

**ANALYSIS OF THE PROVISIONS OF THE ENVIRONMENTAL  
CONSERVATION DECREE No.9 OF 1992 (TRANSKEI) FOR THE  
CONSERVATION OF MARINE RESOURCES WITH SPECIFIC  
REFERENCE TO PATTERNS AND PROBLEMS OF EXPLOITATION**

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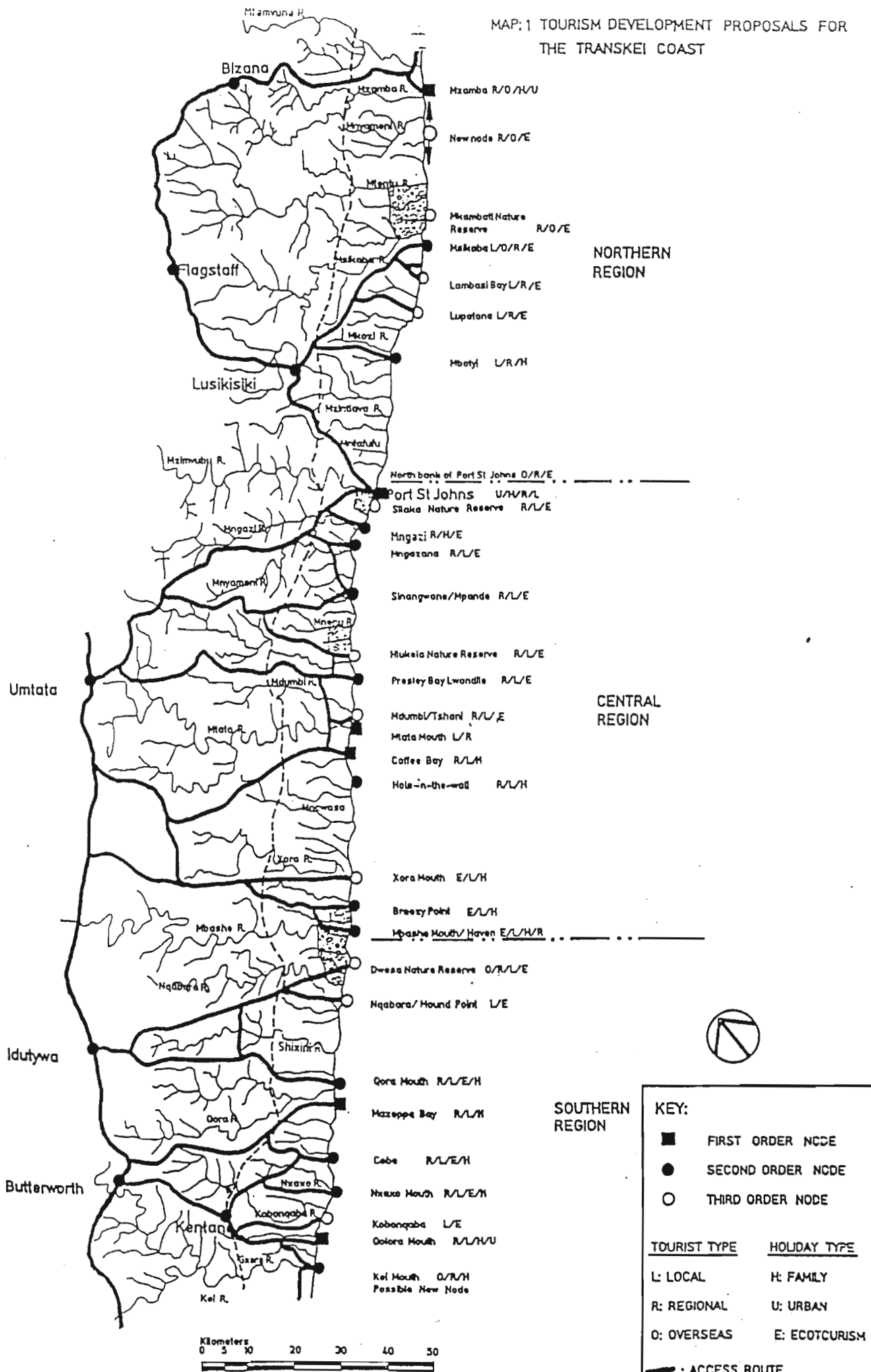
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## CHAPTER 1

### INTRODUCTION: THE TRANSKEI COASTAL REGION

#### 1.1. Transkei Coastline

The Transkei region is located on the South Eastern seaboard of the Republic of South Africa. This coast is one of the most beautiful stretches of the coast along the entire South African seaboard. Traditionally, rural Transkeians are agropastoralists who rear cattle, sheep, goats, pigs and poultry. Also, they are mostly engaged in the cultivation of maize. The Transkei coast is one of the least developed parts of Southern Africa and as a result the coastline is regarded as the finest and undisturbed on the subcontinent. The Transkei intertidal zone is geologically diverse and it was hypothesized that intertidal geology may play role in the determination of the distribution of collectors, in as much as different substrata may support different intertidal invertebrate communities and therefore have different carrying capacities for exploitation.<sup>1</sup> The fragile ecosystem should be conserved to serve as both an attraction to the tourists and also the scientific research area. In a bid to protect segments of the unspoilt areas, a number of natural reserves have been proclaimed along the coast and inland. These reserves provide various facilities which are developed to entertain both the tourists and fisherman (See Fig 1). The coast strip is taken from the region from the seashore to about 5 km inland consisting of several distinct habitats.<sup>2</sup>

#### 1.2. Sea, Tides and Temperature

The coast is bathed by the warm Agulhas current south flowing from tropical regions. Temperatures of this current are on the average of 25 °C.<sup>3</sup> The current tends to wander and its in-shore surface temperatures are cooler than in winter.

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1 Hockey P.A.R., Bosman A.L. Siegfied W.R. "Patterns and Correlates of Shellfish Exploitation by Coastal People in Transkei: An Enigma of Protein Production" (1988) 25 Journal of Applied Ecology, p.353

2 Ibid.

3 Nicolson Guy, Transkei Coastal Development Plan, Annexure 1 Description and Analysis of the Coast (1993), p.1

Close inshore, north flowing counter currents and local eddies occur and move sands northwards and also tend to inhibit the distribution of coastal organisms, creating localised populations not readily recolonized when eliminated from isolated rocky area, for example by over-exploitation. High energy waves of up to 10m are typical of this coast.<sup>4</sup> These waves have a tendency to erode the shore and where they approach the coast obliquely under the influence of the prevailing wind, generate long shore currents which transport sand. Littoral drift is usually from south to north and is very evident on this portion of the coast.

The warm temperate qualities of the sea offshore add considerably to the diversity of marine fishes and other marine life. There is a wide accepted view that whereas both warm and cold water regions of the sea tend to have a fairly stable variety of animals throughout the year, the Transkei coast benefits from the immigration of the tropical fishes during winter.<sup>5</sup> Butchart observes that the waters off the Transkei coast support an interesting and diverse combination of organisms, for this area is a transition zone between the temperate Cape and the subtropical waters of Natal.<sup>6</sup> Transkei coast temperatures are moderate with both diurnal and seasonal fluctuations being small reaching highest daily means of 22.8°C and 21.7°C in February and lowest daily means of 17.3°C and 16.3°C in Port St. Johns and more in southern Mbashe respectively.<sup>7</sup>

Tidal surge effects have a tendency to control the vertical spread of wave action, the strength of tidal currents and the volume of the tidal prism in estuaries. The tidal surge is classified into two categories, namely, the upper micro-tidal, range 2m, and the lower meso-tidal 2 to 4 m.<sup>8</sup> This results in the action concentrated along the relatively narrow band of the shoreline. The warm Agulhas current sweeps down the east coast of Africa and subtropical fishes from north therefore move into this area, particularly during summer months. Further, the irregular north

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4 Nicolson, op cit, p.3

5 Butchart D, A Guide to the Coast and Nature Reserves of Trankei (1989), p.10

6 Ibid

7 Nicolson, op cit, p.1

8 Nicholson, op cit, p.3



flowing cold counter-current which flows closer to the shore brings many Cape fish with it, most notably in the case, sardines which migrate north during winter. In total there are 800 species of marine fish that occur off the Transkei coast many of which are migratory.<sup>9</sup> On the other hand endemic fishes occur along the East coast of South Africa particularly in Transkei and it is maintained that they could not be found anywhere in the world.

### 1.3. Transkei Coastal Marine Resources and Pattern of Distribution

#### i. Patterns and Distribution

Marine resources, for the purposes of this dissertation will mean different types of fishes and invertebrates. Statistics show that in total there are approximately 1 500 that have been identified from Mozambique in the East to much colder shores of Namibia in the west.<sup>10</sup> Despite the evidence of immigration fish, there is also a high proportion of species which are regarded as endemic. These fish species occur along the coast of South Africa, particularly the Transkei.

Distribution of these fish species differ from region to region along the coast. Port St. Johns forms the boundary between two biogeographic marine provinces. In the North East, the East coast province is dominated by tropical and subtropical species and to the South West, the South coast province is dominated by warm temperate species. The most important species of fish and shell-fish along Transkei coast are shad (elf), kob (kabelijou) spotted grunter, blacktail (dassie), yellow-bellied rock cod, bronze bream, garret, perna perna, crayfish, octopus, fissurella natalensis, Oxysteles turbo, Charonia, Thais burnupena, oysters, redsteenbras and blacksteenbras. Phytoplankton tiny forms of floating plant life provide food chains for all creatures ranging in size from microscopic protozoans and whales as well.

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9 Nicholson, op cit, p.16

10 Van Der Elst R. P., A Guide to the Common Sea Fisheries of Southern Africa (1988), p.57

Although they provide only a small revenue to Transkei, seaweed and shellfish collecting and skiboat catches seem to be very important to the local subsistence populations in the coastal zone. A major concern of the conservationists is the utilization and over-exploitation of crayfish, mussels and oysters. The rocky intertidal regions of Transkei are amongst the heavily exploited in Southern Africa.<sup>11</sup> Hockey adds that an estimated 5,5 tons of invertebrates are removed annually per km of rocky shore in 20Km south of the Hole in the Wall.<sup>12</sup> This figure is said to increase from time to time. On the other hand, north of Port St. Johns exploitation pressure seems to be lower due to a less dense coastal population and domination of substrata by the quartzitic sandstones and limestones. In the central and southern Transkei collectors are said to favour tillite, shale and dolerite substrata. But most writers are in consensus that pernaperna spans both provinces and is collected in large quantities along the Natal coast North of Transkei.

## ii CASE STUDY:

The Oceanographic Research Institute in association with the University of Transkei (UNITRA) has provided a case study of the distribution of shellfish and fish in the Transkei coast.<sup>13</sup> Their survey concentrated on the stocks of abalone, rock-lobster, mudcrabs, oysters, subtidal mussels and sand and mudprawns. Also another contribution was made by the Zoology Department of UNITRA by examining resources in the intertidal zone along the coast. The following categories were considered:

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11 Bigalke E.H., "Exploitation of shellfish by Coastal Tribesmen of Transkei", Annals of the Cape Provincial Museums, Vol 9, (1972-1974), p.159.

12 Hockey P.A.R., Exploitation of Intertidal Invertebrates in Transkei and Ciskei (1988), p.13

13 Fielding P.J. et al, Transkei Coastal Fisheries Resources unpublished report No.98, June, (1994), p.1.

a) Abalone: (*Haliotis Midiae*)

According to this survey abalone are only found between Mbashe and Kei rivers in very shallow waters of smaller than 5m in depth. Large quantities of abalone are found in Wavecrest and there is a Northwards decrease towards Mbashe river. Evidence has shown that a commercial fishery for abalone operated for three years and about 90 tonnes were harvested in 1991.<sup>14</sup> Management of abalone stock is reported to be difficult and consequently overfishing has been common in the region. The Oceanographic Research Institute therefore recommends that if a resource is to be exploited the quota holders should combine operations with the data collection necessary to establish the optimal sustainable yield more precisely.

b) Rock-lobster: (*Panulirus Homarus*)

There are few of these South of the Mbashe river. It has been reported by the Oceanographic Research Institute that densities increase Northwards to the extent of reaching 0.92m of the reef in Port S. Johns and Mbotyi areas.<sup>15</sup> Between 1986 and 1991 harvesting of rocklobsters for processing by Transkei fish factories did not exceed 10 tonnes annually.<sup>16</sup> Hotels and cottages also contribute in the exploitation of these resources. The Oceanographic Research Institute suggested that a minimum legal size (MLS) of 65mm carapace length (CL) should be adhered to so that stocks could withstand high levels of fishing before stock egg production is reduced by 50%. The general feeling was that if undersize animals continue to be removed, the effects on yield egg production may be severe. It was recommended therefore that a total allowable catch (TAC) of between 61 and 110 tonnes of lobsters should be a guideline, with a minimum legal size of 65mm CL.<sup>17</sup>

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14 Fielding P.J. et al, op cit, p.2

15 Ibid

16 Ibid

17 Ibid

c) Oysters: (*Striostrea Margaritacea*)

These species are harvested infra-tidal but their sampling has proved to be difficult. They are usually sold to visitors and coastal hotels by local women. Statistics given by the Oceanographic Research Institute show that three coastal hotels use up to 4 500 per annum between 1991 and 1993 and on the other hand cottages take about 70 000 oysters per annum. Fish factories were recorded to have processed between 19 000 and 131 000 infra-tidal collected oysters per year between 1986 and 1991. The recommendation was the zonation and rotational harvesting of oyster beds in the Transkei coast.

d) Subtidal Mussel: (*Perna-perna*)

These organisms are rare and offer no potential for exploitation. They also provide no reservoir of breeding animals of intertidal stocks.

e) Intertidal invertebrates:

According to the observations of the Oceanographic Research Institute the Transkei coast has a total of 15 species of edible molluscs. Included in such species are mussels (*P.Perna*) and six species of limpet. It has been observed that the central region of the Transkei coast experiences much heavier exploitation pressure than the Northern and the Southern coasts. Annual shellfish production on the intertidal shore is recorded to range from 0.6 to 3.7 kg. 100m. A large proportion is utilized by local people. These resources are inclined towards exhaustion.

#### 1.4. EXPLOITATION PATTERNS AND PROBLEMS FACING THE MARINE RESOURCES (FISHES)

##### 1.4.1. Indigenous People and Exploitation

Bigalke noted that the consumption of shellfish by Black groups who lived along the South and South-East of Southern Africa has been extensively documented in archaeological literature.<sup>18</sup> To support such evidence he maintains that traveller's accounts and early ethnographic descriptions of the Bantu-speaking peoples of the

present day Transkei and Ciskei with few exceptions emphasize the absence of a tradition of fishing. Population groups along the coast resort to fish for protein as they keep their livestock for brides-wealth payments and rites. These practices therefore lead the communities along the coast to over-exploit the available marine resources so that they could substitute the animal protein.

Marine resources are exploited by the local peoples for different purposes other than eating. For instance, sea-foods or sea objects can be used as ornaments and medicines. In the survey that was conducted by the University of Transkei during the previous years, it was recorded that a woman at Mbotyi was using limpets shells as spoons for feeding babies and as pot scrapers.<sup>19</sup> When tin caps are not used on tops of hut roofs, oyster shells are wisely used to keep the earth cap in place. The shells of *Nerita Textilitis* are made into arm-bands and neck-lets by the Xhosa and Bomvana groups. Among the Bomvana and Pondo groups the tentacles of the Octopus are used by young men as a love potion. On the other hand the stomach (liver) of the crayfish (considered by some locals to be brains) is used at Mbotyi to calm troublesome crying children. At Mzamba there is a report that a barren woman who takes to a diet containing a large proportion of the shellfish will soon conceive.<sup>20</sup> Crayfish eggs mixed with certain herbs are given to cows, ewes and hens to encourage their fertility. Cuttle-fish, scraped to a powder is used in cases of sore-eyes in humans and animals. These different uses quoted above indicate that a lot of fishing or catching has been done without the notice of the government Officers. It becomes an interesting state of affairs to notice that there is some awareness among the shell collectors of the conservation of resources though it seems to be traditional. The survey that was conducted reveals that at every place visited along the coast, informants claimed that they did not take immature mollusc because they wished these to grow big so that they could be used at a later date. At the same time they claimed that the big molluscs tasted better than the immature ones.

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19 Bigalke, op cit, p.166

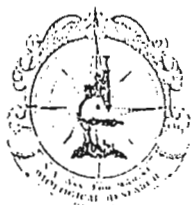
20 Bigalke, op cit, p.165

# TRANSKEI COASTAL FISHERIES RESOURCES



Fielding, P.J., Robertson, W.D., Dye, A.H., Tomalin, B.J.,  
van der Elst, R.P., Beckley, L.E., Mann, B.Q.,  
Birnie, S., Schleyer, M.H. & Lasiak, T.A.

OCEANOGRAPHIC RESEARCH INSTITUTE



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These traditional conservation measures need to be improved. Exploitations will always occur unreasonably as long as no formal education is given to them. The indigenous populations prefer morning collections and collections are conducted in all seasons.

Lasiak submits that the reduction in the proportion and size of brown perna-perna found in the shell middens, coupled with a marked decline in the density of natural populations in Transkei have always been cited as evidence of over-exploitation.<sup>21</sup> Further she submits that data from a more intensive and regular sampling program reported in the Transkei coastal region show that significant differences in size composition can be detected in samples taken frequently at one month apart. As far as she is concerned these results indicate that the comparison made after an interval of 6 years as described by the previous works should be treated with caution.

Amongst the Xhosa and Bomvana groups, collecting is done mostly by women, from small girls to grey headed women (See picture p. 8). At Mzamba women are usually seen catching crayfish whereas men are always engaged in line-fishing. One cannot deny the fact that marine life in the Transkei coast, especially fishes is in danger. All species which occur in the balanoid and cochlear zones of the intertidal area seem to be in trouble. Coastal peoples engage in fishing to the extent that they are aware of tidal movements and they know that spring tides occur at full moon and new moon. From Bigalke's researches it is clear that information was repeatedly given that these were the best times for collecting and that it was then possible to go far out in the rocks and obtain the largest shellfish. The question to be asked by any conservationist would be whether these traditional peoples appreciate the existence of these marine animals or whether the future generations will be able to know the once available marine animal species in the coast?

#### 1.4.2. Commercial Exploitation

Dye maintains that equilibrium has been reached between the subsistence form of consumption and the marine life of the coast, but commercial levels of exploitation cannot be sustained.<sup>22</sup> Local people depend on the sale of sea-foods for their survival. Sale of sea-foods becomes the source of income of the indigenous peoples of the Transkei coast. They supply sea-foods to the hotels and cottages along the coast. This commercial practice seems not to be extensive because the Transkei coast is not well developed, as compared to the nearby Natal coast. A serious impact may be experienced up to 15km down the coast on each side where there happens to be development. The supply of any invertebrates or shell-fish to commercial firms other than hotels has been unlawful since October 1991.<sup>23</sup> Sometimes even private persons would come and buy crayfish from local peoples. They buy as much as they like without any limitations, as they would refrigerate such large quantities.

According to Dye the warm waters of the region are too low in nutrient content to be able to support fish population of sufficient sizes for commercial fisheries.<sup>24</sup> Local peoples therefore, get the chance of selling rock life such as mussels and crayfish to hotels and also to firms at collection points along the coast. It becomes clear that these rocky communities are unable to withstand these intensive levels of commercial exploitation which are unsustainable in the long term. The only long term solution would seem to be a suitable legislation controlling commercial exploitation and strict enforcement of such legislation.

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22 Dye, E.H. "Effects of experiental exploitation on rocky shore communities in Transkei", Sixth National Oceanographic Symposium, Stellenbosch, 6 - 10 July (1987), p.2 (unpublished paper).

23 Nicholson, op cit, p.29

24 Dye, op cit, p.2



In 1988 Transkei opened four fish factories which brought about good trading atmosphere for marine products.<sup>25</sup> Local people would make a living out of the sales of marine products to the fish factories. These fish factories export processed abalone to the Far East while Transkeians and the whole of South Africa consumed other organisms.<sup>26</sup> Commercial ski-boat fishery was started in four of these sites since 1975.

Commercial ski-boat fishermen are able to catch about 48 species of fish, redsteenbras forming the major part of the catch.<sup>27</sup> Other important species are poenskop (*cymatoceps nasutus*), dageraad (*chrysoblephus*) and polysteganus. It has been noticed that for years the redsteenbras have been experiencing a problem of over-exploitation.

Between 1987 and 1993 increasing number of rock cod, kob and sparids were caught by the Transkei fishermen.<sup>28</sup> On the other hand the Natal registered skiboats concentrated in catching kob, geelbek and slinger. Such catching occurs in the Northern Transkei waters and the catch per unit effort of these species has increased recently. Rock and surf-anglers fishing in competition on the Transkei coast are confined in catching sharks and rays while shad (*Pomatomus Saltafrix*) and Strepie (*Sarpa Salpa*) are the most important species caught by non-competitive shore anglers. The Oceanographic Research Institute recommended that future monitoring of the catch and effort of all sectors of the Transkei fishery is essential. Also, it was observed that many of the deep reef sparids targeted by the ski-boat fishermen are slow growing long lived species and are therefore susceptible to growth overfishing. It was also recommended that Transkei needs to establish further effective marine reserves on its coast.

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25 Fielding et al, op cit, p.5

26 Ibid

27 Ibid

28 Fielding et al, op cit, p.6

### 1.4.3. Extent of Removal of Marine Organisms

According to Dye increased human activities have led to an increase in the utilization and disturbance of the natural resources in the Transkei coastal zone more especially in terms of the exploitation of food items such as line-fish, crayfish, mussel and oysters.<sup>29</sup> These are affected because they are mostly used by the indigenous peoples, hotels, commercial licence holders and casual tourists. Local peoples also consume other species such as whelks and limpets and in some areas they are harvested. This exploitation continues largely uncontrolled and in many areas abundance of these organisms has been reduced to very low level.

A survey of the use of Transkei coast by shell-fish collectors was made during low spring tide in November 1986.<sup>30</sup> In this survey the intensity of collecting activity in the intertidal zone was correlated with human population density and the length of the rocky shore and was found to be influenced by geographical region and geology. Hockey et al maintain that annual shell-fish removal averaged 55.73 kg whole wet mass km<sup>-1</sup> of the rocky shore between the Kei and Port St. Johns as compared with 33 kg.km<sup>-1</sup> to the Eastern Coast of Port St. Johns.<sup>31</sup> Of all the catch, *Perna perna* comprises about 100% of the total catch. The annual removal from 99.20 km of rocky shores surveyed at Port St. Johns was estimated at 552.835 kg.<sup>32</sup> From the above statistics one would be convinced that there is a need that something should be done to prevent the critical situation awaiting these creatures. These statistics were taken long ago during 80's. By now the removal might have been increased tremendously.

In the South of Transkei the potential production of domestic animal protein from cattle, sheep and goats alone exceeds the annual requirement per adult person by 20%.<sup>33</sup> Obviously, this reduces the fish consumption in the region. In the central

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29 Dye A.H. "Coastal Zone Management in Transkei", South African National Scientific Programmes Report (155) (1988a) p.38  
30 Hockey, Bosman, Siegfried, op cit, p.353  
31 Ibid  
32 Siegfried W.R., Hockey P.A.R. & Crowe A.A., "Exploitation and Conservation of Brown Mussel Stocks by Coastal People in Transkei", (1988) Vol 12 Environmental Conservation, p.304  
33 Hockey, Bosman, Siegfried, op cit, p.353

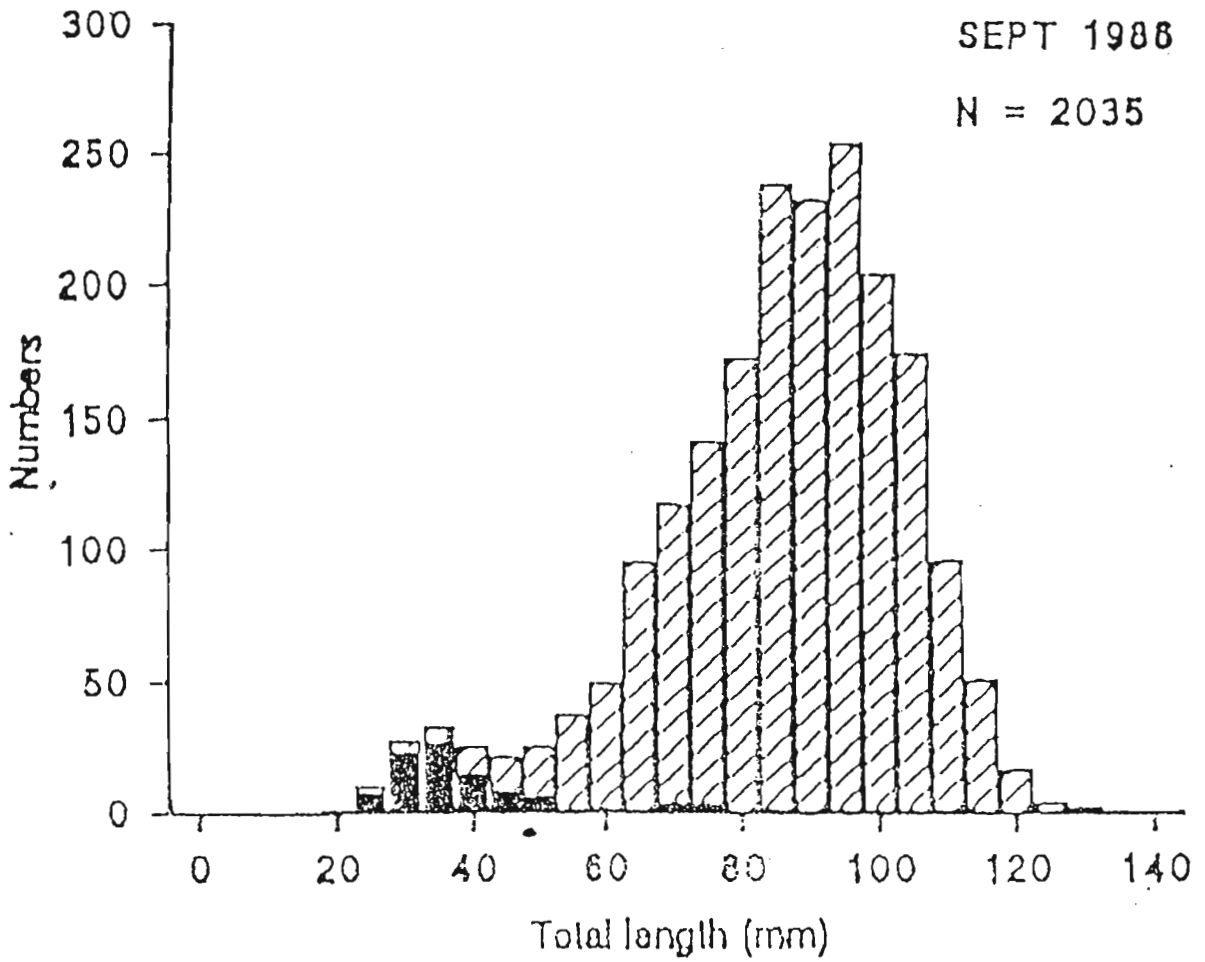


Fig. 3. Size frequency distribution of *Perna perna* exploited

region shellfish only supply 8% of the annual protein requirement and sheep, goats and cattle provide more. Shellfish in the central region is under greater pressure from collectors than shellfish elsewhere. Also, it is more important for nutrition to coastal people than shellfish elsewhere. In the region north-east of Port St. Johns it has been noted that shellfish is relatively unimportant in the diet. It is recorded to only supply about 0.1% of the annual protein requirement.

The exploitation of intertidal shellfish by man for food has taken place in Transkei for years. Throughout these years the most commonly collected species has been brown mussel *perna-perna* (graph III). Recent studies have shown that during the last decade there have been change in the intertidal community structure and functioning in exploited areas in the region. Selective removals of preferred species has led to a decrease in quality of the intertidal shellfish resources. These observations coupled with marked increase in the rate of human population growth in Transkei imply that the shellfish population are meeting a greater predatory pressure from man than anytime in the past.

Of the livestock available to the indigenous inhabitants of the coastal areas, only pigs and poultry are consumed regularly, others are for special occasions. That is why the marine life, especially fish and shellfish are experiencing problems of over exploitation. Obviously, these special occasions are attended by many people, so they have to share the protein available, and each individual would be getting a small amount of animal protein. The livestock units represent wealth to the owners and are important within the social hierarchy. They could as well be used as currency for dowry and fines. It has been the opinion of most scientists that shellfish derived protein is nutritionally important in supplementing the herbivorous diet. This is reflected in the noted reduction of Kwashiorkor close to the coast.<sup>34</sup>

Hockey et. al. give the following assumptions, concerning the calculations of annual removal of shellfish by collectors:<sup>35</sup>

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34 Hockey, Bosman, Siegfried, op cit, p.353

35 Hockey, Bosman, Siegfried, op cit, p.256

- a) Counts made during surveys represent the maximum numbers of people ever collecting shellfish.
- b) People within 1 Km of the coast visit the shore on the average of 10 times per month.
- c) People living 1 - 6 Kms away visit 6 times a month and people living 6 - 10 Kms away visit 3 times a month.
- d) The average mass of shellfish collected by one adult person during one visit is 6 Kgs.
- e) The quantity of shellfish collected by young children is negligible and ignored.

Though the local peoples are not collecting at night, it cannot go without mentioning that not only the indigenous peoples are posing problems to the Transkei marine resources such as fish, but also foreign vessels are usually seen especially at night. Nobody knows how much they catch or which species they select. According to Feely's personal view (Department of Agriculture and Forestry, Nature Conservation Division), such evidence is a rumour which they have not yet confirmed.

#### **1.4.4. Methods of destruction**

Equipment for collecting shellfish is simple. For those mollusca which are easy to dislodge, for example, the Oxystele Charonia, Thais and Burnupena, the locals simply use the hand to remove them. On the other hand, Patellidae, Haliotis and clumps of Perna-perna are removed from rocks by means of a narrow flat iron or steel-bar known as "ulugxa" in Xhosa. Perna-perna is removed in clusters together with any seaweed attached. These methods of removal are dangerous to exploited organisms. The work is done quickly, with the main object being to collect as much from the fringe of the surf as time permits. Shell damages occur as when the edges of the shell are chipped or broken. Before leaving the coastal rocks, women engage themselves in the sorting out of their shell-fish picking off bits of seaweed and discarding mussels they consider too small to be worthwhile taking home.

Local people usually bring donkeys to carry back what they have collected. They even stay overnight in order to be able to take advantage of the morning low tide. Coastal inhabitants depend on the shell-fish for their living. They consider the shell-fish as a substitute for meat. The collection and eating of the shell-fish is seen not to have any restrictions which could be imposed by custom and belief. This exploitation is recorded to have been ongoing for many years, but it has been noticed that it is becoming intensive in recent years as the population of Transkei has more than doubled between 1960 and 1984.<sup>36</sup> Collectors are selective both in the species and sizes which they take and specialise particularly in mussels and limpets with mussels being a traditionally favoured species. It has been observed that exploitation has a tendency to alter intertidal community structure and has reduced the populations and size of certain species. This seems to have affected the brown mussel *Perna-perna* resources. They seem to be seriously depleted. Evidence shows that mussel size and availability declined markedly between 1978 and 1984.<sup>37</sup> Hockey submitted that by 1984 mussels accounted for 92% of all prey items but by 1984 the percentage declined to 57%.<sup>38</sup> At this stage the collectors had to resort to limpets for their protein. It was discovered that collectors would be persistent in the removal of the largest and the most fecund invertebrates.

#### **1.4.5. Tourism and Recreation**

At present the Transkei coast is capable of attracting tourists because of its beautiful scenery and lack of development. This does not mean there are no threats of interference with the coast. Impact from foreign tourists, foreign vessels and nearby inhabitants has been felt. It became necessary therefore that some areas should be protected. Such protection boosted the tourism industry which is the only major industry along the Wild Coast (Mzamba) and therefore which is the most important formal provider of jobs and incomes to the local people. This tourism industry largely depend on the protection of all the natural ecosystem available in the coast.

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36 Hockey, op cit, p.13

37 Ibid

38 Hockey, op cit, p.14

Unfortunately, although tourism worldwide is listed to be amongst the biggest capital earner, in the TBVC states context it had not been taken seriously since it is not a manufacturing industry. It is hoped that in the near future the government of National Unity will encourage the development of tourism in these areas. The first steps towards that, would be to conserve all the available natural ecosystems or resources. Sufficient casino facilities have been developed in the Wild Coast but these are not the only facilities necessary for the provision of revenue in the country. Tourists visit the coast for its aesthetic value as well as its available marine resources. These marine resources are not available in particular areas, they move up and down the waters. That is why something should at least be done to protect the whole coast. The gist of the matter is that at least something should be done even in those so called unimportant areas of the coast. Even the available natural vegetation needs protection.

Transkei coastal region could become an important tourist destination and tourists could become the major source of revenue if it could be well developed. Coastal communities could be uplifted as well. Presently, it has been observed that little revenue has been brought by tourists into the Transkei.<sup>39</sup> This could be attributed to the fact that the standard of basic services is too low and holiday developments are self-contained. Further, the conditions of roads and towns and lack of infrastructure to support the tourist industry and the lack of security are the major deterrents to potential visitors.

#### 1.4.6. Population effect on removal of organisms

In the Central Region where people experience the most severe protein deficiency, the intensity of shell-fish exploitation is already greater than other regions.<sup>40</sup> Hockey, is of the view that even if the local customary view of livestock as a status symbol and trading currency could be modified to include a protein production orientated approach or agricultural activity was greatly intensified this region would still be faced with a problem concerning coastal conservation. There is a problem in comparing and contrasting real and potential use of shell-fish and livestock as resource whereas livestock are privately used. Cattle graze on the commonage and therefore the increasing poor condition of cattle and degradation of intertidal resources might both be viewed examples of the tragedy of the commonage. This situation is said to be likely to persist or to become aggravated for as long as the agricultural production of the Transkei falls below its potential, the population continues to increase rapidly and the livestock productivity is not exploited efficiently.<sup>41</sup>

Population numbers in the whole world are increasing at an alarming rate and is usually accompanied by illiteracy especially in the heterogeneous population of Transkei.<sup>42</sup> This has profound effects on our physical environment. Time will come when even the sparsely populated areas will have to be invaded by development more than it is now. Growth usually stimulates movement.<sup>43</sup> Some of the Transkei's poor people tend to invade the most forested areas in search of shelter and to gather food. The coast as well will not be free of this practice since it is mostly comprised of bushy trees. By invading the forested areas near the coast, the indigenous people are destroying the natural environment. This means that our natural resources will be exposed to the most critical situation.

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40 Hockey et al, op cit, p.353

41 Hockey et al, op cit, p.362

42 Nafis Sedik, "Population, Resources' Consumption, and Development Possibilities" (1994) Vol 21 Environmental Conservation, p.3

43 Ibid



## CHAPTER 2

### POSSIBILITY OF EXTINCTION IN THE TRANSKEI COAST

#### 2.1. Meaning

Extinction in biology means the total dying out or termination of a race of species of animals or plants.<sup>44</sup> It occurs when a species can no longer reproduce at replacement level. Most extinctions are associated with environmental changes which affect the species in either two ways. The doomed species might not have been able to adapt to changed environment and thus perished without descendants. On the other hand species might have adapted but in the process may have evolved into a distinctly new species. Apart from the above mentioned categories the Transkei coast is experiencing the effect of human beings who destroy the environment through hunting, collecting and habitat destruction. The latter category has become a significant factor as a cause of extinction.

From the above Chapter, it is clear that Transkei is not exceptional to the world-wide current problem of possible extinction of certain species. By introducing the Decree, it seems the Government aimed at counter-acting such extinction. It became necessary therefore, that data should be collected to give a clear indication as to what is left in the Transkei Coast. Furthermore, issues which could lead to extinction had to be investigated, as a result the Oceanographic Research Institute and the University of Transkei had to take initiative to conduct research which led to our understanding of the status quo in the Transkei Coast.

#### 2.2. Extinction: General Observations

Information compiled by researchers in many parts of the world was presented in Red Data Books.<sup>45</sup> The Red Data Books assign each species threatened with extinction to one of the following five categories:

- a) Endangered: Species or subspecies in immediate danger of extinction

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44 The New Encyclopaedia Britannica Vol 4 (1986), p.638

45 Freeland Peter, Habitat and the Environment (1991), p.85

- b) Vulnerable: Taxa with recently reduced often small populations, following from over exploitation, habitat destruction etc.
- c) Rare: Taxa localised within a particular habitat, usually thinly scattered over an extensive range.
- d) Indeterminate: Taxa about which insufficient information exist as to determine if they are endangered, vulnerable or rare.
- e) Out of Danger: Formerly endangered species.

The Oceanographic Research Institute and the University of Transkei, Department of Zoology have just completed a research on the analysis of the status quo of fish and shellfish species along the Transkei coast.<sup>46</sup> It has been observed that depletion due to over-harvesting of under-sized animals by locals is imminent, but presently, there is no evidence to support extinction. Judging from their observations one would conclude that most species in the coast are indeterminate. (i.e. most species are suspected of being threatened but there is no sufficient information available to support extinction). It was noticed that locals indiscriminately harvest the sea foods from rocks without considering the quantity or size of the organisms. Such practices result from population explosion along the coast caused by the retrenchment in the mines.<sup>47</sup> Increased harvesting pressure has been experienced including illegal fishing habits. For example, it was reported that between the 28th and 30th December 1992 a trawler (Maria) was seen harvesting crayfish illegally.<sup>48</sup> As a result of such practices species like damba and black steenbras were reported to be fewer. The team noticed that there has been a dramatic increase of harvesting by locals as from 1990 to 1993. Evidence showed that down to spring low tide rocks are now

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46 Oceanographic Research Institute, Transkei Coastal Fisheries Resources, special publication No.3, (1994), p.159

47 Ibid

48 Ibid

virtually barren. Shortage of shellfish on the rocks was reported and that one must go into deeper waters to find shellfish. Further, it has been observed that opening of hotels has caused an increase in the harvesting of crayfish, mussels, oysters and black mussel harvested during dry season. The general feeling was that the cause of the decline in fish catches was over harvesting. It was confirmed that fishing was still not controlled and rocks could be stripped off of these resources in a weeks time. Conservation officers were reported to be failing to contain the situation, because locals still continue denuding rocks of shellfish without any reprimand.

Extinction of abalone was noticed at Kobonqaba because of unknown people harvesting the area using breathing apparatus.<sup>49</sup> Rock outcrop trees which have been previously inaccessible are now within reach because of sanding up of the coastline. This has facilitated malpractices by the locals. Redbait was also noticed to be almost non-existent. Mussels and oysters were seen to be under-sized. Blacksteenbras, rock-cod, bronze bream, and black-tail were also found to be scarce. Comparisons conducted by the Oceanographic Research Institute revealed that rock life along the shore is depleted as it is not on par with rock life in the reserve areas. Shoal-fish are also not plentiful whereas game fish is scarce. It was further observed that there was a large increase in non-edible fish like sharks.

Undersized animals are still the target of exploitation. Bag limit is still exceeded and crayfish are captured during closed seasons. Mdumbi area was noted for decrease of most of the fish species. There is a suspicion that illegal gill fishing is taking place at night at Mdumbi area. Vehicles are also seen driven along the coast and beaches could be damaged. The team further observed that fishing has deteriorated over the past thirty years due to mud sediment from rivers, over-fishing by commercial trawlers and oil on rocks. Fewer crackers, white mussel cracker, king mackerel and galjoen were seen on the rocks. This shows that extinction is imminent. Msikaba also showed a decline of king mackerel or any game fish. A remarkable difference in stocks was noticed between Msikaba (unprotected) and Mkambati (protected).

Fig 2 shows that the coast is not far from extinction of species. It is clear that all larger, more desirable and plentiful fish such as the seventy four, poenskop, scotsman (Polystegamus praeorbitatus) and redsteenbras (Petrus repestris) now constitute an almost insignificant catch.<sup>50</sup> Catchers of geelbek, yellow-tail (Seriots lalandi) and blue hottentot (pachymetopan), yellow-tail (Seriota lalandi) and blue hottentot (Pachymetopan aeneum) in Natal and Transkei waters increase noticeably especially between July and November.<sup>51</sup> Despite all this deterioration of species, rock-lobsters along the Transkei coast and Natal are seen not to be over-exploited.<sup>52</sup> The impact of exploitation is still minimal and extinction can still be prevented. Fielding (supra) points out that the fact that extinction stage is not yet reached does not mean that poaching of under-sized animals does not occur in both Natal and Transkei. Poaching in the region has a marked effect on egg production and could lead to recruitment failure even at reduced levels of fishing. The control of this practice seem to be difficult especially in Transkei where fisheries enforcement officers are few. Animals caught at night are reported to be dead when presented for sale to tourists the following day.

Information was also obtained from contemporary middens associated with homesteads located between Nqabara river and Humans Rock.<sup>53</sup> This information was compared with that accumulated during a controlled exploitation experiment within the adjacent Dwesa Nature Reserve. A conceptual model was used to evaluate the consequences of shellfish gathering from the rocky littoral by the indigenous coastal people of Transkei. According to Lasiak this model uses information on life history characteristics and habitat preferences to predict the extent to which a given inter-tidal shellfish population could be either susceptible or resilient to depletion when subject to the traditional gathering practices.<sup>54</sup> The result of the analysis was that the most adversely affected

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50 Garrat P.A. & Van Der Elst R.P. "Status of the Fisher in Natal and Transkei", South African National Scientific Programmes Report (167), p.29

51 Garrat P.A. (1988) "Notes on Seasonal abundance and Spawning of some important offshore Linefish in Natal and Transkei Waters", (1988) 7 South African Journal of Marine Science, p.1

52 Fielding P.J. "Crayfish Along the East Coast" (1994) bulletin 20 South African Association for Marine Biological Research, p.12

53 Lasiak T., "Susceptibility and for Resilience of Rocky Littoral Molluscs to Stock Depletion by the Indigenous Coastal people of Transkei" (1991a) 56 Biological Conservation, p.245

54 Lasiak, op cit, p.246

stocks in the area were those of P. perna and P. oculus. It was observed that the susceptibility of P. perna to stock depletion is related to the sessile habit of this species and the ease with which collectors can remove clumps of individuals.<sup>55</sup> Further she observed that the possibility of increased susceptibility to recruitment failure at geographic extremes, relative accessibility of this intertidal species to collectors, absence of adjacent subtidal stocks and possible distortion of sex ratios within the resident populations resulting from preferential size selection are all factors which may contribute to the vulnerability of P. oculus. Lasiak is also supporting the general feeling that persistent traditional gathering at Nqabara and other areas in the coast has made little impact on stocks despite the fact that over exploitation has become a cause of concern. The reason is that large numbers of immature animals are collected.

It was further noticed that for the infra-tidal species H. spadicea and P. longicosts, and the inter-tidal limpet C. capensis, the risk of stock depletion appears to be intermediate. Patellid limpets and haliotids were observed to have the opportunity to reproduce at least once before attaining the size preferred by the shellfish gatherers. The reproductive potential of exploited population was observed to be less than optimum due to the preferential removal of larger more fecund individuals. Recently, the coast has been experiencing changes in gathering methods. The use of snorkelling equipment and motorised boats which might improve access to currently unexploited subtidal populations could rapidly alter the status of these stocks. Lasiak (supra) reports that dramatic declines in stocks elsewhere as a result of changes in exploitation methodology have been reported for strombid and venerid molluscs. Only the heavy wave action usually encountered along the wild coast will deter all but the most intrepid from using the new collecting methods.

One would conclude therefore that the Transkei coast fish and shellfish species are either endangered, vulnerable or indeterminate but not extinct. In the whole South Africa the consensus of opinion on the marine species is that the available data is not sufficient to specify a conservation status for any species, Correspondees made the point that even though several marine species have declined in numbers and are threatened in commercial terms they are still not necessarily threatening in terms of total extinction.<sup>56</sup>

### 2.3. Possibility of Recovery

Tomalin has observed that ongoing research has shown that recovery of exploited resources is very poor and this demands an effective control.<sup>57</sup> There is a great concern because Transkei is not viewed as an isolated island but forms part of Southern African coastal system. Tomalin further noticed that experiments in Transkei indicate that recovery takes much longer and that stripped areas may in fact never recover because rocks are colonised by limpets of coralling algae which prevent recolonisation of mussels.<sup>58</sup> Lasiak supporting the idea, observed that comparison of the State experimental plots prior to denudation with the situation three years later indicates a radical change in community structure, involving a shift in the relative importance of the major space occupiers.<sup>59</sup> She points out that except one plot at Silaka where re-establishment of mussels approached the level of the pre-disturbance community, the recovery of perna-perna is poor.

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56 South African Red Data Book (1987) - Fishes, South African National Scientific Programmes Report, 137, p.1

57 Tomalin B.J. "Mad About Mussels" (1994) Bulletin 20 South African Association for Marine Biological Research, p.14

58 Tomalin, op cit, p.14

59 Dye A.H. & Lasiak T. "The Ecology of the Brown Mussel *Perna Perna* in Transkei, South Africa: Implications for the Management of Traditional food Resource" (1989) 47 Biological Conservation, p.245

On the other hand exploitation of limpets is minimal.<sup>60</sup> This observation showed that mussels, which are preferred species were abundant. Recovery would be difficult because disturbance occurs in the coast. For instance in rocky inter-tidal zone disturbance may increase species diversity by removing competitive dominants and exposing bare rock which is later recolonised by other species.<sup>61</sup>

The main disturbance in the Transkei coast is human exploitation. Disturbance results from direct effects of collecting intertidal organisms as bait for angling, for commercial gain or for food. In some places in Dwesa, Port St. Johns and Mkambati total denudation was detected. In all these areas perna-perna is one of the species that show signs of being endangered because patters of recovery seem to be variable.<sup>62</sup> Dye is of the view that in all cases the initial mussel dominated communities were replaced by other species assemblages. The true fact is that with time the Transkei coast will soon loose its stability. This means that after all these disturbances it will be difficult for the coast to regain its original state. Lasiak is convinced that perna-perna has low resilience to exploitation and is therefore susceptible to stock depletion.<sup>63</sup> Since extinction is the evolutionary process, Transkei coast is not different from what is happening worldwide. The vast majority of the earth's earlier occupants including large and once dominant dinosaurs and tree ferns have become extinct chiefly as a result of climatic, geological, biotic changes and human impact.<sup>64</sup> Recently, in Transkei human activity has taken over as a primary cause which could lead to extinction.

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60 Dye A.H. "Effects of experimental exploitation on rocky shore communities in Transkei". Sixth National Oceanographic Symposium, Stellenbosch, 6 - 10 July 1987. (unpublished paper), p.1

61 Dye A.H. "Experimental studies of succession and stability in rocky intertidal communities subject to artisanal shellfish gathering" (1992b) 30 Netherlands Journal of Sea Research, p.209.

62 Dye, op cit, p.209

63 Lasiak, op cit, p.245

64 Freeland, op cit, p.88

Dye observed that if disturbance takes the form of human exploitation in which both mussels and limpets are removed, the resulting primary space will be colonised by competitive dominants such as algae or barnacles.<sup>65</sup> He adds that a mosaic of grazed areas and algae results where limpets are totally removed. Dye's research show that these communities are common in the Transkei coast. Lasiak suspects that the persistence of these stocks is probably dependent on the reproductive output from the exploited populations and also on larval immigration from adjacent refuge population.<sup>66</sup>

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65 Dye, op cit, p.215

66 Lasiak, op cit, p.245



## CHAPTER 3

### ROLE OF LAW IN ENVIRONMENTAL PROTECTION

#### 3.1. Reasons for Protecting the Environment

The more publicised view is that the earth is now in the midst of a mass of extinction rivalling great disappearance of flora and fauna of the past.<sup>67</sup> This indicates that most species will be extinct even before scientists are able to identify their existence. According to conservationists this will be a colossal tragedy. The previous Chapter has shown that extinction is imminent in the Transkei Coast. It becomes necessary therefore, that the law should take its course to prevent any unnecessary disaster. That is the reason why environmental academics like Miller<sup>68</sup> quoted the following reasons for the protection of the environment:

- i) Present practical value
- ii) Potential future value
- iii) Intangible value
- iv) Moral duty to preserve

##### 3.1.1. Present practical value

Species of plants and animals currently provide homosapiens with a variety of tangible practical benefits. There is no doubt that humans depend on these species for their survival, by directly consuming them or substances produced out of such plants and animals. These substances could be in the form of eggs, milk and foods produced therefrom. Apart from being of nutritional value, some species could produce essential commodities like cotton, wool, silk, leather, wood, paper, dye etc. Plants can even be a source of many medicinal drugs. Presently, it is only those species which are already identified as of benefit to humans that are not in danger of extinction. The reason is that they are actively safeguarded. This does not mean they are not over-exploited or over harvested, but they are usually safe due to man's self interest.

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67 Miller B. Environmental Law (1994), p.513

68 Ibid

### 3.1.2. Potential future value

As has been mentioned above man is continually discovering new uses of natural organisms. It is difficult to know in time which species will provide new uses in future. The whole ecosystem therefore should be preserved so that it could provide future scientists with enough raw material for experiments. Some currently insignificant species could take on a crucial role in future. Miller points out that some species that are occupying key positions in today's ecosystem may be unable to adapt and unless other species are available to fill the gap.<sup>69</sup>

### 3.1.3. Intangible Value

Species need to be protected and preserved as educational tools and entertainment sources. In aquaria aquatic animals are kept and displayed for the interest of the general public. Furthermore, the popularity of zoos, circuses and televised nature programs is evidence of deep seated fascination of humans with these watchable species.

### 3.1.4. Moral Duty to Preserve

Humans are burdened with a moral duty to preserve the environment. Animals and plants also have a positive interest, satisfaction or realisation of which would appear to be just as intrinsically worthwhile, judged in themselves as satisfaction or realisation of any comparable interest a human being might have.<sup>70</sup> Animals and plants also have the interest to survive. Although most people use nature as they like, there is a line beyond which exploiting these plants and animals would be unacceptable to nature.

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69 Miller, op cit, p.514

70 Regan T., Do Animals have a right to life? - Animal rights and human exploitation (1976), p.201

### 3.1.5. Right of Animals to Exist

Les Brown does not understand why we confine our practical morality to humans when animals have a well being to be considered too and are very much affected by human acts.<sup>71</sup> Species have a right to exist and that right should be protected by law. Man should cease being proud of superiority<sup>72</sup> over animals, overlooking his animality and failing to understand their nature and our oneness with them in the animal world.

Pister, (Executive Secretary of the Desert Fishes Council, U.S) observed that these creatures have a right to continue their evolutionary progression and humans have no right to keep them from doing so.<sup>72</sup> Pister was required to solve an issue of protection of the Devils Hole pup fish (*Cyprinodon diabolis*) raised in America. The reason was that the tiny Nevada pool in which the species had evolved since isolation nearly 50 000 years before was drained by irrigation pumping. Another example given by Pister was an incident where in order to prevent extirpation of the golden trout (*Oncorhynchus aquabonita*) within its evolutionary habitat in the upper Kern river drainage, the Californian Department of Fish and Game found it necessary to eradicate a nearly disastrous invasion of brown trout (*Salmo trutta*) and then to maintain historic evolutionary direction to re-establish both golden trout and sacramento suckers (*Catostomus occidentalis*). Although doing so invited confrontations with anglers, eradicating the brown trout was the only acceptable thing to do. But to reintroduce suckers made fully as much sense because of evolutionary influences exerted by suckers. Further it was observed that suckers had a right to be in the stream both morally and biologically and the golden trout had a right to have them there. Pister emphasised that recognition of such rights for all life forms within the ecosystem is essential to the biocentrism that must under lie any responsible and sustainable fisheries programme.<sup>73</sup>

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71 Brown L., Cruelty to animals: Practical Morality and the Moral Debt (1988), p.29

72 Pister E.P. "Fisheries", *American Fisheries Society*, Vol 20 No.4 April 1995, p.29

73 Ibid

Some academics suggest that animal liberation and environmental ethics may thus be united under a common theoretical umbrella even though, as with all the laminated layers of our social ethical accretion, they may occasionally come into conflict.<sup>74</sup>

All life forms sharing planet earth with humans have a biotic right to exist regardless of their economic advantage to humans. They have various individual contributions to biotic integrity and stability. Stone, in his essay "Should trees have a standing" equated the environment with society by giving it the status of a right holder.<sup>75</sup> Stone regards natural objects as inarticulate members of the ecological group which cannot speak. It is the responsibility of humans who know the value of these objects to speak for the entire ecological community. The fact that these limited resources are spread amongst ever increasing human populations, each seeking a high standard of living becomes a problem. The only solution is resorting to the courts for relief and establishment of legal rights for species and whole ecosystems.

There is hope that the Bill of Rights in our new South African Constitution will include some environmental rights, though these rights still refer to human beings, in the sense that Section 29 of the Constitution Act No.200 of 1993 accommodates a right of persons to have an environment which is safe and not detrimental to his health or well being.<sup>76</sup> What is still missing is the rights of our fauna and flora and time is running short to save them. The general view is that this environmental clause may force the state to spend money on the environment, which will have no practical effect if the state does not have financial resources to guarantee high environmental standards. The suggestion is that the State should be spending money on other things like health, housing and education.<sup>77</sup> On the other hand, it should not be forgotten that there will be no health, housing or education if the ecosystem is allowed to reach the extinction stage. For food, housing and education man depends on these natural resources. If the trees are cut there will

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74 Baird J. Callicot, In defence of land ethics: Essays in Environmental philosophy (1989), p.59

75 Stone C., Should Trees have a Standing (1972), p.11

76 Glazewski J. & Grant Wroe-Street Environmental Issues (1993), Vol 11, p.24

77 Glazewski & Grant Wroe-Street, *op cit*, p.24

be no shelter. Moral duty to preserve the environment remains.

### 3.2. ENFORCEMENT PROCEDURES

Law may be enforced by compulsion and coercion, or by conciliation and compromise.<sup>78</sup> Writers have observed that the conciliatory style of enforcement leads to regulations being poorly enforced or a tradition of relatively weak enforcement prevails.<sup>79</sup> Ball and Bells introduced two British approaches to the problem of enforcement which could be a solution to the Transkei coast problem as well. They suggest that Regulatory bodies should embark on the following models:<sup>80</sup>

- i) Cooperative model
- ii) Confrontational approach

#### 3.2.1. Cooperative Model

This model involves mutual understanding between the enforcers and the offenders. It is usually the primary enforcement procedure. This conciliatory style is remedial or a method of social repair and maintenance or assistance to people in trouble. This model usually improves a bad situation. The strategy seeks to prevent harm rather than punish an evil. It aims at attaining broad aims of legislation rather than sanctioning a breach. Usually, recourse to legal process is rare. This compliance strategy is concerned with repair and results, not retribution. Many a times it relies upon bargaining to attain conformity. Enforcement becomes a matter of responding to a problem and negotiating future conformity to what is required by the legislature or standards determined administratively.

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78 Hawkins Keith, Environment and Enforcement; Regulation and Social Definition of Pollution (1984), p.3

79 Hawkins Keith, op cit, p.3

80 Ball Simon and Bell Stuart, Environmental Law (1991), p.102

### 3.2.2. Confrontational Approach

The confrontational approach on the other hand involves penalising persons or juristic persons failing to comply with the requirements of the environmental legislature. Unaccepted conduct is prohibited by punishment. Conformity with the law is usually a consequence. Enforcement becomes a matter of determining harm, detecting the law-breaker and fixing the appropriate sanctioning. The question is whether the law has been broken and whether an offender can be detected. If so, the breach deserves punishment. But prosecution in extremes (serious cases) is always a guideline. Its objective is not to maximise the income to the exchequer by getting fines, but to make the best use of our ecosystem. More cooperation results if prosecution is kept as a last resort. Before resorting to criminal sanctions, regulatory bodies are required to exhaust all the necessary devices to deter the wrongdoer from continuing with unacceptable activities. Immediate prosecutions are believed to have an element of upsetting the offenders to such an extent that cooperation is suddenly demolished.

### 3.3. LOCUS STANDI IN JUDICIO

Our legal system has not yet developed means to ensure enforcement of environmental legislation by private action. This makes the difference between environmental legislation and other legislation. Further, it is not possible to rely on private interest in order to have environmental legislation actually applied. The general public should be affected not an individual. Public authorities should take over as the action will serve the general interest. It is appreciated that the law commission has recommended that locus standi in terms of which any interested party may act on his own behalf or on behalf of a particular group or class of persons without having to prove actual injury, should be recognised in the Bill of Rights.<sup>81</sup>

### 3.4. COURT ACTIONS

#### 3.4.1. Civil Actions

Recently there has been a growing interest in the use of Civil Law mechanism as a tool for environmental protection. For example the E.C. environmental policy recognises civil liability as fitting well in the environmental policy, such as the

polluter pays principle<sup>82</sup>. Environmental crimes always rest on strict liability and this leads to caution rather than fault becoming a dominant factor for finding liability. The only questionable issue is whether all activities should be subject to strict liability or it is limited to hazardous activities. This issue is still unresolved. Civil liability has an advantage of emphasising shared responsibility as it forces the producers to reduce risks themselves.

#### 3.4.2. Criminal liabilities

These are appropriate only in situations of wilful or negligent misconduct, such as may be indicated by continuing violation and failure to respond to earlier enforcement efforts.<sup>83</sup> In Britain in recent years the regulatory agencies have shown an increased willingness to resort to prosecutions.<sup>84</sup> This resulted from increased number of criminal offences for non-compliance with the provisions of the environmental legislature. In the United Kingdom there is now a firm commitment to set up an environment agency which would look at the criminal offences to the environment.<sup>85</sup> The proposal in the Bill was meant to establish an agency which would control both land and water.

### 3.5. Problems of Criminal Sanctions

It is already mentioned that criminal sanctions should be a last resort. The reason is that environmental protection by means of criminal law poses some problems. The following basic problems were detected:<sup>86</sup>

- a) Relationship between Criminal law and Administrative law;
- b) Facilitating the establishment of criminal responsibility;
- c) Special group offenders;
- d) Adequate sanctions;

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82 Ball Simon & Bell Stuart, Environmental Law (1991), p.99

83 Yeager P., The Limits of law (1992), p.254

84 Miller, op cit, p.17

85 Rosalind Malcolm A Guidebook to Environmental Law (1994), p.67

86 Lomas Owen (editor) Frontiers of Environmental Law (1992), p.77

### 3.5.1. Relationship between Criminal law and Administrative law

The environment needs to be protected against activities either from industries or exploitation by human beings themselves. These activities may lead to more serious problems which are environmentally unacceptable, or difficult to define or classify. Sometimes such activities may be seen morally neutral. Frequently legislators leave it to the administrative agencies to decide whether an activity is permissible or acceptable. Administrative regulations are issued thereof. On the other hand in order to determine the scope of criminal liability, penal law has generally deferred in the definition of socially acceptable or unacceptable behaviour made by the administrative law. Basic unresolved problems arise from the existence of "mala administrative prohibita".<sup>87</sup> Problems are always experienced where penal and administrative law are closely interconnected. The potential danger being the inflation of criminal law and impairment of the penal legitimacy of real crimes.<sup>88</sup> Complete separate courts, agencies and different enforcement strategies could save the situation.

### 3.5.2. Facilitating the establishment of Criminal Responsibility

Causal relationships are difficult to prove where environmental damage is concerned. Further, it is always difficult to prove knowledge of violation of relevant administrative regulations. It is therefore still a problem whether given such difficulties of proof, an easing of evidence needed to establish causation and mens rea would appear appropriate.

### 3.5.3. Special Group Offenders

Environmental criminal law is experiencing some problems concerning a variety of actors who are directly or indirectly responsible for environmental damage but whose organisational structures make imputation of criminal liability impossible. It remains a question as to whether liability for activities of enterprises should be made more effective, or should it be possible for officers of an administrative agency to be held liable as well.

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87 Lomas, op cit, p.80

88 Ibid



#### 3.5.4. Adequate Sanctions

The general feeling is that the available sanctions are inadequate. The question to be addressed is whether classical criminal sanctions i.e. fines and imprisonment are sufficient as repressive instruments.

Further, it should be considered whether the range of sanctions could be extended. Criminal law may approach the structural limits of potential. There are still limits to the extent to which criminal law can be manipulated. It can be argued that basic structural principles designed to provide for certainty of law cannot be modified or disregarded without resulting detrimental effect on the entire system of repressive control. On the other hand, refraining from developing criminal law would be to disavow the function of criminal law system when the threat of ecological disaster is imminent.

## CHAPTER 4

### ENVIRONMENTAL CONSERVATION IN TRANSKEI

#### 4.1. CONSERVATION LEGISLATION

##### 4.1.1. Prior 1992

Throughout the world the 1970's are known as an era of environmental concern and the passing of environmental legislation for the protection of the environment. The 1970's and 1980's marked a period of significant changes in the conservation patterns.<sup>89</sup> Prior 1973 Transkei sea fisheries were regulated by the Fisheries Act No.10 of 1940 as it formed part of South Africa. It was only in 1973 when the Transkei became a self-governing state that the Fisheries Act No.58 of 1973 was introduced. During the independence of the country this Act was repealed by the Sea Fisheries Amendment Act 22 of 1976.<sup>90</sup> For some time during independence of Transkei this Act continued to be used for the conservation of the marine resources. When the Government of the Military Council took over, the Environmental Conservation Decree No.9 of 1992 repealed the Sea Fisheries Amendment Act 22 of 1976.

##### 4.1.2. Introduction of the Environmental Conservation Decree No.9 of 1992

The final step taken by the Military Government in Transkei to combat the problem of extinction was to introduce the Environmental Decree No.9 of 1992. Though it is not a solution that much, some of its provisions were able to solve the problem of extinction. On the other hand, it needs one to mention that some of its provisions were a failure.

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89 Fuggle R.F. & Rabie M.A. Environmental Management in South Africa (1992), p.11.

90 Environmental Conservation Decree No 9 of 1992

The purpose of the Decree is seen in its preamble which states that the Decree was introduced to:

"consolidate and amend the laws relating to the conservation, management, protection and commercial utilisation of indigenous fauna and flora and their habitats on land, in fresh water and in the sea excluding the national parks; to provide for the establishment of the Council for the environment; to provide for the establishment and management of the national wildlife reserves, protected natural environments, limited development areas, camping areas, hiking trails, water catchment areas and a coastal conservation area; to provide for the establishment of the environmental conservation fund; to provide for the matters relating to sea and sea-shore, and to provide for incidental matters."

## **4.2. PROVISIONS OF THE DECREE**

### **4.2.1. Administration of Conservation**

Administration of conservation is vested on the Department of Agriculture and Forestry. The Director-General working under the authority of the Minister has a responsibility to supervise.<sup>91</sup> The Department of Agriculture and Forestry is required to investigate, carry out projects, make surveys and to conduct experiments necessary to conserve the environment.<sup>92</sup> Should there be a need to acquire property movable or immovable, the Department has a duty to do so without any limitation. The Department can go to the extent of taking any measures including breeding and distribution of protected game, hatching, acclimatisation of fish, and stocking and re-stocking of waters with fish.<sup>93</sup> The Minister becomes an overseer of all practices and movements within the Department. He is required to determine the general policy concerning the

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91 Sect. (2) (1)

92 Sect. 3

93 Sect.3(d)

protection of the ecological processes, natural systems and areas of exceptional beauty and preservation of biotic diversity. To facilitate the understanding of the policy by the public, he makes some notices in the Government Gazette.<sup>94</sup> When determining the policy the Minister has to consult any Minister whose Department is directly involved in the environmental matters, including the Minister of Finance and the Council.<sup>95</sup> The Minister could substitute, amend and withdraw the policy determined by him as he deems necessary, but when doing so, he should notice the public through the Gazette.<sup>96</sup>

Another wing of administration is controlled by the Director-General. He is responsible for ensuring the survival of any species of endangered flora and fauna.<sup>97</sup> He can also cause them to be picked or gathered for the purpose of preserving them. Sometimes he may remove some of the species to the National Wildlife Reserve.<sup>98</sup> Should he notice that an aquatic growth is injurious to certain species, he can order in writing that the owner of the private property destroy such growth. Should the owner of the private property fail to comply within a period of six months from the date of the order, the Director-General may destroy the growth and recover costs from the owner of the private property.<sup>99</sup>

At the base of the conservation administration hierarchy is the conservation officer and rangers. According to the Decree, a conservation officer is deemed to be a peace officer.<sup>100</sup> He has a right to arrest without warrant anybody committing an offence under the Decree. He is vested with powers to demand licence, permit or any authorisation from any private owner for performing any

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94 Sect. 4(1)(a)

95 Sect. 4(1)(2)

96 Sect. 4(3)

97 Sect. 5(1)

98 Sect. 5(1)(i)

99 Sect. 5(1)(2)

100 Sect. 7(1)

act within the protected environment.<sup>101</sup> He may conduct investigations without warrant to ensure that the provisions of the Decree are complied with and during such investigation he may enter any land, premises, place or vehicle.<sup>102</sup> Should he find any person in possession of an animal, carcass or any plant he may seize or confiscate without warrant.<sup>103</sup> Such seizure should be reported to the Magistrate or police within 48 hours.

#### **4.2.2. National Wildlife Reserves**

The Decree provides that the State President may by proclamation in the Gazette declare a portion of land, territorial waters, seashore tidal river or tidal lagoon to be a protected National Reserve.<sup>104</sup> The purpose of such Reserve is to protect, preserve and provide for reproduction of both exotic and endemic wild animals and indigenous flora.<sup>105</sup> There is a need that these plants and animals should be kept or propagated in their natural state. Natural Reserves are meant to protect and preserve any natural objects for geological, archaeological, historical, oceanological, educational and scientific purposes.<sup>106</sup> They could also provide opportunities for study and research apart from their natural environmental beauty.

The Director-General is burdened with a duty to control, maintain, develop and manage the National Wildlife Reserves. The continued existence of these reserves depend on him. In performing his duties he has to co-operate with the treasury. He determines the charges and fees to be paid by the visitors for accommodation.<sup>107</sup> Fishing and hunting permits are also obtained from the

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101 Sect. 7(1)(b)  
102 Sect. 7(1)(f)  
103 Sect. 7(1)(i)  
104 Sect. 7(2)  
105 Sect. 27(1)(a)  
106 Sect. 27(1)(i) & (ii)  
107 Sect. 28(2)(i) & (3)(b)

Director-General. He could issue much of such permits when he sees a need to control or reduce the numbers of any species. Natural Reserves are equipped with a variety of restrictions and prohibitions. For instance individuals are not allowed to enter, convey, hunt or kill fish in the National Wildlife Reserves. Should there be necessity to do so, one should get a permit from the Director-General.<sup>108</sup>

#### **4.2.3. Available National Wildlife Reserves**

Figure 1 shows the distribution of National Reserves over the Transkei coast. They are found at Dwesa, Cwebe, Hluleka, Silaka and Mkambati.

##### **a) Cwebe Nature Reserve**

The Cwebe Nature Reserve is situated north of and adjacent to Dwesa and separated by the Mbashe River. This reserve comprises about 2140 ha and is composed of forests, grasslands and quiet beaches.<sup>109</sup> There is also a beautiful sandy beach stretching from North of the Mbashe river to a rocky outcrop known as the "sharks island". This is regarded as the most popular fishing spot and rewarding for shellfish collectors. The coastline is rocky with sandy bays at the river mouths. Shells are usually found anywhere along the shore and fishing is a usual practice.

##### **b) Dwesa Nature Reserve**

Butchart describes the Dwesa Nature Reserve as a wonderful blend of coastal forest, open grasslands, winding rivers and diverse coastline which makes up to 3900 ha.<sup>110</sup> The reserve is known to be amongst the most attractive in Southern Africa. The

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108 Sect. 29(1)

109 Butchart, op cit, p.28

110 Ibid

North Mbashe river and Nqabara in the South form boundaries to the reserve. Further, Buchart noted that the base of the rocky outcrop at the mouth of the Mendu river is good for shell collection. Catchers usually find oysters as well. All the characteristics of the marine creatures seem to be available. Fishing by locals is a dominant feature in this area.

**c) Hluleka Nature Reserve**

Hluleka is a beautiful hilly coastal reserve which is formed up by a rocky seashore, lagoons and evergreen forests. Though it is not known for fishing, it has a variety of wild animals such as Burchell's Zebra, blesbuck and blue wildebeest. These animals have been introduced into the reserve and they appear to be doing well in the area. Apart from wild animals, the banks of the Hluleka river are noted for a variety of invasive alien plants, trees like mango and guava are a common phenomenon of this reserve. Hluleka Nature Reserve is typical of a few coastal zones that the Transkei Government was able to care for.

**d) Silaka Nature Reserve**

This reserve is also known for a wide variety of wildlife. It is not popular for fishing. It is situated in a forested valley south of Port St. Johns.

**e) Mkambati Nature Reserve**

The size of this reserve is 8000ha. Its natural vegetation is mostly grasslands and there are few streams cutting through the reserve and they make it more beautiful. Examples of such streams are the Msikaba and Mtentu. The available red Hartebeeste, Blue wildebeeste, Blesbuck and Gemsbok were introduced into the area as in other reserves in Transkei. This sandy rocky coastline provides shells but fishing is still in its infancy.

#### **4.2.4. Criminal Offences**

The Department of Agriculture and Forestry has a duty to ensure that no offences are committed which could disturb the safety and beauty of the environment. Any person who contravenes any provisions of the Decree or who fails its provisions is guilty of an offence.<sup>111</sup> This will also be the case with those who fail to comply or contravene any terms, conditions or restrictions of any permit or licence. Further, nobody is allowed to be in possession of any wild animal including fish or carcass unless he is able to explain satisfactorily why he posses such an animal.<sup>112</sup>

#### **4.2.5. Penalties**

On the first conviction, any person who has committed the above offences shall be liable to a fine not exceeding twenty five thousand Rand (R25 000,00) or imprisonment for a period not exceeding two years or both to such fine and imprisonment. On the first or subsequent conviction for an offence involving a horn of a rhino or ivory from the tusk of an elephant or hippopotamus or killing of a whale, the penalty shall be a fine not less than R15 000,00 but not exceeding R100 000 or imprisonment for not less than one year but not exceeding seven years or both such fine and imprisonment for each horn, tusk (whether whole or not) or whale involved.<sup>113</sup> On a second or subsequent conviction one would be liable to a fine not exceeding R50 000,00 or imprisonment for a period not exceeding six (6) years or both to a fine and imprisonment.<sup>114</sup>

The Court may in addition to the above penalties:

- (i) Cancel any licences, permits or authorisation previously given to any person committing an offence under the Decree;

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111 Sect. 81

112 Sect. 81(e) & (j)7

113 Sect. 81(2)(a)(i)

114 Sect. 82(1)(a)(ii)



- (ii) Prevent him from obtaining any licence, permit or authorisation for a period not exceeding five years;
- iii) The offender may forfeit any vehicle<sup>115</sup> or instrument used for the purposes of committing an offence.<sup>115</sup>

### 4.3. COASTAL CONSERVATION

#### 4.3.1. Conservation Boundaries

On the landward side of the entire length of the seashore a coastal conservation area of 1000m wide is demarcated. It is measured in relation to the sea as distinct from the tidal river and a tidal lagoon from the high water mark.<sup>116</sup> It is also measured in relation to tidal river or tidal lagoon from the highest water level reached during the most stormy period of the year, excluding the exceptional floods. Excluded in this area are the National Parks, National Wildlife Reserves, municipal land and seaside resorts. Nothing may be removed, constructed, developed or disposed in this area unless there is a permit to do so. Picnics are prohibited. Authorisation to do so is issued by the Department of Agriculture and Forestry in accordance with the plan for the control of coastal development approved by the resolution of the Military Council.<sup>117</sup> Vehicles are also prohibited in this area unless authorised by a permit.

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115 Sect. 82(3)

115 Sect. 39(1)(a)

117 Sect. 39(2)

### 4.3.2. Commercial Fishing

The Minister is vested with powers to declare commercial fishing harbours. In doing so, he is required to confer with the Minister of Local Government and Land Tenure and the Minister of Transport.<sup>118</sup> Further, he has to notify the public of such commercial fishing harbours through the Government Gazette. Foreign vessels in the fishing zones fish according to conditions determined by the President. There should be prior agreement between such foreign state and the State President by which the foreign State is permitted to fish. The arrangement excludes the territorial waters. The Director-General will issue a permit for fishing in respect of foreign vessels.<sup>119</sup> Such permit gives authorisation to the commercial fishermen to fish within the fishing zone.<sup>120</sup> The permit given stipulates the period, conditions and restrictions of fishing, and the applicant is required to pay fees for the permit. Fees are determined by the Minister in concurrence with the Minister of Finance.<sup>121</sup> The permit may be cancelled or amended by the Minister or he may alter conditions, restrictions and fees as is necessary.

Commercial fishermen using vessels registered in a foreign State within the territorial waters or fishing zone excluding the territorial waters without a permit are regarded as offenders.<sup>122</sup> They are liable on conviction to the forfeiture of the vessel itself and all fish that has been captured. A fine imposed is not less than R250 000,00 but not exceeding R1 000 000,00 or to both forfeiture and imprisonment for a period not exceeding seven years or to a forfeiture, fine and

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118 Sect. 51  
119 Sect. 52(2)  
120 Sect. 52(2)  
121 Sect. 52(3)  
122 Sect. 52(4)

imprisonment.<sup>123</sup> Commercial fisherman are not allowed to catch fish without a permit. (Section 53(1))<sup>124</sup> Further, premises and vessels are not to be used as fish factories unless there is a permit issued. Permits are not issued unless the vessel is registered or licensed in Transkei in terms of the Merchant Shipping Act 57 of 1951.<sup>125</sup> The Minister is vested with powers to refuse the issue of permits in the following conditions:

- i) If he is satisfied that the interests of the fishing industry or of maintaining the abundance of fish caught by commercial fisherman, should be limited to a certain area; or
- ii) The harbour facilities are inadequate to accommodate more vessels; or
- iii) The harbour, landing, storing, or handling facilities in a particular commercial fishing harbour are inadequate to deal satisfactorily with more than the catch of the commercial fishermen already making use of the harbour, he may discontinue giving permits for such period as he deems fit.<sup>126</sup>

Regulation 3 becomes more specific as it controls the catch or attempt to catch fin-fish in waters including sea and inland waters, save under the conditions of the non-commercial fishing permit issued substantially in the form prescribed in Schedule F and payment of fees prescribed in Schedule R. The form includes catching of fin-fish in the sea including tidal rivers and tidal lagoons and inland waters outside the area of National Park. A fee to be paid is R30,00 payable annually. Commercial fishing boats pay R50,00 per vessel less than 5.5m in length and R100,00 per vessel of 5.5 or more in length. These provisions do not apply to a Transkei citizen catching fin-fish for his personal use from the shore of any waters within or abutting on the district in which he resides.

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123 Sect. 52(4)

124 Sect. 53(1)

125 Sect. 53(1) (a) & (b)

126 Sect. 53(8)

All commercial fishing boats are required to bear the Transkei registration letters (TK) and numbers painted in yellow on a black background.<sup>127</sup> No vessel is permitted to operate as a commercial fishing boat from any harbour or place except in Mzamba beach in Bizana, Port St. Johns, Mapuzi at Mqanduli and Qora Mouth at Gatyane (Willovale).<sup>128</sup> From time to time the holders of the commercial fishing permits are required to report to the Director-General about the fish caught or any information needed by the Minister.

#### **4.3.3. Fish Disposals**

The Minister is vested with powers to control fish disposals. Commercial fishermen are not allowed to catch, deliver or sell any fish belonging to any species unless such disposal is approved by the Minister.<sup>129</sup> He usually gives permit as a form of authority. The public is notified of the prohibition through the government Gazette. No person is to possess at any one time of the total of more than 5 fin-fish except in terms of a permit.<sup>130</sup> A person is allowed two fishes of the species redsteenbras, seventy four poenkop or mussel cracker at at time. One may catch more if the permit allows. Commercial fisherman are prohibited from disposing more than a specified quantity of fish belonging to a particular species during a specified period.<sup>131</sup> Such control is also reflected in the case of fin-fish where it is prohibited to possess a mass measuring in k.gm, or length measured in mm., in a straight line from the tip of the snout to the extreme end of the tail, less than prescribed in respect of the species mentioned in Schedule A. Schedule A provides the following length for the following species:

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127 Reg. 15  
128 Reg. 16  
129 Sect. 54(1)(a)  
130 Reg. 4(b)(i)  
131 Sect. 54(1)(e)

<b>Common name</b>	<b>Scientific name</b>	<b>Length (mm)</b>
Mussel cracker, brush cracker	<i>Spodon-durbanensis</i>	600
Poenskop, Blacksteenbras	<i>Cymatoceps nasutus</i>	500
Snoek Cape	<i>Thyrsites</i>	400
White Steenbras	<i>Lithognathus Lithognathus</i>	600
Seventy four	<i>Polystegamus undulusus</i>	400

Should the holder of a permit contravene regulations and conditions of disposal he may forfeit his permit

#### **4.3.4. Protection of Marine Animals**

During specified periods the Minister may prohibit catching or disturbing of all fish belonging to a particular species. He may also protect fishes against conveyance or removal from one place to another without a written authority of the Director-General and subject to such conditions as he may determine.<sup>132</sup>

Further, fin-fish or bait-fish shall not be exported from Transkei without written authority of the Director-General because disposal permits of fin-fish or bait-fish are issued in terms of the National Parks Act 57 of 1976. Fish is also protected from dangerous methods of catching. Use of nets and traps is prohibited unless it is a landing net or a throw-net used in terms of the throw-net or handnet allowed by a permit.<sup>133</sup>

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132 Sect. 55(a) & (c) and 56(1) & (ii)

133 Reg. 5(ii) & (iii)

To preserve the environment in its original status, the Decree regulates the removal of marine plant and shells and the recovery of salts from the sea or sea-shore. Such powers are vested on the Minister of Agriculture and forestry.<sup>134</sup> He is required to take action after having consulted the local authorities and the Council of the area concerned. One permit is issued for a particular area. It is important to note that he has a discretion to act as he deems necessary. For instance, if he feels that the issue of a permit could encroach upon the enjoyment of sea-shore or the sea by the general public, he should at least three months before issuing the permit publish in the Gazette or in one of the newspapers circulating in the area, his intention to prohibit the removal of such plants and animals from the area concerned.

The Decree Regulations 7 and 8 emphasises the protection of rock lobsters (Crayfish). No person is allowed to catch or attempt to catch any rock-lobster other than an East coast rock lobster. The quantity is restricted to not more than 5 East Coast rock lobsters. One can catch more if he is in possession of a Hotel permit. Further, it is required that one should only catch a rock-lobster that is not less than 65mm as measured along the mid-dorsal line of the carapace from the centre of the edge which connects the two enlarged anterior spines to the middle of the posterior edge of the carapace.<sup>135</sup> Rock-lobsters carrying eggs or showing signs of having been stripped off of eggs should not be caught.

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134 Sect. 57(1)(a) & (b)

135 Reg. 7

#### 4.3.5. Environmental Conservation Measures

Angling Clubs are officially recognised. For such recognition, the procedure is that the club should apply to the Director-General, submitting a copy of its Constitution as well. Should the Director-General approve, the club will be informed in writing. All approved applications are recorded in a register.<sup>136</sup>

When registered clubs are interested to conduct angling competitions, they do so on condition that they get written authority from the Director-General. All applications are made in writing. Authority given is always subject to conditions required to conserve the environment. The Director-General may amend, vary or withdraw the consent as he deems necessary. Members of the public are restricted from discarding, dumping or leaving any litter on any land, water or place except in containers.<sup>137</sup>

#### 4.4. CRITICAL ANALYSIS OF THE PROVISIONS OF THE DECREE

##### Introduction

The Decree No 9\1992 has played the most important role in improving the conditions of the environment on the Transkei Coast. On the other hand, the general view of the public is that some Sections need to be amended to suit the needs of the environment. The following Sections have attracted my attention as some are motivating and others unconvincing.

1. Section 27: The Decree has proved to be successful in the protection and preservation of the environment. Control and management of the national wildlife by introducing reserves, has not only conserved the environment but brought income to the State, as tourists are required to pay a fee when entering any National Wildlife Reserve. Also, the natural beauty of the environment is not only kept in its original state but is capable of attracting tourists. Though the Section proves to be positive, it will need to be amended to provide for the establishment of more complex marine reserves along the Coast. This does not mean that the present ones do not serve the purpose. The Transkei Coast needs more conservation areas.

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136 Sect. 63(1) &(2)

137 Sect. 65(1)

2. Section 28: It is discouraging to notice that the Decree vests most of the powers to the Director-General. For instance, handling of monies for restoration and preservation of land should have been vested to a separate body and the Minister of Finance. It is questionable that the Director-General may in his power sell, exchange or donate any protected wildlife animal, protected game, ordinary game in a National Wildlife Reserve. There is no guarantee that he can not sell or exchange for his own benefit. The Section fails to expatiate as to whom the Director-General is accountable for such sales or exchange.
3. Section 39: The Section provides rules for coastal conservation which are highly commendable. According to my personal observation (as one of the teachers who would time and again take students to the coast for farewell functions and picnics) there was never any organised permit to visit the Coastal Conservation Areas. Officers or rangers would be seen during the day time only. Nobody would supervise our students in the evenings. Nobody would care as to how or where we enjoy ourselves at night. The usual practice of destroying plants and littering is a contravention of Section 39 itself. Our students would not even care to clean the place. There was never any reprimand following such behaviour.
4. Section 52(i): The Section provides for strict supervision of foreign vessels entering the Transkei coast. It emphasised that they should fish on condition that they have a permit. On the other hand Feely's personal view (Administrator in the Nature Conservation Department) is that a major problem is that of culprits who might be committing offences at night. Nobody is able to account for the damage they are causing. It is possible that the damage is incredible. To make the provisions of Section 52 work, one would expect the Department of Agriculture and Forestry to employ more supervisory staff so that the wrong-doers could be brought into book. It has been observed that organisational structures are totally inadequate and some posts in the Department remain vacant.<sup>138</sup> Further, it has been noticed that there are few members of staff suitably trained as administrators, wild-life marine managers and researchers. It is recommended that a strong supervisory body be formed which would operate day and night checking permits from any vessel entering the coast.



5. Section 54: Disposal of fish needs control. The Decree is credited for having introduced restrictions and prohibitions regarding disposals, but it is regrettable that it does not go any further as to say how disposal could be controlled practically. For example, Section 54(i)(e) prohibits even approved persons from disposing during a specified period, of more than a specified quantity of fish belonging to a particular species, but nowhere or at no stage one would see an officer taking rounds to detect unacceptable disposals. The provisions of the Decree therefore become a paperwork affair.
6. Section 56(1): Protection of fish in the form of restrictions in catching methods is highly commendable but it is unbelievable that Xhosa and Pondo groups are still catching and selling crayfish and other species to tourists in any quantities. They continue with such practices despite Section 56(l)(f)(iii) prohibiting possessing, offering for sale or disposal of fish in any other manner. This Section read in conjunction with Regulation No.7 of the Decree which states that no person shall catch or be in possession of East Coast rock-lobster during a closed season prescribed by Schedule C is usually violated without any repent. Nothing has ever been done to correct the situation. Schedule C provides the following closed seasons:

East Coast Rock-Lobster -		1 November of one year to the last day of February of the following year, both dates included.
Poenskop -		1 September to 30 November of any year, both dates included.
Seventy Four -		1 September to 30 November of any year, both dates included.
Shad -		1 September to 30 November, both dates included.
Trout -		1 June to 31 August of any year, both dates included.

7. Section 75(1)(c): The Section gives power to the Minister to regulate and prescribe the methods of catching fish belonging to a particular species. Further, the Decree, through regulation 6(a) avoids use of rock-lobster traps and nets for catching fish. The Regulation commends a landing-net to be used as an aid in catching fin-fish by angling or spear fishing. Section 75 does not say anything about traditional methods of catching. As has been pointed out (Chapter 1) it has been observed that indigenous people even go to the extent of using spades and iron-bars to remove shell-fish. Breakages always occur. Such practice continues despite Regulation 9(d) restricting use of spades, forks, ploughs or any implement of which the thick edge is more than 38mm in length. It is therefore suggested that the indigenous populations should be informed of any unacceptable implements they use. Many a times they use such apparatus out of ignorance.
  
8. Section 81: The Section specifies offences for contravening the provisions of the Decree. These offences solely safeguard the interests of the environment. This Section could be read in conjunction with Section 29(1) which looks at the interests of National Wild-life Reserve. Offences such as picking, cutting, damaging, removing or destroying aquatic and marine plant life are totally prohibited in National Wild-life Reserves. Despite the above provisions the Daily Dispatch of 5 September 1994 reported that it has been observed by the MEC for Agriculture and Environmental Affairs of Transkei Dr. Tertius Delpont that local people had taken over Cwebe Reserve and were plundering it for marine resources and timber. The issue became critical when locals continued disturbing the environment in the area despite a warning. It has also been reported that even the Nature Conservation Officers are aware of these malpractices but it is difficult for them, to take preventive measures since they are threatened with death by lawless elements who tell them that it is their land and the Government has no say over it.

The Daily Dispatch also reported that there is not enough manpower available and conservation officers are not equipped for confrontational situations. According to Dr. Delpont, destruction in the area is costing the Government millions of rands. In September Dr Delpont took the matter to the provincial Ministry of Police Services though there was never any action taken at that time.

Further, he sent one of his strategic managers to negotiate with the people. Such a step was very positive and nearer solving the problem, but unfortunately people refused to leave the reserves. The problem in the Cwebe Reserve became so critical that it was reported on the 11 November 1994 by the Daily Dispatch that the Deputy Minister of Agriculture and Forestry, Miss T. Msane condemned the plundering of Natural Reserves in Transkei as a criminal act. According to Dr. T Delpont (as reported in the Daily Dispatch of 11 November 1994) the matter was to be discussed at the Provincial Cabinet meeting that was scheduled to take place. He mentioned that the MEC for Police and Security Services Dr. M Moehle was giving attention to the issue.

It is therefore highly appreciated that at last the law followed its course. The conclusion was that the Ministry of Police and Security Services was asked to take action against people involved in the illegal harvesting of sea food and chopping down of trees. Transkei police had to co-operate with the conservation officers. It was reported that at last the communities of Cwebe and Dwesa are now recognising the agreement that they would remove their livestock from the reserves and stop cutting trees and plundering marine resources. This move is commendable for it has shown that it is not difficult to enforce the law whenever the provisions of Section 29 and 81 are not observed.

## CHAPTER 5

### CONCLUSION

#### 5.1. Recommendations

The loss of the earth's biological diversity has been one of the most pressing environmental and developmental issues these days. The concept of preservation has been the concern of conservationists in the whole world. This resulted in United Nations Conference on Environment and Development (UNCED) in Rio De Janeiro (June 1992) devoting itself in the firm establishment of "preservation" in both international and national policy statements and legislation.<sup>139</sup> Further, Agenda 21 accepted at UNCED, concerned itself with conservation bio-diversity. It is therefore necessary for South Africa to join the world in its strategies to preserve the ecosystem. South Africa should ratify agreements such as the Convention on Biological Diversity (CBD) signed by the countries that attended UNCED. The 1993 White Paper on policy for a National Environmental Management System for South Africa and the General Environmental Policy issued in January 1994 have already paved the way for such direction. For a long time South Africa has been an outcast in the international community. Now that it has been re-admitted as a member of the United Nations family, the world has shown acceptance by allowing it to host the international celebrations for world environmental day, 1995. It is suggested therefore that South Africa should be committed to preservation measures already followed by the signatories of the Convention on Biological Diversity at UNCED. For instance, the Saldanah Steel Plant controversy presently discussed in the media shows that conservationists in South Africa are still experiencing problems of ignorance within the community, concerning dangers aquatic animals are exposed to. Industrialists are still reluctant to accept that balance should be maintained between "preservation" and "development". There is still no assurance as to how they would save the life of aquatic animals from the industrial effluent, and further, there is no evidence that there was ever any impact assessment conducted. South Africa should follow the example of the international community and become committed to conservation.

The Transkei coast (part of South Africa's East coast) has been noticed to have insufficient invertebrate resources to be able to support the development of commercial fisheries. Most sites are unable to support the nearby populations. It is recommended that commercial exploitation of shellfish should be controlled. Section 52(2) provisions of the Decree stipulating the period, conditions and restrictions of fishing should be

complied with, and strict supervision thereof should be maintained. Denuded areas should be rehabilitated and sustainable exploitation should be observed. On the other hand it has been observed that very little catch and effort data are available for analysis on the Transkei line fishery.<sup>140</sup> For sound management therefore, it is necessary that monitoring of catch and effort data in all sections of this fishery be maintained. It has been observed also that both commercial and recreational ski boats fishing along the Transkei coast target fish species. Redsteenbras, poenskop, dageraad, white mussel cracker, bronzebeam and white steenbras have been noticed to be extremely slow-growing long-lived species which have complex life histories.<sup>141</sup> Fisheries based on slow-growing species are known to be more susceptible to growth, over fishing and stock depletion. For that reason it becomes difficult to manage them.

As Transkei is re-incorporated to South Africa, vessels from another part of this Country will not be regarded as foreign as it used to be the case. Section 52(2) of the Transkei Decree No 9 of 1992 would require an amendment if the Transkei Decree is still in operation. Further, levels of line fish exploitation are expected to increase. The following recommendations therefore could save the situation:

- a) Transkei Fisheries Regulations should remain in force until new Regulations for the whole Country are formulated. Vessels from other regions should not be allowed to operate in Transkei until one Conservation Act is operating in the whole Country.
- b) There should be strict control and supervision of the permit system.
- c) Section 27 should be amended to provide for the establishment of appropriate marine reserves along the Transkei coast. The Oceanographic Research Institute observed that management of the large marine reserves like Tsitsikama National Park and St. Lucia Marine Reserve has been viable for the protection of resident species with complex life histories. If such a large marine reserve could

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140 Oceanographic Research Institute, Transkei Coastal Fisheries Resources (1994), p.117

141 Oceanographic Research Institute, op cit, p.117

be established along the Transkei coast it could provide good protection for over-exploited species. The existing marine reserves at Mkambati, Hluleka and Dwesa do not serve a good purpose as they protect a small portion of the Transkei coast.

- d) It should be born in mind that exploitation in Transkei is a traditional practice which cannot simply be legislated against. It is suggested therefore that community involvement in the management process would be fruitful. Local conditions should be considered as much as possible. A nationwide Fisheries Act with local aspects regarding Transkei or the Eastern Cape region would be a solution to the problem.
- e) Direct means of conserving fish species and stocks include habitat conservation, control of over-fishing methods, effort, efficiency and seasonally, other forms of legislation, construction of fish passes, designation of protected areas, pollution control, benign translocations and captive breeding.<sup>142</sup> But conservation legislation or lists are useless if enforcement and restoration programmes are not effectively carried out.
- f) Contribution by the indigenous peoples should be recognised and ensured. Their knowledge should be improved through education. Eco-clubs and their educational programmes should help to train them in the environmental issues.
- g) Human attitudes should change and accept the fact that these animals need to survive. Conservationists must commit themselves to communication and working with communities to restore the environment to its original status.
- h) It is the duty of the ecologists to educate the politicians about environmental conservation and the need for its restoration when required.
- i) Ecologists, economists and politicians need to work together to develop integrated views of the future which would combine ecological and economic principles

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