koushab River, some 100 kilometres north-east of the town.47 Judging from radiocarbon dating much of this water accumulated some 5,000-7,000 years ago and can reasonably be regarded as ‘fossil’ water. Although there is some recharge of the aquifer, inflows occur at rates that are lower than rates of abstraction.

INFRASTRUCTURE

Coastal tourism contributes substantially to Namibia’s tourism industry which directly and indirectly, supports some 72,000 jobs nation-wide.

Figure 48. Although Namibia’s coast offers amazing attractions, many of which are probably unique, very little of the coast can be seen by visitors. No accommodation is available along most routes on the coast and so visits are limited to day excursions. The map shows sites and roads that are currently open to tourism and recreation.

Omdel dam on the ephemeral Omaruru River.
The supply of water is perhaps the main challenge to development in the central coastal area. This is where demands are greatest, and where requirements for water are expected to grow considerably. About 12 million cubic metres are now used each year, mainly by Walvis Bay, Swakopmund and Rössing mine (Figure 50). Demand could grow by a factor of four over the next 10 years if all the new uranium mining activities in the central Namib that are presently proposed come to fruition (see page 144).

It is estimated that the groundwater aquifers in the central Namib can sustainably produce 18.2 million cubic metres per annum. This includes water in the Omdel recharge dam on the Omaruru River. The four major westward flowing rivers (Kuiseb, Swakop, Omaruru and Ugab) have the potential of yielding another 27.5 million cubic metres, but ways would have to be found to capture and store these additional river supplies. Doing so would be very expensive.

Current planning to meet the higher demand revolves around two measures. One is to reduce household and industrial consumption, while desalination provides another partial solution to this problem. Desalination is, however, expensive, technically challenging, and requires considerable electrical power. For example, the new desalination plant near Wlotskasbaken requires some 20 megawatts and will produce 20 million cubic metres of water per annum. About 14 million cubic metres of this water will go to the new Trekkopje uranium mine (see Figure 41), while the rest will be available for other users.

Much of the coast is tied into the national electricity grid which means that it faces serious supply challenges, along with the rest of the country. Currently the only electricity utility in Namibia – NamPower – has the capacity to generate 384 megawatts, while peak usage across the country is 480 megawatts. The deficit of power is therefore imported from neighbouring countries. The development of new mines and the desalination of water along the central coast will further increase demand.
Key points

- Economic activity along the coast has a long history of 'boom and bust' ventures which have focused, in turn, on whales and seals, guano, diamonds, offshore fishing, uranium, trade and tourism.

- The coast is at the heart of the Namibian economy since a high proportion of the national income is derived from mining along the coast; trade through its harbours; marine fishing and fish processing, and tourism.

- Mining contributes nearly 16% to Namibia’s economy, mostly through coastal diamond and uranium mining. Other coastal minerals which are currently exploited include salt, guano, dimension stone and amethyst.

- Tourism contributes about 14% to the economy, mostly through coastal diamond and uranium mining. Other coastal minerals which are currently exploited include salt, guano, dimension stone and amethyst.

- Commercial fishing, onshore and offshore fish processing contribute over 6% to the economy. Some 97% of all fisheries products are exported.

- The fishing industry has suffered from the effective collapse of stocks and consequent harvests of many species over the last few decades.

- Walvis Bay and Lüderitz are important entry and exit ports for many goods moving into and out of Namibia and beyond, and trade through the coast is likely to increase in the coming years.

- Growing economic activities such as mining are creating greater demands on coastal infrastructure and services such as the supply of water, electricity, education and housing.

Perhaps new ways of thinking about resources would be useful. Rather than concentrating on short-term profit, Namibian leadership might give more emphasis to long-term value. And rather than focusing on the protection of the coast so that most of it is little used, a more attractive future may be obtained from seeking uses that add value to the coast without detracting from its environmental wellbeing. In a similar vein, locking away much of the coast’s value behind the borders of national parks and other protected areas may not be the best way of protecting coastal resources. While they remain hidden from the country’s citizens, they are certainly not hidden from hungry entrepreneurs. These and other aspects of the coast’s future are discussed in the next chapter.

In closing…

In broad terms, the history of economic activity along the coast has focused, in turn, on whales and seals, guano, diamonds, offshore fishing, uranium, trade and tourism. Many of these resources and activities have produced a good deal of wealth, often due to boom activity as entrepreneurs rushed to exploit new commodities. However, many other ventures were scams or their patrons fled hastily when resources or markets failed. The exploitation of the coast’s wealth has also carried severe environmental costs. For example, guano harvesting made the islands less suitable for sea birds to breed – including those species producing the guano; unregulated fishing probably has decimated fish stocks; about 100 kilometres of shore has been overturned and stripped for diamonds, and uncontrolled tourism has had negative effects on the environment in some places.

Looking to the future some hard, searching questions should be asked. What lessons can be learned from the past, how long will new commodities last, in whose interest will they be exploited, and at what costs to inhabitants and the natural environment?