

Chapter 12: Current state of the environment in the Eastern Cape Province

12.1: Introduction

This 2004 Eastern Cape State of the Environment Report has described the environment of the Province through a variety of reporting themes, including:

- Atmosphere and climate;
- Biodiversity;
- Environmental management and governance;
- Freshwater;
- Human settlements;
- Land;
- Marine and coast; and
- Poverty.

There are many different ways in which this report could have represented the environment, and the method presented here is just one of these. The following sections provide a summary of the state of the environment in each individual reporting theme.

12.2: Atmosphere and climate

The Eastern Cape Province does not appear to be a priority area as far as air quality is concerned, as is evidenced by the number and type of industries in the Province. Monitoring of air quality in the Eastern Cape Province is performed on a fragmented basis as no co-ordinated monitoring network exists. Monitoring is currently concentrated in and around the Port Elizabeth area, as was recently started in the East London area as well. No comprehensive assessment of air quality in the Province is therefore possible. Where data exist, only very limited assessments of localised air quality can be done. Available data indicate that both sulphur dioxide and nitrogen dioxide levels in the Port Elizabeth area are below World Health Organisation guidelines (WHO, 1999). Monitoring of particulate matter in specific areas (Motherwell, Coega) has shown some exceedances of both South African and United States Environmental Protection Agency (US-EPA) guidelines. However, construction activities taking place in the vicinity of the monitoring could have contributed to this (Guastella, 2003).

Little information is available on clinic admissions for respiratory infections. The limited information that was available (mainly from the Nelson Mandela Metropolitan Municipality (NMMM)) shows that acute respiratory rates as well as lower respiratory infection rates in children under 5 years of age were lower in the Eastern Cape Province as compared to the KwaZulu-Natal Province (DOH, 1998).

The majority of households in the Eastern Cape Province, particularly in rural areas, rely on energy sources such as paraffin and wood for domestic purposes. Indoor air pollution is therefore a concern in the area, although it has not been quantified. A study in South Africa involving informal households that used mainly paraffin for cooking revealed that sensitive individuals in all of the households were at risk to adverse health effects from exposure to NO₂ (Muller et al., 2003). There has been an increase in the number of households using electricity from 1996 to 2001. Electricity, where available, is mostly used for lighting purposes only.

12.3: Biodiversity

The Eastern Cape Province comprises seven different biomes, of which the Grassland, Nama Karoo, Thicket and Savanna biomes are the most extensive (DEAET, 2003). A total of 316 threatened plant species are found in the Province, most (23%) occurring in the Thicket biome. However, the Forest and Fynbos biomes contain the highest number of threatened plants per unit area. There are three centres of endemism in the Province, the Albany centre (covering a large area in the centre of the Province), the Drakensberg centre (covering the Senqu and Elundini municipalities in the north-east), and the Pondoland centre (covering the Port St Johns and Mbizana municipalities in the east). The Province is also home to four endemic freshwater fishes, eight threatened marine fish species, six threatened frog species (four of which are endemic) and 19 threatened reptile species (of which 18 are endemic). Areas of reptile and frog endemism include Algoa Bay and the Amatole mountain range.

More than 10% of Eastern Cape's surface area is conserved in some way, but only 4.3% is formally protected as National Parks or Provincial conservation areas (DEAET, 2003). Once the State forests have been transferred to the Provincial conservation authority and a number of mega-parks have been developed as planned, this figure will increase substantially to more than 16%. The distribution of protected areas is highly skewed; 48% of Local Municipalities have no protected areas within their boundaries, and many of these municipalities contain rare, threatened or vulnerable species. In contrast certain municipalities contain few rare, threatened or vulnerable species but are well covered by protected areas (DEAET, 2003). Protected areas are crucial to the conservation of all species and ecosystems in the Eastern Cape Province, and are supported by well managed unprotected areas.

The main threats to biodiversity are invasive alien plants that threaten the coastal zone and mountainous areas; land transformation due to cultivation and monoculture; over-grazing due to land shortages and uneven distribution of people; over-use of natural resources, particularly medicinal plants; a low awareness amongst the public of the national and world-wide importance of Eastern Cape's biodiversity; and the weak capacity of provincial and local government to enforce conservation legislation and raise public awareness about biodiversity (DEAET, 2003).

12.4: Environmental management and governance

Environmental management and governance in the Eastern Cape Province is the responsibility of all stakeholders who have an impact on the environment. The three key stakeholder groups that have a significant role to play in environmental governance in the Province are the provincial government through the Department of Economic Affairs, Environment and Tourism (DEAET), local government through municipalities and the private sector.

A review of the commitment and performance of these three stakeholder groups suggests that there are some positive actions being taken to manage the environment. These include the budget and personnel within DEAET focused on environmental management as well as the restructuring that is occurring within the Department to respond to changes in national environmental policy (Sokupa, *pers comm.*, 2004). From a private sector perspective, there are some industries that are showing their commitment to environmental management through the introduction of environmental management systems in their operations (SABS, 2004; van Heerden, *pers comm.*, 2004).

However, there are still many opportunities for improvement in environmental management and governance in the Eastern Cape Province. Notable areas include the integration of

environmental management as a priority issue at the local government level. At present, it would appear that environmental management is not perceived as a priority and there is little integration of issues into the Integrated Development Plans of municipalities (Ramasar, 2004). At a provincial level, the enforcement and compliance monitoring of Environmental Management Plans and other regulatory processes is not being carried out effectively (Sokupa, *pers comm.*, 2004). This is an area which requires greater attention to ensure that Provincial policies are being implemented. As the enforcement and compliance monitoring is weak, it is also difficult to judge whether all industries within the Eastern Cape are following good environmental management practices. At present it would seem that some of the bigger industries in the Province have adopted voluntary environmental management processes but there is more work to be done with new industries and small, medium and micro enterprises.

As environmental management and governance is an evolving field which must be adapted to national policy changes and improvements in our knowledge of biophysical systems, this is an area for continual improvement in the Eastern Cape Province.

12.5: Freshwater

Two of South Africa's 19 water management areas (WMAs) lie entirely within the Eastern Cape Province. They are the Mzimvubu to Keiskamma WMA and the Fish to Tsitsikamma WMA. The Kraai sub-WMA (which is part of the Upper Orange WMA) also lies within the provincial boundary.

In terms of eutrophication, both of these WMAs as well as the Kraai sub-WMA have shown a deterioration in water systems between 1996 and 2001. However, 2003 results indicate an improvement in water quality. This improvement should be monitored over time in order to establish whether the improvement is sustained. There are numerous incidences of water quality guidelines being exceeded within all of the WMAs in the Province. In particular, high total dissolved solids (TDS) exist within the Fish to Tsitsikamma WMA and have necessitated large water transfers into the area from the Upper Orange WMA (DWAf, 2003a).

Half of the groundwater regions situated within the Eastern Cape Province have shown an improvement in groundwater quality over the past two years while another four regions indicate a deterioration in quality. The highest concentration of nitrates and nitrites (mg/l NO_x-N) in groundwater exists in the North-eastern Upper Karoo groundwater region (3.043 mg/l), however this level is below the target threshold and will not cause any significant health effects (DWAf, 2003b; WRC, 1998).

In terms of water quantity, the most common uses of water in the Eastern Cape are for irrigation, transfers out, urban, rural and then afforestation. There are no pressures for water from either the mining or energy sectors in the Eastern Cape Province. Almost two thirds of the water resources required in the Province are for irrigation (63%). Several irrigation developments exist in the Mzimvubu to Keiskamma WMA, with intensive cultivation of irrigated land along the main rivers in the Fish to Tsitsikamma WMA. In 2000 the demand for water in the Province did not exceed the amount of water available for use. Surface water is the most abundant source of water in all water management areas and accounts for almost half of the resource available in the Province.

Water resource management in the Eastern Cape Province is the responsibility of the regional office of the Department of Water Affairs and Forestry. However, part of the Upper Orange WMA, the Kraai, which resides within the Eastern Cape provincial border is managed by the Orange Free State regional office of DWAf. There are presently 2 water user associations and one catchment forum active in both WMAs in the Province. According to DWAf (Eastern Cape

Regional Office), capacity does exist for ensuring effective water resource management, with approximately 276 staff in the Water Resource Management Directorate of the Eastern Cape (Daniel, *pers comm.*, 2003).

12.6: Human settlements

Human settlements cover those places where people live, including both rural and urban communities. Human settlements typically include the physical structures and services providing material support (Newman *et al.*, 1996). Human settlement patterns in South Africa are largely influenced by past and present economic, social and political influences; to the point where human settlements are often found in locations that defy economic reason (Napier, 2000). In the Eastern Cape Province, the state of human settlements has been defined in terms of delivery of basic services, housing trends, population dynamics and waste disposal.

Much of the backlog in basic service provision in the Province can be found in the former homeland areas, now known as the O.R. Tambo, Alfred Nzo and Chris Hani District Municipalities. Increased pressure on housing is experienced in the more urban District Municipalities, with almost a quarter of dwellings in the Nelson Mandela Metropolitan Municipality being informal dwellings. Overcrowding in households is evident in the Province, with more than a third of households living in dwellings with two rooms or less.

The bulk of the Eastern Cape population resides in the Amatole and O.R. Tambo District Municipalities, as well as the Nelson Mandela Metropolitan Municipality. The majority of the population in the Province is young (under 34 years of age).

In describing the current state of human settlements in the Province, various discrepancies become apparent between the former 'homeland' and 'republic' areas. Understanding the historical dynamics of the Province is important as settlement patterns to a large degree can be influenced by land tenure systems. According to the Eastern Cape Office of the Premier (2001), the Eastern Cape has lagged behind in economic and human development terms because of its relatively poor resource endowment and its distance from the main centres of production. In addition, it represented one of the main focal areas for the apartheid social engineering effort (i.e. separate development with all its attendant social, spatial and political consequences).

12.7: Land

Human beings are dependent on terrestrial ecosystems for sustenance, raw materials and space for housing and recreation. The mining, agriculture, forestry and tourism industries also rely on the land resource base. The condition of the land and how it is used and managed is therefore vital for existence (DEAT, 1999).

The Eastern Cape Province is characterised by extensive areas of thicket vegetation which are degraded by agricultural practices, industrial expansion, invasion by alien species and the over-grazing of domestic herbivores. Just over half the Province is largely open areas of natural vegetation including forests, woodlands, grasslands and shrublands. Approximately 8% of the land is cultivated and just over 1% is used for forest plantations.

Eastern Cape is also one of the three most degraded provinces in South Africa. It has one of the highest provincial indices of soil degradation, particularly within commercial farmland areas. Most of the land area of the Eastern Cape Province is classed as 'Affected Drylands', with only a small percentage of the Province categorised as humid and hyper-arid. Predicted soil loss is also significant with more than half of the Province showing moderate or high soil loss. The areas

most affected by soil loss (when compared to the land cover map) are the degraded unimproved grasslands.

Two thirds of the land in the Province is privately owned, slightly less than one third is communally owned, while only 4% is state-owned land. This distribution clearly reflects the historical land allocation patterns of the apartheid system.

12.8: Marine and coast

The marine and coastal environment of the Eastern Cape Province is an extremely valuable asset due to its aesthetic value, ecological and biological diversity, natural resources and economic potential (Coastal and Environmental Services, 2003). The Province's coastline is over 820km in length, extending from the Groot Wes estuary in the south to the Umtamvuna estuary in the north (Coastal and Environmental Services, 2004a). The marine and coastal environment includes the terrestrial ecosystems (dune systems, coastal forests and grasslands), which are influenced by the marine environment, as well as the intertidal and inshore habitats and the deepwater offshore environments. These various habitats host a wide range of biological diversity and resources, which have been subject to varying levels of exploitation and development in the past. High levels of infrastructural development have occurred between the Kei and Kromme estuaries, resulting in increased pollution and decreased aesthetic appeal of the natural coastal environment in this region. Inshore marine resources are also heavily exploited within the Province, particularly north of the Kei estuary where the rural subsistence lifestyle is prominent in the former homeland areas. The offshore resources are less accessible to subsistence fishermen but are heavily exploited by commercial fishers who have the necessary equipment.

In the past the marine and coastal environment was managed sectorally on a resource basis. This led to an overlap in areas of jurisdiction and uncertainty on the roles and responsibilities of the different organs of state. A new approach to coastal management has recently been adopted, advocating an integrated, holistic and co-ordinated approach to the management of coastal resources (DEAT, 2000). This approach requires the establishment of a coastal management programme for the Province. The Marine and Coastal Management Branch of the national Department of Environmental Affairs and Tourism (DEAT) and the provincial Department of Economic Affairs, Environment and Tourism are the lead agents for coastal management in the Eastern Cape Province. Currently there is a lack of institutional capacity and co-ordination between these departments to administer and enforce the existing coastal legislation, which has allowed uncontrolled utilisation and development in several areas of the Eastern Cape coastline (Coastal and Environmental Services, 2004b).

12.9: Poverty

The Eastern Cape Province is arguably the poorest province in South Africa, although the Northern Province and KwaZulu-Natal are held to compete strongly. Data available from Statistics South Africa show that more than two thirds of the Eastern Cape households are classed as suffering from poverty (Statistics South Africa, 2003) and 32% are unemployed (Labour Force Survey, 2001 in Statistics South Africa, 2003). Thus, although Gross Geographic Product is R8 197 per annum per capita and average household income is R43 097 per annum (Statistics South Africa, 2003), only 5.4% of employed people earn more than R6 000 per month, with more than half of employed people earning less than R500 per month (ECSECC, 2001). A total of 68% of the people in the Province have a per capita expenditure of less than R250 per month (Hendricks, 2003, citing Statistics South Africa, 2000).

The Eastern Cape Province is thus faced with widespread poverty, with rural areas being the worst affected. The lack of employment and income in many households means that these households are extremely vulnerable to many of the problems associated with poverty such as poor health care (leading to increased mortality due to notifiable diseases) and lack of access to basic resources for good quality of life. The situation in the Eastern Cape Province is further exacerbated by the increasing incidence of HIV/AIDS. A provincial HIV prevalence amongst antenatal clinic attendees of more than 20% in 2002 is illustrated (extrapolated to around 7% HIV prevalence among the general Eastern Cape population).

However there is potential to reduce poverty in the Eastern Cape Province. The Province has a wealth of human and natural resources that can be utilised in poverty alleviation programmes. These resources will however only be effectively deployed once the institutional environment is supportive of poverty alleviation in the Province.