South African - Danish Environmental Co-operation

- Towards World Summit on Sustainable Development

DANCED

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PREFACE

Towards the World Summit on Sustainable Development:
Co-operation in praxis

The United Nations' Earth Summit in Rio de Janeiro in 1992 concluded that transferring know-how and technology from richer to poorer nations is a prerequisite for sustainable global development. If all nations are to make their own discoveries and duplicate what is already happening elsewhere, enormous resources will be wasted, ones which could otherwise have been used on improving the environment. Without sharing, we'll run out of time.

As a direct result of the UN Earth Summit, the Danish parliament in 1992 decided to increase foreign aid for environmental purposes. Two years later Nelson Mandela became South Africa's first democratically elected president. These two events paved the way for the extensive co-operation on environmental issues which is the subject of this book. Denmark was able to offer South Africa solutions to many of the problems caused by industrialiszation and economic growth. South Africa was eager to reach world standards for environmental protection as an important part of the transition from apartheid to democracy, targetting industry as well as the degradation caused by overpopulation in the poorer parts of the country.

On the Danish side, the co-operation is administered through Danced (Danish Co-operation for Environment and Development), the foreign aid branch of the Danish Ministry of Environment and Energy. At governmental level South Africa is represented through five ministeries and departments: Environmental Affairs and Tourism, Minerals and Energy, Water Affairs and Forestry, Trade and Industry and Agriculture and Land Affairs. But one of the strengths of our co-operation is that we have managed to include a far wider range of players, including industry and non-governmental organizations.

It has become increasingly clear that no government in the world is able to secure a healthy environment on its own. Co-operation with industry is crucial, not just through tougher legislation on emissions but

even more importantly through cleaner technology aimed at limiting the use of precious resources and reducing the amounts of waste. The non-governmental organizations also have important roles to play: They are not just strengthening the environmental awareness among the general public but also contributing to a healthy debate on environment issues through their insistence on keeping industry and government on track.

This book presents an overview of the co-operation programme and visits a number of projects in the field. The content mirrors the reality: Not all projects have necessarily reached their targets, for South Africa and Danced have embarked on a mammoth task. We nevertheless feel that both Danes and South Africans have reason to be proud of what has been achieved. We are both looking forward to present the results of the co-operation when South Africa is hosting the second UN World Summit on Sustainable Development in 2002.

Svend Auken
Minister of Environment
and Energy
Copenhagen 2001

Valli Moosa
Minister of Environmental
Affairs and Tourism
Pretoria 2001

Denmark's environmental aid

In the aftermath of the United Nations' Earth Summit in Rio de Janeiro in 1992, the Danish parliament decided to boost Denmark's foreign aid with additional funds for environmental assistance. This contribution to global sustainable development is primarily executed through direct co-operation between Denmark and selected developing countries

NATURE AND ENERGY

Denmark's environmental assistance is designed to assist the targeted nations and their population to

- protect nature and promote the sustainable use of natural resources;
- prevent and decrease pollution of air, soil and water; and
- promote the use of alternative energy and a more efficient use of traditional energy resources.

The aid is guided by local needs, which gives it a very wide scope. It, for instance, includes the work environment.

EQUAL PARTNERS

A fundamental principle of the Danish assistance is the creation of alliances between authorities and organizations in Denmark and their corresponding institutions in the recipient country. This can mean government-to-government co-operation or involve partners from municipalities, industry, universities or Danish and local environmental organizations. The Danish parliament is aiming to draw on as many resources in Denmark as possible in the attempt to help the aid recipients.

Most of the environmental assistance is spent on government-to-government programmes. This will typically involve projects aimed at strengthening environmental and energy administration. Projects are identified and planned in co-operation between the Danish Ministry of Environment and Energy and the relevant ministries in the recipient country. The projects are then implemented by local authorities

assisted by Danish consultants, normally drawn from Danish consultancies but also from ministries or local government in Denmark.
A minor part of the aid is channelled through Danish NGOs co-operating with partners in the developing countries. The aim will often be to increase the general public's environmental awareness. Danced has further supported a wide ranging network covering eight Danish universities and several universities in Africa and Asia. Industry has also been involved through a special programme transferring Danish know-how and technology to industries in Thailand and Malaysia.

NEEDS AND OWNERSHIP

Danced is promoting need-driven aid as well as local ownership to the individual projects. In most cases the choice of supported areas is normally (but not necessarily) guided by the existence of Danish know-how and experience in the specific field.

The need for environmental assistance by far exceeds the resources. It is therefore crucial to concentrate on areas where the need is large and activities will have a lasting effect. The selection of these areas happens through constant dialogue at governmental level. The resulting programme will also guide the assistance rendered by private organizations, industry and universities.

Local ownership of the individual projects is secured through a process involving all participants. At two or three seminars ideas are exchanged by all interested parties, guided by a Danish consultant. The resulting project document reflects decisions reached by consensus. This process will hopefully secure local backing of the project when it reaches the implementation phase.

In most cases there will be Danish expertise available in the fields identified as the most important. Danced's partner countries are all in the process of industrial expansion and urbanization and typically fight the same problems experienced by Denmark over the last decades.

THREE TOOLS

Capacity building: The overriding principle for the environmental assistance is capacity building in ministerial departments, other authorities, organizations, industry, universities, schools and media. The aim is to secure the necessary administrative and technical competence to solve problems. But a further and equally important aim is to disseminate understanding of the need for a more thoughtful use of the

environment and natural resources. The involvement of the public in this huge project is of crucial importance to the efforts made by authorities.

Demonstration projects: Parallel to the capacity building, Danced works with pilot projects trying out concrete methods to protect the environment. This can be technological installations, waste collection for recycling, sustainable forestry and attempts to reconcile the needs for conservation and the public's need for natural resources. The idea behind the demonstration projects is obviously to spread the lessons learnt to the rest of the nation and to other countries in the region. But demonstration projects also play a major role in the capacity building process, since hands-on projects usually enhance motivation.

Co-operation: The third tool is assistance to creation of co-operation between relevant parties - Danish and for instance South African NGOs, universities or research bodies. Danced can also spend aid money on helping governments to establish contacts to financial institutions in order to obtain funding for large environmental investments. In this way relatively limited Danish resources can help the recipients to take major steps towards a better environment.

Denmark's environmental assistance to east and central European countries and to developing nations in Africa and Asia is part of the Environment and Disaster Relief Fund (EDRF) set up by the Danish government in 1992. The EDRF will reach half a per cent of Denmark's GNP in 2005, approximately six billion kroner or R5,8 billion. Presently just over four billion kroner is spent annually. Half of this goes to environmental assistance, divided equally between the European countries and developing countries.

Five countries in south-east Asia and 11 in southern Africa have been chosen as targets for the assistance rendered to developing countries. The Danish Ministry of Foreign Affairs is responsible for the aid to the poorest countries while the Ministry of Environment and Energy administers the environmental assistance to more industrialized countries like South Africa, Malaysia and Thailand.

The Ministry of Environment and Energy has established a special unit, Danced (Danish Co-operation for Environment and Development), to handle the environmental assistance to Africa and Asia. Danced's budget in 2001 is just over 400 million kroner. The money is divided almost equally between the two regions in Asia and Africa. From 1994 to 2000, Danced disbursed approximately two billion kroner to 300 larger projects.

Clean-up in a divided nation

South Africa has all the complex environmental problems of the world in one country. Industrial discharge flows through a landscape scarred by erosion and overgrazing

On a beautiful autumn day in 1994, Nelson Mandela was inaugurated as South Africa's first black president following more than 350 years of white rule. Mandela inherited two vastly different worlds in one nation. One was a small piece of Europe on the southern tip of Africa, the other an African world with many of the problems found on the rest of the continent; a sometimes vulgar affluence was the close neighbour to poverty in all its guises.

South Africa's history since 1994 has been marked by often frustrating attempts to make one nation out of these two parallel worlds. Danced was soon to realise that environmental assistance to the new nation could not happen independently of this reality. Interventions, which elsewhere in the world would be purely technical, invariably became part of a political, geographic and socio-economical puzzle in South Africa.

The white world

The nation's former white government defined South Africa as the small piece of Europe they had carved out of the underbelly of Africa since the Dutch explorer Jan van Riebeeck arrived in Cape Town in 1652. The ambition of the apartheid system was a total racial segregation in which blacks were only allowed in the white world as workers and servants.

Geographically, this translated into reserving 87 percent of South Africa's land for the minority population, the whites. On this land you would find all the major cities and most of the best farming land. The black population was to be removed to 10 so-called homelands, divided according to tribes. Four of these homelands accepted their "independence" - a move which every other country in the world labelled a farce - before the system collapsed.

The overall division of the country was mirrored in towns throughout South Africa's white world. The towns each had their township, a ghetto far from the town centre, which in principle would house only the number of workers and servants necessary to keep not-entirely-white South Africa operating. The rest of the population was meant to be deported to the homelands.

The ambition of creating a European nation in Africa succeeded, if we - for a few seconds - forget the racial oppression that had become unacceptable in Europe in the 1960s and 70s. The bureaucracy and the judicial system worked, provided you were white. The army had the best weapons on the continent, including six nuclear bombs, produced by South Africa itself. Profits from gold and diamond mining and cheap black labour secured much of the white minority one of the highest standards of living in the world. In luxury cars, put together on the country's own assembly lines, members of this minority could cruise perfect highways gazing at well-run farms.

But the flip-side of this golden coin was the same environmental problems that industrialized Europe and the USA were fighting. The difference was that South Africa seldom fought for a cleaner environment. There were two main reasons for this. One was isolation, the other a feeling that the country had never-ending resources and space.

Isolating South Africa was the United Nations' attempt to force the apartheid government to introduce democracy or, in other words, to create a system of one-person, one-vote. From the mid-1980s, most countries in the world backed economic, cultural and sports sanctions against South Africa.

While the effects of the economic sanctions are debatable, the mental isolation of the nation was effective. For this reason, the growing environmental awareness experienced elsewhere in the industrialized world during the 1980s didn't seem to reach South Africa.

If anything, UN sanctions reinforced South African perceptions that they were living in a land of plenty. The oil embargo was easily shrugged off by a nation which for 30 years had made oil from coal at a unique plant in Sasolburg, named after the national oil company. For every item hit by sanctions, local industry would churn out copies made from supplies of the country's abundant raw materials.

For many years this feeling of living in a land of petrol and honey, even in times of hardship, kept environmental issues so low on the national agenda that they were hardly visible.

The land was seemingly endless, the sky was high and the mines regarded as bottomless. The national parks were world famous, the Cape Peninsula boasted the highest floral bio-diversity on the entire planet. The sea was so vast it seemed able to absorb any waste.

Or so most people thought. In fact, Mandela inherited a country whose white world had all of the problems of industrialization but very little of the environmental consciousness needed to fight them.

The African reality

The former black homelands and the townships, marred by poverty and overpopulation, represented a South Africa very different to the white one.

In reality, apartheid's ideology of "separate development" meant two sets of standards: a high one for whites, a low standard for every one else. This went for everything, from education and health services to housing, and it also affected the environment. While white South Africa's headaches were created by a luxurious lifestyle and industrialization, the problems facing the black majority were those normally associated with over population.

In the rural areas, this meant soil degradation, overgrazing from too much cattle on too little land and the resulting erosion. In the townships, the environmental difficulties were mainly waste problems, ranging from insufficient sewers to fragmented collection of garbage. To make matters worse, much of the heaviest industry was placed next to homelands and townships.

The environmental problems also had a political dimension related to the struggle against apartheid. While most whites could build the houses of their dreams, blacks were normally forced into small standardized houses - so-called match boxes - which the government had built in the townships. Or it could be the mens-only hostels on the mines or in the townships.

People had no great love for these enforced surroundings and when the struggle against apartheid gained momentum in the 1980s with slogans like "make the country ungovernable", this was interpreted as a sign to attack apartheid's infrastructure, including the townships. Part of this approach was to boycott rents and rates, which led to the breakdown of maintenance of water and electricity supplies.

In the end, both the enforcers of apartheid and its opponents contributed to the slum-like conditions in many traditionally black areas.

One could argue that while white South Africa was environmentally pacified by its belief in endless resources, the black population's apathy towards the environment was caused by the degradation being all too visible and overwhelming.

The new South Africa

With some notable exceptions, environmentalism in South Africa prior to 1994 mainly had to do with national parks and conservation. The country's isolation and political turmoil were of far more importance to the government than anything else.

When the green wave hit Europe and the US in the 1980s, most of the potential environmental activists in South Africa, the young and the politically aware, were busy fighting apartheid. "Our Common Future", also known as the Brundtland Report or the bible of environmental awareness in the industrialized world, was published in 1987 - right at the height of the unrest in the townships. Five years later, when the UN Earth Summit in Rio got the whole world discussing the environment, South Africa was busy with the transition from apartheid to democracy.

This is not to suggest that no one was thinking about the environment. The African National Congress's Reconstruction and Development Plan, put together in 1992, outlines principles for environmental policies that later became a guide for the first democratic government. The new constitution of 1996 mentions environmental rights as a means of safeguarding both present and future generations from harm caused by damage to the environment.

Since 1994, South Africa has had the political will to solve environmental problems found in both of the worlds created by apartheid. But the strained economy has often made it difficult to implement the ideals. The following is a brief overview of the political and socio-economical environment in which South Africa's government and Danced are working.

Political stability: South Africa held its second democratic election in June 1999. Nelson Mandela was succeeded by Thabo Mbeki, his former deputy. With few exceptions the country is beyond the political violence of the years leading up to the first democratic election in 1994. The two largest of the traditionally black parties, the ANC, and the Inkatha Freedom Party (IFP), rule in an often uneasy coalition while the two largest traditionally white parties, the Democratic Party and the National Party amalgamated to form the Democratic Alliance (DA) in June 2000 .

Even if all parties eagerly try to attract voters of all races, these two blocs represent the divisions in South Africa. The ANC/IFP rule via the black vote and see it as their priority to better the life of the poor majority in the townships and rural areas. The DA's voters come from the white communities and - apparently because they feel threatened by the blacks - from the three million people of mixed race ("coloureds"), primarily descendants of slaves from Asia. A major priority for the DA is to ensure that improvements for the majority don't happen at the expense of the economic privileges enjoyed by the lucky few, mainly whites.

Tight financial management: The former Marxists of the ANC surprised everyone when they opted for tight financial policies aimed at a reduction of public expenditure and the budget deficit. Rather than employment in

the civil service, the government preached job creation in the private sector through growth. The ambition is to create a healthy environment for business and thereby attract foreign investment.

The macro economic targets have to a large extent been reached; there is a low inflation rate, there have been cuts in interest rates, and a lower budget deficit. But in early 2001, South Africa was still only beginning to reap small benefits from seven tough years of belt tightening.

The economy has seen constant growth since 1994, but it has barely been sufficient to cover the population growth, particularly as thousands of illegal immigrants have poured into the country from its African neighbours both near and far. The turbulent global economy and South Africa's soaring crime rate, strong labour unions and comparatively low levels of education have allegedly contributed to the relative lack of foreign investment.

Conflicting agendas

Danced's contributions to South Africa's "new" struggle for a cleaner environment has so far been well received and appreciated. There are, however, potential future confrontations between Danced's ecological agenda and South Africa's desire to create new jobs through growth.

Two of South Africa's main advantages in the global competition for investment and export markets are low energy prices and cheap raw materials. The targeted growth rate of six percent per year can easily lead to substantial threats to the environment if the government is not serious about saving energy, cutting emissions and securing a sustainable use of natural resources.

So far, much of South Africa's re-written environmental policies have concerned themselves with the very real need to unite the divided nation. South Africa's and Danced's efforts have often had a common, dual purpose. Many projects have targeted the environmental problems created by overpopulation in poor communities. But since these problems have an often very direct effect on people's living conditions, much time and resources have been spent on development efforts.

If the environmental targets are to be reached, however, there will probably be a need to focus more directly on pollution and less on development.

Danced has often been forced to relate to the political and historical heritage behind South Africa's diverse environmental problems. Alternative energy is a good example. South Africa is blessed with sun and heavy winds which could easily be exploited as solar power and wind energy.

This would benefit the poor, particularly in areas outside the national electricity grid. But South Africa also has a very powerful national electricity supplier, Eskom, a heavily centralised organisation which in the apartheid years built Africa's sole nuclear power plant.

As one of very few electricity suppliers in the world, Eskom is still doing research on nuclear power and hopes to test a new reactor type in 2001. The combination of nuclear-powered ambitions and cheap coal from South Africa's own mines has so far made it very difficult to promote alternative energy sources on any large scale.

A mountain of challenges

Danced's programme in South Africa is designed to follow a plan from lofty ideals on the desks of ministers to the dirty realities in the townships, all in a country marked by its complex history

When school is over for the day, 15-year old Daniel Lesupi climbs Goudkoppies on the edge of Soweto outside Johannesburg. Formerly a mine dump, built from the detritus of gold digging and the creation of the wealth of the nation, Goudkoppies is now home to one of the largest garbage dumps in South Africa. To Daniel and hundreds of others, the hill has remained a gold mine. Some are collecting waste for recycling, others eat directly from the leftovers of others.

The battle for the best garbage is tough. The most courageous scavengers scale the stinking deliveries just as the trucks dump them. In one continuous motion, the garbage flows from the hatch and under the wave of people who have a few minutes to comb the load for anything of value. The slow ones must jump to avoid being crushed by the bulldozers flattening the top of the ever-growing hill.

Daniel's speciality is cans that he sells for recycling in Soweto. On a good day he can make 10 rands in three hours. On a bad day it takes five.

"It's tough at home. We often don't have any food," says Daniel.

Apartheid made one man's waste into a small boy's gold. And since Danced's first consultants landed in Johannesburg in 1994, they have constantly been confronted by the enormous dilemmas created by this gap.

Most of the country's environmental challenges demand solutions based on an intricate understanding of the nation's political and historical baggage. Many of Danced's projects have run into unexpected reactions when they attempted to change the state of affairs.

Goudkoppies is instructive in this regard. When the local environmental authorities asked a consultant to analyze the waste for a feasibility study on organized recycling, he was chased away with a gun. The self-appointed owners of Goudkoppies' wealth wouldn't let him anywhere near their gold.

A wide, wide context

Any attempt to improve South Africa's environment demands an understanding of a wide context. Danced got a unique chance to learn by being ready for action less than a year after Nelson Mandela came into power in 1994.

The environmental authorities were still busy revising policies to make environmentalism mean more than being kind to endangered animals. In ministries and departments, politicians and officials were writing new legislation and passing it into law.

To cope with this huge challenge, South Africa welcomed assistance from Danced and other international donors. This led to the South Africans and Danes influencing one another. Danced helped define environmental policies while South Africa's own priorities were clearly reflected in Danced's programme, finalized in 1998. The assistance for the seven years from 1995 to 2002 will total almost R500 million.

The programme contains four main themes:

- Urban environmental management;
- Industrial pollution;
- Sustainable energy; and
- Bio-diversity and sustainable use of natural resources.

These were chosen as areas in which Denmark could offer expertise not available in South Africa. But Danced was also guided by a desire to offer support in fields which appeared under funded by the government and other donors. Sustainable energy is a good example of both these criteria.

From top to bottom

By being part of the process from the outset, Danced achieved coherence in its programme. After initially giving support to policy frameworks and the involved ministries and departments, Danced would follow up with projects in the field. Here again, waste management is a good example of the support rendered at four levels.

The grand plan: Danced's consultants helped writing the National Waste Management Strategy and an action plan meant to clean out in all corners of the country (see "Visions with a price", page 42). This strategy was a first for South Africa and extremely ambitious, as it attempted to address two sets of outdated thinking in one go. Apartheid had spent huge amounts cleaning formerly white suburbs while the townships were allowed to deteriorate. The imbalance had to be addressed without lowering standards. The other challenge was to

minimize the total amount of waste. The old South Africa was almost exclusively concerned about disposing of waste and pollution. With new policies, South Africa is now trying to minimize the waste at a much earlier stage. Cleaner technology in industry (see "With stick and support", page 56) and increased recycling are two of these strategies.

More control: This grand plan can only be implemented with enough resources to control it. This is mainly the responsibility of South Africa's nine provinces. Danced thus chose to support the environmental departments in two provinces: Gauteng, in which are situated the industrial and political powerhouses of Johannesburg and Pretoria, and the more rural Mpumalanga (see "Dressed to rule", page 65). Industry had to get used to efficient control. And often young officials in rapidly expanding environmental departments needed education and self-confidence to enforce the new policies.

Dirty hands: Following the support at departmental desks, Danced has dispatched consultants to areas where pollution and waste really hurt. Various projects have tried to find efficient ways to clean up townships where waste problems are closely connected to history (see "Waste watchers", page 46, and "Guts from the gutters", page 51). In industry, the recipe for an improved environment is cleaner technology. Large companies in the fish, metal finishing and textile industries have been targeted with programmes teaching them to limit their consumption of resources (see "With stick and support", page 56).

Support to the grass roots: In Denmark, much environmental awareness and subsequent legislation are a result of pressure from grass root organizations. Any administration need someone to keep it on its toes. For this reason Danced has chosen to supplement its support of "official" South Africa with money to non-governmental organizations, the NGOs (see "All in the neighbourhood", page 30, and see "Dilemmas in print", page 60). Since 1994, NGOs have mostly had a tough time in South Africa. Many of their best activists took jobs in the public sector and elsewhere after the fall of apartheid, and many donors chose to re-direct their funding to the government. But some of the NGOs are now getting their funding back as donors realise the need for watch dogs.

None of this is easy. The grand plans have often been tough to execute as the economy hasn't grown as well as expected. The transition from apartheid still creates political turbulence and constant, often frustrating, adjustments of priorities. The administration is hit by an enormous turnover of staff as the supply of skilled black people is still smaller than the demand.

Not all of Danced's projects have worked as planned. Part of the reason for this has been a deliberate decision to support experiments that

explore new methods through pilot and demonstration projects. One example is the support of teachers in environmental learning at a time when the education system is going through turbulent changes (see "Learning for life", page 69).

Environment and development

Much of South Africa's environmental debate since 1994 has centred around the appropriate balance between conservation - most noticeably in the national parks - and the battle against pollution. Environmentalists often distinguish between "green" conservation projects and "brown" projects targeting pollution. On a more philosophical level, it's a question of whether to see nature or man as the prime focus of efforts to improve the environment.

Prior to 1994, South Africa's focus was on conservation. Since then, the battle against pollution and for improved living conditions for the population has received more attention. Danced has funded both schools of thought. Support of South Africa's implementation of the so-called Washington convention's protection of endangered animals and plants is a classic green project while the strategy for waste management is mainly implemented through brown projects.

Some of the most interesting Danced-funded projects try to bridge the two ways of thinking. One example is so-called social ecology in national parks. The nature reserves were for decades fighting off their indigenous neighbours who had been forcibly removed to make space for wild animals. The social ecology project is attempting to involve the neighbours in the running of the parks. The main aim is to create enough sympathy for the parks to secure their future. But an added benefit of the project is development in local communities (see "Breaking down the fences", page 36).

Status for Danced support

Urban environmental management: More than 50 per cent of South Africa's population live in urban environments, and migration from poor rural communities to the cities is expected to increase by five percent annually. As most economic growth will also happen in the cities, there is a strong need for a double effort for the environment: sins of the past must be rectified, damage from further growth must be prevented.

South Africa's cities are living - and sometimes dying - testimonies of a past when very few resources were spent in poor neighbourhoods. They are often burdened by overpopulation and waste. Many industrial areas

were placed as far as possible from areas reserved for whites which often meant in the backyards of the homes of the black majority.

The Department of Housing's Urban Development Framework from 1997 speaks of urban settlements which will be "environmentally sustainable, marked by a balance between quality-built environment and open space".

The municipalities have been encouraged to establish local Agenda 21 programmes to further the visions of the United Nations summit on the environment in Rio de Janeiro in 1992. Sustainable use of resources, environmental education in schools and sensitive planning are examples of this agenda.

Despite all this, South Africa has no overall strategy for urban environmental management. This has made it difficult for Danced to carry out its ambition of supporting an entire sector from the highest political circles right through to projects in the field. The support for urban environmental management has mainly targeted projects in which local authorities and NGOs work to improve the environment in the black townships.

The co-operation with local authorities in Midrand, half-way between Pretoria and Johannesburg, on a "Green City Vision", and an urban environment project in South Africa's largest cluster of townships in the area called the Southwestern Townships (Soweto) are examples of projects involving local authorities (see "Waste watchers", page 56). The co-operation with NGOs has included sustainable energy and environment-friendly housing for the poor and lobbying for a cleaner environment (see "Progress through patience", page 73).

Industrial pollution: This theme includes industrial pollution as well as domestic waste. As mentioned earlier, the efforts made here are a good example of Danced's attempt to follow a problem from planning to solution.

In the early 1990s, South Africa still believed in nature's ability to deliver never-ending resources and absorb any pollution; all very similar to the school of thought that right up to the 1980s made Europe and the USA build taller chimneys in a futile attempt to combat emissions. Inside industries, apartheid's lack of respect for the black work force often led to a horrific working environment.

Danced's support is hailed as a major contribution to a process which secured a maximum of public participation in the writing of South Africa's national waste management strategy. Since then, South Africa and Danced have moved on to pilot and demonstration projects, at times severely hampered by lack of money. In early 2001, industry was complaining that the necessary laws were not yet passed, including

emission standards. It was therefore still impossible for many industries industry to determine which new equipment would be needed.

Sustainable energy: South Africa has some of the lowest electricity prices in the world due to its plentiful coal mines. A politically-motivated decision to keep long-distance haulage affordable has kept the prices of diesel and petrol comparatively low. This has all contributed to place South Africa in the top 10 energy-consuming countries of the world, measured as energy consumption relative to GNP.

Cheap oil and electricity have not exactly encouraged research and experiments in alternative energy, even though South Africa is blessed with wind, water and sun in abundance. Danced has pointed to success stories in Denmark where more than 10 percent of all electricity now comes from windmills. Denmark has promised to support a wind farm north of Cape Town which has been awarded status as a national demonstration project.

The Department of Energy and Minerals has however mainly considered alternative energy as a possibility for communities outside the national electricity grid. Some rural communities have therefore refused to buy into ideas of alternative energy, fearing that these would keep them off the grid forever and deny them development.

Bio-diversity and sustainable use of natural resources: South Africa has impressive natural resources, but also a definite need to protect them more vigorously. Danced has supported in three fields:

Biological diversity: South Africa has a variety of plants and animals seldom found elsewhere. Some of the oldest national parks in the world have large programmes for protection of endangered animals. But until recently there was no national policy aimed at protecting this biological diversity. As an example, the international convention prohibiting trade in endangered animals and plants was left in the hands of the provinces, which tackled the issue with varying enthusiasm.

Danced has supported the Department of Environment and Tourism's work on a new national policy to protect bio-diversity. This has been followed up by projects in the field which have, among other issues, addressed the trade in endangered animals.

Forests: Danced has at various levels supported the conservation of South Africa's few remaining natural forests. In 1995, a former deputy director from the Danish directorate of forests and nature helped write the national strategy which, again supported by Danced, was developed into new legislation. On the ground Danced has supported a project in which residents in the Bushbuckridge area plant trees and help protect

existing forests. The idea is to involve the local population in the running of the forests rather than to regard them as enemies of conservation, which has often been the norm.

The lessons learnt will now be used in a new project in the Dukuduku forest in KwaZulu-Natal Province where a confrontation between residents and conservation is taking place.

Water: Despite regular floods in some parts of the country, water supply and access to clean water has become a major issue in South Africa. This was again emphazised in late 2000 when a cholera epidemic broke out, spread by contaminated water used for drinking. Danced has supported the efforts to protect water resources and curb pollution in the townships, both as a national strategy and at a practical level in all nine provinces (see "Guts from the gutters", page 51). Danced is further involved in three of a total of 17 new water management authorities, responsible for protection of water resources in as many major catchment areas in South Africa.

All in the neighbourhood

Apartheid's planners allowed houses to be constructed right next to smoke-belching
factories. Residents are now making progress with demands for a cleaner environment.
But they still feel that industry responds mainly to pressure

Michelle Simon grew up with the smell of sulphur from two of South Africa's largest oil refineries in her nose. The view from her school yard was a huge paper mill.

"When you are young, you are impressed by these huge companies. When you grow up, you realise what they are doing to the environment," she says.

Simon's country is presently going through a similar realization. Previous fascination for industry is rapidly giving way to concern over the impact of pollution.

Apartheid's planners would happily place houses right up to the fence of the most polluting industry, particularly when the residents were so-called non-whites. Protests were ignored or drowned in tear gas.

Simon got her first doses of tear gas when she marched to the paper mill at the age of 16, even though the demands of the marchers were humble: the protesters asked that the log trucks and chlorine tankers make a slight detour and avoid going through the most densely populated area.

Simon is now the only employee servicing the rapidly growing membership of South Durban Community Environmental Alliance (SDCEA). She feels that government is finally listening and that industry is taking protest seriously. But only when the pressure is sufficient.

"Before 1994, we achieved nothing. In 1995 Mandela woke up industry and made them realise they must do something," says Simon.

Poisonous sightseeing

Danced supports non-governmental organizations (NGOs) such as SDCEA as a way of increasing environmental awareness in South Africa and to encourage public debate. South of Durban, these NGOs have found a most receptive audience.

Simon takes us on a so-called Toxic Tour, a drive through absurd planning where you can look straight into some of South Africa's most polluting industries from school yards and gardens.

First stop is Settlers Primary School in the predominantly Indian suburb of Merebank, sandwiched between two refineries. On average, education is interrupted by sulphur fumes every second day. On particularly bad days, the teachers will check the wind arrow behind the principal's office.

If the wind is northerly, the school will call the refinery which belongs to Engen, a petroleum company. If the wind comes from the south, the offender is BP and Shell's refinery 1,5 kilometres away. To the west, again just 750 meters away, you find Durban's largest sewage treatment plant. And to complete the picture, the Mondi paper mill and the run ways of Durban's international airport are all less than two kilometres away.

Vomiting pupils

"It distracts from education when you have students vomiting in class," says Shalo Khalawan. The most severely affected children can get oxygen from bottles kept in the school's small sick bay.

"You are busy teaching an important lesson when the wind brings in the smell. Children start coughing and put up their hands. And you know they are not bluffing because you can smell it yourself," says Lawrence Vartharagulu, another teacher who has the additional title of Environmental Officer.

For six months during 2000, SDCEA and a local doctor assisted the school in monitoring the affected children. Every second day on average was a so-called bad day during which about 25 percent of the children would be sent home to recover. According to the doctor, 40 percent of the children in the area are suffering from bronchitis or other respiratory illnesses.

This documentation is just one of many initiatives in the community's battle for a better environment. In 2000, it led to a breakthrough. Two ministers, Valli Moosa of Tourism and Environment and Alec Erwin of Trade and Industry, presented a plan for cleaning up the South Durban Basin, arguably the country's worst example of a residential area placed in the middle of heavy industry.

Overcoming 50 years of lies

An important part of the plan is setting emission standards - which both industry and activists have been demanding for years.

"If there were rules, it would make everybody's life easier," says Alan Munn, chief environmental engineer at the Engen refinery. He explains that rules would level the playing field. Industry could invest in the environment whilst still being able to compete as everybody else would be forced to take same steps.

"Where management is not supportive, people in industry wouldn't have to beg for money for the environment, because they could say:'the law says we must do this - either we do it, or you get fined or go to jail'."

Munn trained in the United Kingdom and returned to the oil industry in South Africa which had suffered badly from years of isolation. Technology was not up to scratch, particularly not on the environmental side.

"The previous general manager here realised we had a problem, which is quite something in South Africa. I was employed because I became aware that there are better systems overseas."

One of Munn's first breakthroughs was an informal agreement with Bobby Peek, a veteran of the environmental struggle in South Africa in general and south of Durban in particular. Peek is a co-founder of SDCEA and got Engen to promise 65 percent reductions in its emissions of sulphur dioxide.

"SDCEA did an excellent job. They negotiated a plan with us at a time when government wasn't interested. It is largely because of their pressure that government has been forced to set standards," says Munn.

He is not surprised that the complaints from the neighbours continue nevertheless.

"We have 50 years of mistrust, hate and lies to overcome. We have let them down on promises in the past," says Munn.

In mid-2000, the municipality suggested that a divorce could be a solution. The idea was to move the residents and make the whole area an industrial zone. But this is flatly rejected by both residents and industry.

"In a highly technological era, you don't remove people. You clean up," says Khalawan.

"We would not condone forced removals. With the history of this country, it is not on," says Munn.

Government needs pressure

Peek, who negotiated the deal with Engen on behalf of the residents, has since used his experiences from a childhood and youth in the shadow of the refinery to establish a national NGO, groundWork.

Peek can't really decide whether to be proud of, or concerned about, the victories won by himself and the residents south of Durban. In December 2000, Moosa used the example of Durban to highlight the

importance of NGOs when he welcomed delegates from all over the world to a UN conference on pesticides.

"What he really said at this occasion was government is not going to do it on its own. Government will act if there is an organised community," says Peek.

This is why Peek finds it both important and courageous that Danced has decided to support both government and NGOs in South Africa.

"When I first went to Danced for money for SDCEA in 1997, they were a bit concerned that SDCEA's work was too confrontational. My argument was 'we are ill and have been ignored - now we have to be more assertive in what we want as a community.' Eventually Danced came around," he says.

Writing the request for support became a useful exercise in itself: "If Danced had not come in, we wouldn't have been able to challenge refineries and government in the way we did. They forced us to plan and to articulate our ideas," says Peek.

Breaking down the fence

South Africa's national parks are battling to embrace neighbours who often regard the parks as wasteful playgrounds for the elite

Many of South Africa's national parks occupy land whose original inhabitants were forcibly removed. While endangered animals and tourists were given vast areas to roam, the local population was squeezed out on to the other side of the fences.

After 1994, the parks were thus likely to become endangered themselves - if they didn't change their image and if a way was not found to do something about those people who originally lived on the land. As former president Nelson Mandela told the BBC: "Whether we like it or not, we all know how the Kruger National Park came about."

The immediate answer from South African National Parks (SANP) was the creation of so-called Social Ecology Units at its headquarters in Pretoria and at most of the parks. The aim was to reach out to the neighbours. Danced got involved as one of several foreign advisers and donors.

Some of the social ecologists knew the problems all too well from a childhood on the wrong side of the fence:

"I grew up believing that the park belonged to people from overseas who drove into an area managed by our own whites," says Patrick Chauke, social ecologist in the Kruger National Park (KNP).

"We were the hunters. And our only contact with the parks was when wardens came to search our houses for poached game. People in my village were born on the land that became the park. They felt that the animals belonged to them - and they were very good at poaching."

"Us" and "them"

Chauke now wears a khaki uniform himself and occupies an office at the park's headquarters in Skukuza, a name that means "the man who forced people out". It was given by the local population to the founder of the park, James Stevenson-Hamilton.

"When I arrived here, it was 'us' and 'them'. We had to redress the situation so that it became 'us', the community and the parks working together," says Chauke.

He found himself working in one of South Africa's most conservative institutions. The national parks were managed like a paramilitary

organization - and run by conservationists who often saw both the parks' black neighbours and the tourists as dangers to the survival of their beloved animals. The management of the KNP regarded itself as "gardeners of Eden" say opponents of the uncompromising attitude that still keeps major parts of the park closed to the public.

Doubtful of management's commitment to change, Chauke was initially reluctant to bring his family to the staff village in the park.

"I wasn't sure, we would be able to survive here," he says. But a number of visible improvements suggest that change is in the air

Benefits for the community

Visitors to the park will come across one of the improvements just inside the main entrance, at the Kruger Gate. A huge shop selling locally produced handicraft has been erected as part of a project financed by Danced and other donors - literally on the border between park and community.

Until recently, many of the souvenirs sold in the park were made in Zimbabwe. Meat and vegetables in the shops and restaurants was bought from large commercial farms, often far from the park.

"Locally produced handicraft was seen as being of poor quality, even without testing if it could be sold," says Chauke.

The new shop is run as a co-operative by 63 local crafts people.

"Most of them were artists before the shop was built and sold their things at the roadside. But some are people who got interested when they saw the opportunities here," says Maylima Mdluli, the manager of the shop.

The construction of the new building created opportunities for other neighbours of the park. Twelve local, small-scale contractors were responsible for the building work and sent on courses in administration and planning. They now tender for other construction and renovation projects in the park.

One of the contractors, Patrick Mkhabela, has employed a team of part-time worker to rebuild the retaining walls of a bridge washed away during the floods in 2000. Previously unemployed, Mkhabela now regards himself an ambassador for the park when he bumps into other neighbours at parties or in local shops.

"Many still think the park is only for rangers watching animals. I tell them there is construction work to be done," he says.

Shoot the elephants

Recognition of the human and cultural heritage hidden in the park was another important step in the attempt to embrace its neighbours. Again, Chauke had first hand experience: his mother's great grandfather is buried close to a popular picnic spot.

The park allows free access for neighbours to visit graves of their ancestors. So far, 254 graves and other examples of human heritage have been registered. In the northern end of the park, you can visit the partially reconstructed ruins of Thulamela, once the capital of a kingdom that traded gold from West Africa to China.

Thulamela was opened to the public in 1996, after archaeologists had co-operated with the descendants of the kingdom to arrange a ritual funeral of their ancestors.

The social ecologists in the Kruger National Park are trying to make sure that visitors also encounter local culture. So far visitors are offered shows featuring traditional dance. Next step is to let locals handle the game drives and to take visitors through the park as well as introducing them to the cultural history of the neighbouring villages.

At the northern end of the park, the Makulele tribe has been responsible for the largest challenge so far to the once omnipotent management of the park. In 1996, the Makuleles claimed back their land in the park as part of post-apartheid land reform. Two years later, the parties signed an agreement aimed at benefitting everyone. The Makuleles became the legal owners of the land, but in return allowed the park to continue using it.

The Makuleles later made international headlines with a plan that would allow tourists to hunt elephants for a large fee. This posed a serious challenge not only to the KNP but to most of the country's wild life reserves, since the parks are based on the assumption that poor people are willing to leave modern conservation rules untouched.

Conservation is not development

Jens Sondergaard, Danced chief technical adviser, has worked closely with a number of social ecology projects, from those at SANP's Pretoria headquarters to the individual parks. He has been involved with nine parks, from Kgalagadi Transfrontier Park in the Kalahari Desert in the north to the Addo Elephant Park close to the Indian Ocean in the east.

The neighbours of the parks are as diverse as the San people of the Kalahari to affluent home owners on the lower slopes of Table Mountain in Cape Town. Yet the people neighbouring the national parks nonetheless

have almost identical expectations where ever they are: jobs and a share in the money generated by tourism.

But according to Sondergaard, it would be a mistake to see SANP as a development organisation. "The parks must be good neighbours. But it is philanthropic and unrealistic to think that SANP can be responsible for social improvement of the community. SANP can only make development where it happens in connection with the conservation efforts in the parks," he says.

This opinion is reflected in the recent re-organization of the SANP's headquarters. Social ecology has ceased to be a department of its own and now falls under the department responsible for conservation. According to Sondergaard, this is the only way to create a meaningful future for social ecology, which would otherwise be in serious danger of operating in a cul-de-sac. Sceptics, on the other hand, fear that social ecology will be sidelined by the new arrangement. But in the KNP, Chauke is confident that no one ever again will be able to make decisions without considering the needs of communities like the one he grew up in.

"Social ecology is no longer a choice. It has become a necessity," he says.

Visions with a price

The attempted clean-up of South Africa's mountains of waste has revealed a nation whose budget is sometimes too small to finance its environmental ambitions

South Africa's first seven years with democracy has seen numerous clashes between huge ambitions and a lack of money to see them through. The Danced-funded process that secured a new waste management strategy is no exception.

All the parties involved heap praise on the process itself. If nothing else, it was a major break with apartheid's legendary secretiveness and one-way communication. Everybody was asked to appoint representatives to the steering committee working on the strategy: government departments, provinces, business, the mining industry, NGOs and unions.

Peter Mokaba, then Deputy Minister of Environment and Tourism, personally chaired most meetings. And participants credit Danced for making the process a model of co-operation between the government and the public on new legislation.

"Danced's funding allowed the Department of Environment and Tourism to develop a national waste strategy sooner than it might have done without the funding. There is no doubt that donor funding plays an important part in the department's activities," says Laurraine Lötter of the Chemical and Allied Industries Association.

"We got a total solution rather than just a technical solution. It took some heavy debate and long hours of re-working the document. But along the way, everybody bought into the process," says Jenny Hall who represented the NGOs at the negotiations.

Less waste, better cleaning

The final strategy notes two overall ambitions for South Africa's approach to pollution, whether it's waste from townships or emissions from industry:

- The total amounts of waste and emissions must come down through recycling, tougher standards and a reduced consumption of fuel, chemicals and water.
- The remaining waste must be collected and disposed in more efficient and safer ways, particularly in the poorer communities wherewaste is a health hazard.

All parties insisted that the strategy and the action plan should contain ideal solutions, even if it would take many years to implement them.

Jerry Lengoasa, former Chief Director for environmental quality and protection at the Department of Environment and Tourism, inherited the thankless task of piloting the action plan through to reality. It proved extremely difficult:

"The estimated implementation cost for the entire strategy and action plans is one billion rand, mainly to human resources. This happened at a time when the municipal system of the country being overhauled and the the number of municipalities being cut down. It also coincided with most affluent municipalities moving towards outsourcing their services," says Lengoasa.

Too European

Lengoasa was not alone in experiencing a gap between "European ambitions" and the harsh realities of South Africa. Many departments spent the first years after 1994 working on ambitious policies while too little effort was invested in delivering the services and improvements which people expected, says Lengoasa.

"A lot of strategies were beautiful, correct post-apartheid policy. But they were very difficult to implement. The challenge now is to pull ourselves on from strategies which can't be implemented."

One example is the action plan for waste collection, says Lengoasa. It is based on a European scenario in terms of which trucks cruise through leafy, orderly suburbs. A typical result of the desire to find ideal solutions, but also an example of first world South Africa struggling with the country's third world realities.

"What we really needed was to find a man with a van and a group of unemployed women who on a regular basis could clear out the street

corners," says Lengoasa who describes himself as "a bit of a maverick when it comes to development strategies".

"I believe in writing out terms and developing strategies as you try out projects," he says.

To start implementing the waste action plan, he found creative ways to dig into the funds for poverty alleviation set aside in the state budget. In the 1990s, several ministries were battling to distribute billions of rands to the poor; the bureaucracy was simply unable to cope. In 1999 and 2000, Lengoasa managed to lay his hands on R30 million for a total of 30 pilot projects in waste management, spread over all nine provinces.

The money was earmarked for wages and was given primarily to township residents who would collect waste. The pilot project in Soweto managed by the local municipality and Danced (see "Waste watchers", page 46) was among his inspirations.

Lengoasa's department has marketed the projects as part of its so-called "Green and Clean" campaign aimed at teaching the population to appreciate a clean environment. One of the suggestions to municipalities was to create parks with a small entry fee so that people could appreciate the value and cost of a clean environment.

Lengoasa has tried to encourage creative thinking in other governmental departments in an attempt to carry out as much as possible of the strategies and action plan. The Department of Public Works could for instance spend money, earmarked for poverty alleviation, on secure waste dumps built with as much manual labour as possible. This would contribute to the governments stated objectives of poverty alleviation and a cleaner environment for all.

Industry demands standards

Looking beyond the waste dumps in the townships, there are many other major challenges waiting to be addressed. In early 2001, industry was still waiting for the emission standards it never got in the apartheid years. The standards were promised in the waste management strategy but never instituted.

"Government seems to believe that industry wants weak legislation. That is not the case at all. Industry wants to see a sound legislative regime which is implemented on a consistent basis," says Lötter who feels that pressure from NGOs rather than coherent policies too often guides the authorities' interventions.

Danced has supported initiatives to implement the ambitions in the action plan. Examples include a project to treat medical waste (see "Dressed to rule", page 65), the battle against waste in Soweto (see

"Waste watchers", page 46) and cleaner technology (see "With stick and support", page 56). Lötter encourages Danced to continue using as many resources as possible in this regard: "Danced needs to start looking at a situation where they fund practical implementation," she says.

Waste watchers

A range of mini-projects in Soweto are an attempt to clean up after decades during which waste became both a weapon and a by-product of the battle between the apartheid government and the people

You experience one of the more remarkable paradoxes of South Africa almost every time you walk past a township home. Inside the tiniest shack, even where the wall paper is a patchwork of glossy supermarket brochures and the floor comprises compacted soil, everything in sight is polished and immaculately clean. Outside, however, there is waste in abundance.

Why do house-proud people accept wading through a sea of garbage as soon as they leave their homes for the streets? How do you transfer domestic pride to public spaces?

These are just two of the issues at the core of a Danced-funded project that deals with waste management in the townships of Soweto. So there we are, in Maria Nkosi's spotless lounge, on a scorching hot afternoon, asking the difficult questions.

Nkosi, a grandmother, is a person with a strong personality, who regards the Danced funded project as a welcome extension of her own lifelong crusade against waste.

"I fell like strangling them," she says, telling us about those neighbours who dump leftovers in the street. So how on earth dare they? "In my earlier days, it wasn't like that. When Mandela came out, it started to go like this, that people don't care. I don't know why," says Nkosi.

Making life unpleasant

Nkosi's explanation is rejected by the municipality's manager of the project, Les Venter. He thinks Nkosi is romanticizing the bad old days.

"Piles of garbage are a very visible legacy of apartheid," he says, embarking on an explanation of the problem that he has been asked to solve.

In his view, the piles of waste are part of the townships' history as a giant repository for black workers. During the apartheid era, people were generally not allowed to live permanently, or to own property, in Soweto In the view of the apartheid government, people's homes had to exist -

whether they in fact did or not - in one of the 10 homelands set up by the government in various parts of the rural hinterland. From there they were supposed to travel to Johannesburg on work contracts. Once they expired, people had to return "home" to re-apply for permission to live in Soweto.

Many found ways to remain in the townships. But the feeling of insecurity, of being in constant transit, led to a lack of care for the neighbourhoods in which they lived and to the dumping of waste.

Venter's second explanation of the problem lies in the attempts by the apartheid authorities to make life in Soweto as unpleasant as possible. The idea was to chase people back to the homelands, to make them feel unwanted. So in the 1970s, garbage collection was reduced to the clearance of the biggest piles on the street corners. People were encouraged to make local rubbish dumps that were occasionally loaded on to a truck.

"You thus had a combination of lack of ownership and officials condoning the rubbish piles," says Venter.

The result is still there to be seen. Many street corners in Soweto have huge holes, where garbage collecting trucks gouged up the waste over the years. When it rains, children use the pits as swimming pools regardless of the waste floating in them.

Boycotts increased problems

Nkosi suddenly remembers that dirty streets were a problem even before Mandela was released. Part of the struggle against apartheid was to make the country ungovernable by creating chaos.

"We dumped the garbage to worry the municipality," she says.

From 1986 onwards, many Sowetans participated in rent and rates boycotts. This led the authorities to cut down even further on services such as garbage collection and the maintenance of water pipes and electricity.

The next explanation comes from Smith Radingwana, Venter's local project coordinator. He feels that part of the problem lies in the affects of urban life coupled with the demise of traditional values.

"African women used to get up early, sweeping the yard and the frontage. With new believes and ignorance, they don't care anymore. It's very difficult to change people's attitudes," he says.

Recycling no solution

And so Nkosi's lounge, where we are all meeting, is filled with a number of answers to a simple but difficult question. Only one thing is clear: Venter and Radingwana have got one of the toughest jobs in the battle against waste. Making reality out of the ideals in South Africa's new national waste management strategy is as difficult as getting someone to pick up his neighbour's waste.

"Our luck is that the money from Danced gives us a chance to experiment," says Venter.

One of the project's original strategies was to encourage the residents to limit waste through recycling. Some of the inspiration for this came from co-operation with the municipality of Copenhagen. During a visit to the Danish capital, Venter and other South African officials witnessed highly successful waste separation in individual households and its subsequent recycling and composting.

Nkosi now has a huge collection of plastic bags and cardboard boxes full of old bottles in her back yard. Other people have collected cans and paper. But there is so little money in recycling in South Africa that it often costs more to transport the collected materials to a buyer than he will pay for them. The disappointment was detrimental.

"When we don't get paid, people go back to square one," says Nkosi.

"One of the problems was that the socio-economic aspect was over emphasized. The community developed the perception that you can live from your own waste," says Venter.

Change the attitude

The revised strategy revolves around getting the recycling industry to build local buy-back centres.

"The idea is that people must be able to walk to the centre with a wheel barrow full of bottles," Venter explains.

But most important is to explain to people that recycling and a possible profit is not a target in itself, merely a means to a cleaner end. The aim of the project is to create a healthier environment with cleaner air, fewer rats - and water holes where the kids can play without getting sick.

The waste management project is also about saving money that the municipality could spend on other developments in the township.

Venter and Radingwana have engaged with a local steering committee to spread this message via mass meetings and school teachers. Recycling is still part of the game. But to reach the volumes that make recycling

economically viable, people are now encouraged to donate their cans, bottles and paper to schools and other public institutions.

This approach has it own problems. It is based on the very sense of community responsibility that has so far been lacking in the townships regarding waste. And it is difficult to ask people to hand over anything that has any potential value.

"Poverty is so dire that anything with economical value creates hope. As soon as they see things given to you have a value, they want to have a part in it," says Venter.

So ultimately the only solution to the problem is also the most difficult: a complete revamp of attitudes. "It is as with alcoholism: admitting the problem is half the solution," says Venter.

The struggle continues, but it is an uphill one. Responding to a questionnaire in which respondents were not identified, only 11 percent of residents admitted to dumping.

The waste management project is one of 15 mini projects in which Danced supports local authorities which are testing methods to improve the environment in Soweto. Other examples are:

- A database which registers the total amount of waste and how it is disposed;
- Saving water through achieving faster response times when pipes burst; and
- Greening through renovations of a local park.

Some projects are hands-on in the local environment, while others try to revamp the municipal bureaucracy to secure a more efficient use of limited funds.

Guts from the gutters

In a historical corner of the townships that comprise Soweto, a truck load of drainage pipes has got the community involved in development - and created new hope that one day democracy will also mean better living conditions

You don't get far down the dusty roads of Kliptown without being reminded of the proud history of a now somewhat run-down corner of Soweto. One of the residents is bound to point out where leaders of the African National Congress met in 1955 to write the Freedom Charter, the famous vision for a South Africa without apartheid.

"South Africa belongs to all who live in it, black and white," says one of the first paragraphs. Revolutionary words at a time when most of black Africa was busy planning the eviction of its colonial masters, and the colonial masters of South Africa were busy planning the eviction of their countrymen to so-called homelands.

The vision became reality with Nelson Mandela's ascent to power in 1994. But people in the sprawling black townships of Soweto outside Johannesburg initially didn't get much pay-off for their tolerance of the white minority and 40 years of patience.

The historical houses in Kliptown were used as a set for Cry, The Beloved Country and other movies depicting the rise and fall of apartheid. But when the movie companies and their generators moved on, the residents once again found themselves in houses without electricity. Outside, the kids were playing in roads filled with dirty water.

Visions of cleaner water

"People are so angry here. It was here the Freedom Charter was signed. And yet it is the last place to get development," says Donald Kgasi, one of the few who have walked the hard road from Kliptown to university.

In 2000, only 20 children in an area with a population of some 20 000 passed their matric examination with university exemption. As Kgasi takes us around Kliptown, he stops regularly to show us where shack settlements have overgrown the soccer fields and open spaces of his youth.

All this to explain why officials from the Department of Water and Forestry, assisted by Danced consultants, started a minor revolution

when they entered Kliptown with a truck load of drainage pipes. The plastic pipes were manifestations of the strategy for improved water quality in densely populated areas, which Danced and the department have worked on since 1997.

Kliptown was selected as one of nine pilot projects, one in each province. The chosen areas all had more or less similar problems to Kliptown's: drain water, waste and storm water were mixed into an unwholesome brew which was usually to be found streaming down the roads.

Flush toilets must wait

The drain water comes from the communal taps where residents get water, wash their dishes and launder their clothes. The waste was often thrown in the middle of the street. And the almost daily thunder storms during Johannesburg's summer months washed it all into the Klipspruit stream at the bottom of the slope on which Kliptown is built.

The aim of the project is to separate it all: waste in containers and drainage water in pipes, so that storm water can make its way to the river without taking any pollution along with it.

The residents wanted the department and Danced to go all the way and provide them with flush toilets as well. But, for the time being, they have had to settle for chemical toilets emptied regularly by a sanitation truck. The reason is partly financial constraints, partly somewhat ambitious visions of substituting the shacks with brick houses.

The project in Kliptown would never have succeeded without intense motivation. Many of the house owners have been asked firmly to make sure that they themselves pay for drainage pipes from their private outlets to the main pipe. And the struggle against waste would have made no headway if the residents hadn't agreed to carry the waste a little further and dump it in containers.

"This project has opened our eyes to how you can involve the community. Even if there seems to be no money here, let us contribute the little we have," says Kgasi.

An important motivating factor is the very real possibility of healthier kids, when they are no longer forced to play in drain water and waste.

"In areas where water is no longer running down the roads, people say 'thank God, we got rid of the smell'," says Kgasi.

Development as a side effect

Arguably the project's greatest success goes beyond pipes and water quality. The intervention has brought new hope to an area which formerly had to rely on help from local drug lords when it ran into trouble. The pushers were often the only ones bringing money to Kliptown.

Kgasi tells how people in the area were starving for development and all too eager to use the project to breathe new life into the community.

"The politicians walked out on us and only came back to collect votes. Now we only see them in times of floods," says Kgasi.

He is talking about the disappointment that often followed the initial years of celebrations after the fall of apartheid. South Africa's economy didn't grow fast enough to fulfil the ANC's election promise of "A better life for all". And in areas like Kliptown, the politicians usually became scapegoats.

Kgasi is himself a member of the ANC.

"But I'll rather channel my energy into development than rhetoric," he says.

Kgasi is studying building construction, but has taken a year off to be a member of the residents' "Environmental Reference Group" which runs the project with inputs from the department and Danced. Kgasi's new status as community leader has forced him to abandon friends whose lifestyle is not entirely legal.

"I'll still greet them. But if I am involved in development, I can't have friends who are detrimental to the community," he says.

A new power-base

John Legoale, the chairman of the reference group, explains how the fight for a better life has taken over from the political struggle against apartheid: "The economical fight is new for us. We need the type of changes which Danced and the department has helped us with. This project has brought us together as stakeholders, not from political parties, but from non-governmental organizations, churches and so on."

"If we had purely put in infrastructure such as pipes, the project would not have been sustainable. So our approach was to involve the local community and let them drive the project themselves," says Manda Hinsch, Deputy Director General in the Department of Water Affairs and Forestry.

She explains that this pilot project is part of an overall aim to find sustainable ways of implementing the waste management strategy.

By delivering much needed services, the project in Kliptown has become a potential power base for the people involved in it. But this makes it a threat against existing structures. A few months after the project started, local leaders from the residents' organization SANCO tried to get themselves involved by claiming that the diameter of the drainage pipes was to small.

"They came up with problems which were not real problems. Everybody is trying to get on the band wagon because they can see the project is working," says Lee Boyd who is representing Department of Water Affairs and Forestry on the project.

But the success of the project has also attracted people who have other things to offer than a desire for power.

"Other donors are now ready to support new projects here because they can see how the local community is involved," says Boyd.

Legoale is very impressed with the way Boyd has delegated responsibilities: "Lee is not doing things for us. She says, 'Here is the money, do what you need to do.' We are planning, we are managing. That is one of the things we are proud of. Our government doesn't normally do things that way. But that's the way we want democracy," he says.

With stick and support

The new environmental consciousness in South Africa's fishing industry is based on punishment for pollution and the possibility of making money, the same mixture that has been driving cleaner technology elsewhere

Everything is huge at Sea Harvest fisheries in Saldanha Bay, north of Cape Town, one of the largest fisheries in the world. Seventeen trawlers land between 500 and 600 tons of fish a day. Twenty-eight production lines convert the catch into 500 different deep-frozen products shipped all over the world.

No wonder that water consumption and discharges of organic waste amount to mind boggling figures as well. This has made Sea Harvest an obvious participant in the cleaner technology project launched by Danced and the fishing industry in 1999.

In the fishing industry, cleaner technology basically means two things: A reduction in water consumption and a more thorough stripping of the fish bones to make certain that less organic waste finds it way back to the sea. Here is money to save and money to make. So motivation has been high.

"We have brought down our monthly water bill of R120 000 by about 20 per cent. The target is a further reduction of 40 percent," says Hannes Terblanche, engineering manager for processing.

Wasted water on video

Terblanche's office has a splendid view of the factory floor and examples of water waste. Our interview is occasionally interrupted when he points out a lack of discipline. Right under the window a man is busy with one of the classic sins. He is "using the water as a broom," as Terblanche put it. He explains that people will use a thick water jet to push a small piece of fish into the sluice channels running across the floor.

To make people more aware of their actions, Danced asked a consultant to video daily practices at the plant.

"It was not done to hit people with a long stick, but to show them how they handle water. It was meant as a shock treatment. But at the same time it was quite funny," says Terblanche.

In Denmark and other industrialized countries, the fishing industry had little respect for cleaner technology until fees on water and discharge skyrocketed as a result of increased environmental awareness. South Africa was no different, just some years behind in this regard.

"We lived in a world where we regarded water as being free. We only paid a little for the water coming into the factory," Terblanche explains.

In the near future, Sea Harvest will be forced to pay for its discharges as well. This will mean a noticeably higher water bill and further motivation to save water. The fees on pollution will be followed by new legislation and much tougher enforcement of the existing laws than industry has been used to.

Target is less waste

A range of cleaner technology projects is part of South Africa's and Danced's attempts to tackle waste in the largest possible context. Rather than just treating the waste, the idea is to minimize it in the first place. Apart from the fishing industry, Danced has targeted the textile industry and metal finishing industry, the latter known for heavily polluting practices such as galvanization. In all of these fields, Denmark has acquired expertise over the years.

An important part of the cleaner technology projects has been study tours to Denmark which in some cases have had a deep impact on the participants. At a textile industry function in Denmark, the chairman of one of South Africa's leading textile companies said: "I have now realised how much I have polluted in my career. I'll now go home and spend the rest of my life rectifying this. I have also learnt that cleaner technology can be good for business."

Terblanche found that technology and raw materials in most Danish fisheries are somewhat different from their South African counterparts. But he took note of the attitude towards the environment.

"Consultants usually come and tell you what you already know. But you get stagnant when you work with it every day. When you open up, you get a broader view," he says.

Terblanche uses the stick as well as motivation to bring down water consumption. Each production line has meters which are read daily and the readings then discussed weekly. If a given line has used more water per ton of fish than is considered necessary, the people in charge of the line better think fast.

"It has become a systematic thing. When we install new equipment now, the first thing we look at is water usage," says Terblanche.

In the fishing industry lower water consumption is also desirable for hygienic reasons. Standing water breeds bacteria. Sea Harvest has been faced with very stringent demands from international clients who want the fish produced in as dry an environment as possible.

"Danced's input has pushed us in a direction where we would eventually have to go," says Terblanche.

Despite international pressure, the possibility of increased profit, and the certain prospects of tougher environmental legislation, it has far been far from smooth sailing to change the mindset of the South African fishing industry, says Seiersen: "They are 20 years behind Denmark when it comes to saving resources. But if they are willing, they can catch up in three to five years."

Seiersen thinks he has finally managed to convince the participating industries that cleaner technology is far more than a "technological fix". It's all about working with attitudes and motivating the individual employee.

But, again according to Seiersen, the highly motivated engineers who are his direct contacts in the industry often have a difficult time convincing management of the need for change.

At the other end of the spectrum, the responsibility for implementing new practices often lies with low-wage workers whose education and motivation are not always geared for change.

"One major success for the project has been the fact that we have managed to keep it going while the fishing industry has gone through a very tough time," says Seiersen.

South Africa's dramatically enhanced relations with the rest of the world since 1994 has meant tough competition to its own industry. At the same time, large fisheries have got smaller quotas as the new government has been eager to give a chance to new players from previously disadvantaged communities.

Tougher competition is reason enough for saving water and getting more products out of a smaller amount of fish. But savings often require investments. To get these going, Danced has promised to cover 20 percent of investments aimed at cleaner technology.

One of the first recipients was Marine Products Laaiplek which produces canned fish and fish meal. The factory was under pressure form two sides. A local tourist resort was complaining about pollution from the fisheries while import regulations in the European Union demanded cleaner technology from its suppliers to prevent unfair competition with Europe's own producers. With assistance from Danced, Laaiplek is going to invest 1,6-million rands in cleaner technology over six years.

"Even though we were fighting for our survival, we had no choice but to clean up," Chris Gildenhuys, Laaiplek's managing director, told a Danced-funded newsletter disseminating information about cleaner technology to the industry.

Dilemmas in print

"Poverty is our greatest environmental problem," says the editor of Land & Rural Digest. He and his staff produce a magazine that often speaks for the rural poor in confrontations between the environment and the needs of the population

Victor Munnik has included a little Danish currency on his necklace of African beads, by threading the leather thong through the hole of the attractive one krone coin. He hurries to assure us that it's his own money and not part of the 5 372 067 Danish kroner with which Danced has funded his Land & Rural Digest.

The magazine is Munnik's and Danced's attempt to create a space for environmental debate.

"Danced is unusual in a number of ways. They have a far more strategic approach than other organizations. But they are also maddingly thorough," says the editor, looking almost crazed by the thought that anyone might suspect him of having spent the tiniest bit of Danish environmental assistance on his own necklace.

Danced's strategy in South Africa is why Munnik's magazine and the rest of the documentation unit of Environmental and Development Agency Trust (EDA) still exist. Danced chose to support EDA at a time when foreign support for South African non-governmental organizations (NGOs) was becoming somewhat unfashionable.

NGOs going through tough times

During the 1980s and early 1990s, many NGOs dealing with the environment, education or human rights were merely cover organizations for the banned ones struggling against apartheid. After 1994, it often became all too obvious that these NGOs no longer had much to offer apart from job opportunities for their own staff.

Many donors therefore decided to give most of their foreign aid to the state. The ANC-dominated government did after all represent the values which the donors had supported in the fight against apartheid. The donors believed that the state would be more efficient than the NGOs in distributing the foreign aid.

In reality, the donors thus closed a number of NGOs by halting their funding. But the donors were soon to realise that this had not necessarily been a wise decision.

First, the state bureaucracy was battling to disburse the large amounts of money and so in many cases it went unspent. Second, there was a continuous need for the NGOs to fight for the poor and keep debate in the country alive. Third, and probably most importantly, a number of the now financially squeezed NGOs had for years done excellent development work in poor and remote corners of the country.

A Dane on the shoulder

The now 25-year-old EDA was a good example of this. The NGO supports the rural population in a nation with too little land for the poor, too much erosion, and too little political clout. In two provinces, EDA runs programmes that help small-scale farmers market their products and fight for land rights.

When Danced arrived in South Africa, EDA already had more than 10 years experience in print media. In the 1980s, the NGO published The People's Workbook with advice on anything from rearing chickens to building wells, and from sanitation in poor communities to the background of the rural population's political struggle.

In 1989, the book was followed by the magazine New Ground, which counted among its readers Danced's first advisers in South Africa.

"They liked the magazine. But we didn't have money to continue publishing it," says Munnik. He was one of the few staffers who stayed on, after the magazine and EDA's media unit collapsed in 1995.

With funding from Danced and support from two NGO networks - The Rural Development Services Network (RDSN) and The National Land Committee - the new magazine was born. The money arrived with a demand for tight control which Munnik loves almost as much as he detests it.

"I have a small Dane on my shoulder I talk to all the time," he says, going through the pile of reports he has to write. But Danced's demand for reporting also constantly forces him to check that he and the magazine are on the right track.

"It's quite an education. The reports are an opportunity to reflect on what we are doing," he says.

Voices from Dukuduku

Danced's reason for supporting Land & Rural Digest was to secure a magazine for the rural population and people engaged with the environment. The magazine was meant to educate and stimulate debate at the same time.

When you read through a number of issues, it becomes very apparent that EDA's point of departure is development and human needs. The magazine carries more material on degraded agricultural land and farm workers' rights than the survival of the rhinoceros. The focus is on access to water rather than the living conditions for song birds in the wetlands.

Occasionally, Danced will suggest a shift in balance towards more traditional environmental issues. "They often say that it could be more green. But they don't dictate," says Munnik.

His own ideal of a story for the magazine is one that presents the environmental cause seen in context of the poverty that often creates the problem in the first place.

"Poverty is the greatest environmental problem in South Africa," says Munnik. His own coverage of the Dukuduku Forest issue in the province of KwaZulu-Natal is a good example of the ever-lurking conflict between environmentalists and poor people battling to survive.

The Department of Water Affairs and Forestry has long tried to get Dukuduku administered as a protected area. It's one of the few relatively untouched coastal forests in South Africa. But the conservation authorities have refused to take control of the forest as long as it is still inhabited by what they call illegal occupants.

Some of the residents of the forest are undoubtedly illegal immigrants from neighbouring Mozambique. Others tell that their families have lived in Dukuduku for generations and that they have a claim to the land. They live on crops ranging from mangos to marijuana (in South Africa known as dagga), which they grow in ever-increasing clearings in the forest.

"The story shows the tension between human needs and bio-diversity. The confrontation is very visible," says Munnik.

His articles helped place the story on the national agenda through subsequent reports on radio and television. And Munnik believes the coverage has increased the chances of a compromise that will benefit both humans and the environment. Danced has recently chosen to support a project in Dukuduku with exactly these aims.

Water for all

Munnik counts a long-running "Water for all" campaign as a victory for the magazine, the RDSN network of NGOs and the South African Municipal Workers' Union. In 1999, the campaign was picked up by the African National Congress which then promised 6 000 litres of clean water a month to every household in South Africa.

A widespread cholera epidemic in KwaZulu-Natal has since confirmed that EDA and other campaigners had very good reasons to ask for access to clean water for all.

Land & Rural Digest has also been very successful in focusing attention on continued racist terror against farm workers in Mpumalanga province and in contributing to the debate on land rights. Given that the occupations of farms in neighbouring Zimbabwe was copied on a minor scale in South Africa in late 2000, it is safe to predict that access to land could become an explosive issue in South Africa.

On the downside, the magazine still has a long way to go to become commercially successful. Advertising in the magazine is sparse. And much of the total circulation of 4 000 is given away for free to politicians and others with influence in the environmental debate. The number of paying subscribers was hovering around 1 200 in January 2001.

"We have been more anxious to get known than to get subscriptions. We spoilt people. But this meant greater influence," says Munnik. His unit is planning to make a major contribution to the NGO Forum at the second UN Earth Summit in Johannesburg in 2002.

Dressed to rule

Support from Danish consultants has helped young officials to gain the confidence to tackle polluters who were previously untouchable

On the 16th floor of a highrise building in downtown Johannesburg is an overcrowded open plan office whose colourful posters, sprawling piles of paper on the floor and lights burning deep into the night suggest the headquarters of a hyperactive grass roots organization.

Polluters beware: this is the office of the Department of Agriculture, Conservation and Environment in Gauteng Province. The employees have both the power and courage to take decisions based on their positions. Over the last six years many a large company in South Africa has been forced to realize that the new government is getting tougher on environmental standards.

The officials credit Danced for much of their self-confidence and energy. Shortly after the rebirth of the department in 1994, they were taken through a training course run by Danish and local consultants.

"We went from uncertain, nervous attitudes to trusting that we were on the right track. We could now walk into a meeting and articulate our ideas," says Lize Bothma, one of four deputy directors of the department.

Prior to 1994, the department mainly dealt with conservation and agriculture. In the new South Africa, focus was shifted to industrial and urban pollution. Danced's consultants helped the department write new manuals for the now mandatory Environmental Impact Assessments of new developments. But perhaps the most valuable contributions by the experienced Danes were their efforts as literary midwives and sparring partners for the relatively inexperienced officials in a department under reconstruction.

A battle won

When the phone rang with new cases, the real life problems often became education material in the courses conducted by the consultants. The project was constantly adjusted to accommodate the very busy reality of the officials.

"Danced deserves praise for being flexible enough to change the projects when the reasons were convincing. That helped us to adjust to

the very dynamic developments in South Africa," says Morten Jorgensen, the chief technical adviser on the project.
The Danish support also helped the officials to make decisions they otherwise might have shied away from.

"We were given courage by international consultants who had tried it all before," says Dee Fischer, deputy director for waste management in the department.

She felt the heat from industry when the department refused to renew the licence for an incinerator that had been closed down after protests from people living nearby.

"It was revolutionary. It was unheard of, and there was just mayhem. The general opinion was that if this incinerator couldn't operate, then all incinerators might as well be closed down."

But her determination paid off. The owners of the incinerator claimed that they were unable to test their emissions for dioxin, a highly toxic waste product.

"We stuck to our guns. And now we are going to have our first dioxin test," says Fischer.

This victory has had a number of effects. As the disputed incinerator treated medical waste, Gauteng Province will now lead a new Danced supported project aimed at developing a strategy for sustainable management of medical waste.

"The controversial recommendation will end up influencing national policy," says Fischer.

The art of asking questions

Field trips to industries were a major reason for the success of the Danced project. Because it was part of a course, and perhaps because the visits were often requested by foreign consultants, the officials got access to industries they never had visited before.

"The consultants took us there as a learning experience, not for us to come back the next day with demands," says Fischer.

"So we waited six months," adds Bothma, laughing.

The visits taught the officials that they can tackle pollution more effectively by asking better questions.

"We are being proactive now, asking the right questions. We don't just want to know what is going into your hazardous waste. We also want to know why it is there in the first place," says Fischer.

This is the philosophy Danced pursues in its cleaner technology projects for South Africa's industry (see "With stick and support", page

56). And this is the thinking that will eventually reduce the size of new waste dumps in the cities.

Mary Metcalfe, Gauteng's minister for environment and Fischer's and Bothma's political boss, subscribes deeply to these ideas. She constantly tells her officials not to "fiddle at the edges" of the problems. She would rather concentrate on less waste than more "secure" garbage dumps. And instead of concentrating only on recycling projects, she wants a focus on waste reduction and re-use.

From fig leaf to tool

This is just one of many examples of a South Africa hurrying through progress that took decades in Europe.

"We are still seen as a rock in the way of development. But attitudes are changing," says Bothma.

As deputy director responsible for planning, she is often squeezed between two issues: politicians have promised the nation that they will build as many new houses as possible, but the government also wants to be more responsible about the environment than the apartheid rulers. Initially, the demand for a large number of cheap houses meant that the environmental impact of the new housing schemes received little or no attention as discussed in the chapter on the SEED project (see "Patience through progress", page 73).

"Previously, the Environmental Impact Assessments were used in an attempt to convince us that the projects weren't too bad. Now they are used to influence the planning, rather than justify what has already been decided," says Bothma.

"New schemes are compromising a bit on the size of the houses to make sure there is money enough to put them in the right place. People are becoming aware we don't want to deny development but just make sure it happens in the best place," says Bothma.

More money

The increased focus on the environment has secured extra funding for Gauteng's environmental department at a time when public spending elsewhere is being slashed. The environmental budget has doubled between 1997 and 2000.

One reason is that South Africa is trying to secure growth and jobs through tourism. Nationally, environment and tourism shares the same minister, Valli Moosa. And he is well aware that tourists won't like a polluted environment.

The officials in Gauteng do however fear that coupling environment and tourism could once again move the focus from industrial pollution and waste problems to national parks and conservation.

"The media focus on the penguins caught in an oil slick was a clear example of that," says Bothma, referring to the massive effort put into a highly publicized cleaning exercise following a huge oil spill in July 2000.

Jorgensen has, however, no doubt that attitudes have changed dramatically since 1994. He is impressed with the environmental department's ability to further the developments initiated by the project.

"They have revised our manuals to an extent where they are almost unrecognizable. They have constantly updated them with experiences learnt and with new legislation," he says.

This enthusiasm does to some extent make up for the massive turnover of staff, so typical of South Africa's often turbulent transition. Many of the best officials have moved on and become valuable employees in national departments, business and private consultancies. Many cited their newly enhanced qualifications when applying for new jobs.

"It became a big thing to have the Danced course on your CV. But their knowledge is not lost. It is just being used elsewhere," says Bothma.

Learning for life

Teachers from two provinces were trained in environmental science and have been shown that there are other ways of education than learning by heart

A few weeks before Nelson Mandela became South Africa's president in 1994, Cliff Olivier got a visit in his office in the ministry of education in neighbouring Namibia.

The guests were leading politicians from Mandela's African National Congress who were destined to become provincial ministers of education. They had been brought to Namibia by rumours of a tailor-made environmental subject called "Life Science", developed by Namibia in co-operation with a Danish development organization, Ibis.

In short, "Life Science" is a combination of Biology and Agriculture subjects which teaches the children how to survive in arid Namibia.

The South African politicians were interested in "Life Science" for two reasons. South Africa had had few experiences of environmental teaching which related directly to the reality of the students. And the experimental style of Life Science represented a clear break with the emphasis on learning by heart which was - and still is - widespread in South African schools.

Life Science has many of the values that South Africa planned to include in its new education vision, Curriculum 2005. And the study tour to Namibia resulted in one of Danced's first projects, carried out by the provinces of Gauteng and Mpumalanga in co-operation with Ibis through Interfund, an umbrella body for a number of foreign NGOs in South Africa. Cliff Olivier was employed as a technical adviser.

Down to realities

The core of the project is environmental education for teachers. But for many of the participants, the course soon developed into a demanding and challenging interrogation of everything they were doing in the classroom.

In the old South Africa, teachers followed a rigid curriculum which was often out of sync with the life of the students. In Biology, children might spend long hours learning about pine trees or seals even when they lived 800 kilometres from the sea and had a blooming sub-tropical environment

outside the windows of their classroom. It was all dictated by the curriculum.

The teaching method was more often than not learning by heart. It was more important to know the exact names for all the fins on a fish than understanding how it breathes through gills. Students were regarded as difficult if they asked too many questions or engaged critically with what they were supposed to just sit down and learn.

Post-apartheid South Africa attempted a large scale revision of these attitudes via Curriculum 2005. Where the old educational system had detailed reading plans, Curriculum 2005 would stipulate goals and leave it up to the teacher to decide on how to reach them. Curriculum 2005 also demanded that schools adapted the curriculum to the local context and encouraged debate, creativity and research.

This was often frightening for many teachers, who had themselves been educated under the old system. In many township schools, where there are often 50 students per classroom, Curriculum 2005 was simply too tall an order.

Tackling frustrations

The Danced-funded project, Learning for Sustainability, had two main aims. The teachers needed training to incorporate environmental learning into subjects like Biology and Geography. They were also desperately in need of teaching tools to help them reach the goals of Curriculum 2005.

A small exercise illustrates how the consultants responsible for Learning for Sustainability stimulated teachers with new methods while discussing the challenges of Curriculum 2005.

The teachers were asked to compare Curriculum 2005 to an animal of their choice. One chose the elephant, because it is "very big and feared", but also because "one gets valuable products from the elephant", and these "products" make for "a stronger education system".

Another teacher wrote that Curriculum 2005 makes "me feel like a monkey" because "it drives me crazy" and "makes me feel incompetent". "I have lost faith in myself and end up acting irresponsibly."

These participants in the Learning for Sustainability had an important advantage over thousands of other teachers: they had someone with whom to discuss their frustrations. In many instances, the consultants finally managed to convince the participants of the advantages of the new system.

"Curriculum 2005 stipulates outcomes, but hasn't got much of a framework. Many people said this was a weakness. We saw it as a strength," says Olivier.

Into the wetland

In the industrial and mining town of Springs, east of Johannesburg, the Danish consultant Kith Bjerg Hansen, herself a teacher, used a local wetland to show teachers and students why environmental cases often develop into clashes between different interest groups.

The pupils were first asked to find out who was using the wetland. Afterwards they were divided into groups, each representing wetland users. The bird watchers demanded that the area be protected. The angler wanted free access with his fishing rod. The farmer wanted to drain the area and grow genetically modified maize. A foreign donor was ready to make a soccer field for children from the nearby township while the parents were more concerned about securing a safe route through the wetland to school.

After having presented their characters to the class, the pupils wrote letters to the "authorities", arguing their various standpoints. They also built models of possible solutions to the dilemma.

"The idea was to use the story and the characters to show the students how to negotiate solutions. Only then would they relate the discussion to their own local environment. The idea was not so much to get the students to make the 'right' decisions, but rather discuss possibilities, constraints and consequences," says Hansen.

Pictures of change

As another example of new teaching methods, the teachers were supplied with disposable cameras and asked to photograph their environment. They came back with pictures of waste dumps, open air butcheries, crocodile-infested rivers and people spraying pesticides.

The pictures were displayed on boards, and the teachers had to write a story, draw speech balloons and discuss the reasons for problems and possibilities reflected in the pictures.

These demands for creativity, innovation and reflection from students are far from what really happens in most South African schools. But the project went one step further and got the teachers to reflect on their own teaching as well.

In an evaluation of Learning for Sustainability, the teachers tell how they have become more confident at asking questions and that they, probably most important of all, are no longer scared to risk making mistakes on their route to change.

Towards a larger project

Learning for Sustainability has been carried out in a South African education system that is in deep crisis. The desire to cut down public spending resulted in the government dismissing thousands of teachers after 1994. Every year since the advent of democracy, the number of students leaving school with results qualifying them for university entrance has decreased. Only in 2000 did this trend show signs of improvement.

Learning for Sustainability has had its share of minor and major problems by introducing new programmes in a traditional and often conservative environment:

- In one area the project was hampered by violence. A student was shot and for months the teachers felt unsafe in the school.
- Some teachers in the project did what their students would often do if they didn't understand their homework. They stayed away from the next meeting.
- Week-end excursions would sometimes be hampered by jealous husbands demanding that the female teachers came home at night.

The whole context of the project was changed in 2000 when a new minister of education put Curriculum 2005 on hold until the reasons for its many problems had been investigated.

Still, the sum of experiences in Learning for Sustainability have been so positive that in 2001 Danced donated R30 million to a new and much larger programme. It is a three year national project which will operate in all nine provinces, but work will be focussed in three.

The idea of tailor-made educational materials and the training of teachers in environmental science will be valuable no matter on which national education policy the department finally decides.

Progress through patience

Attempts to promote energy-saving and environmentally-friendly housing in South Africa's townships usually hits a common barrier: Savings demand an investment that the poor can't afford. Danced tries to motivate by way of examples

When Monwabisi Booi applied for a position as consultant for one of Danced's most challenging projects, he held a university degree in development studies. But he soon realised that his most important qualification was the higher degree in patience you only learn through growing up in Africa.

Booi himself lives in a shack in Cape Town's largest black township, Khayelitsha, where he works for SEED (Sustainable Energy, Environment & Development Programme), a Danced-funded project that promotes environmental consciousness among the poorest in South Africa.

"The Danes are always very eager to see results," says Booi, as he takes me on a tour through an area with 2 309 new houses, built as part of the government's election promise that it would build one million low-cost dwellings.

Half-way up the walls of the tiny houses is one of Booi's most visible achievements to date: ventilation holes meant to contribute to a better and more healthy environment in often over-crowded homes.

The houses also demonstrate an example of the massive challenges facing SEED. Booi points out the abandoned attempts to install insulating ceilings under the corrugated iron roofs. SEED advocates these insulated ceilings because they attenuate the heat of summer and also preserve warmth in winter. It was thus hoped that consumption of wood and paraffin might be reduced. They are the fuels of choice for creating warmth in Khayelitsha, and the resulting pollution has contributed to Cape Town's status as one of the tuberculosis capitals of the world.

But the future occupants of the houses could not be convinced. The budget was so small that it became a choice between the ceilings and three extra square metres of living space. With houses of just over 30 square metres, people went for the extra space.

"Their next priority will be a mat on the floor. After that comes curtains. Only then will they consider the ceiling - and that will be to make the house look nicer," says Booi.

The example drives home the point: energy awareness is difficult to promote among the needy. The ceilings will pay for themselves over some years when the bill for paraffin and firewood drops. But investments meant to create long-term profit is a luxury reserved for the rich.

Booi hopes to make greater inroads when people embark upon the inevitable extensions of the small houses. In SEED's demonstration house in Khayelitsha, they can find examples of fireproof and insulating materials at relatively low prices.

By way of examples

"To get people to buy into environmental issues, it is good to link it to their needs," says Booi.

To this end, SEED has arranged a competition to fight one of Khayelitsha's most visible environmental problems: sand drift. The township is largely built on dunes which are constantly shifted around by Cape Town's strong summer winds.

Booi will reward the house owner who fights sand drift most efficiently through planting. The award is an insulated ceiling which the winner must promise to market by allowing residents of the area to come and have a look.

From his office in a newly-opened energy centre, Booi and the municipality are marketing low-energy bulbs and water-saving shower heads.

Eskom, South Africa's national electricity provider, has promised to donate 200 bulbs and 10 ceilings in a new, cheaper material which SEED has tested in Johannesburg townships. But the rest of Khayelitsha's population, of close to a million people, will still have to invest before they can save.

Expensive savings

"We offer an environmental agenda to the poorest which they can seldom afford," concedes SEED's chief technical advisor, René Karottki.

SEED's NGO-partner in Cape Town, Development Action Group (DAG), is considering a money-lending programme to overcome this problem. A sort of green finance for the poor.

Another of SEED's ambitions is to make solar power fashionable among the emerging black middle class and then hope that the concept will become popular with others. South Africa has sun in abundance yet surprisingly few solar panels.

Absurdly enough, simple use of solar power has been known for generations in the rural areas in the eastern Cape, where most of Cape Town's Xhosa-speaking population originates, says Mfundo Ngcaphe of DAG. But since people moved to the townships, they haven't cared much about energy consumption. During apartheid, the residents of the townships boycotted electricity and water payments.

"In the cities people have got used to rely on the government for things like electricity. So the lack of environmental consciousness is part of our history," says Ngcaphe.

Information counts

SEED is active in Khayelitsha, in townships around Johannesburg and in two rural areas. The programme has been most successful where it has managed to combine environmental efforts with initiatives that have an immediate financial pay-back. One example is rural energy centres where farmers in co-operatives work with environmental issues.

The co-operatives advise on energy saving and alternative energy and sell firewood and solar-driven equipment in areas where huge distances and few suppliers have driven up the prices of bottled gas and paraffin.

All the activities of SEED are covered in the project's own newsletter, mailed to politicians and other decision-makers. Karottki regards this long-term policy work as one of the major aims of the project.

Phumzile Mlambo-Ncguka, Minister of Energy and Minerals, is among the people whom SEED has managed to interest in the lessons learnt from the programme. Her constituency is Guguletu township in Cape Town which was hit by a tornado in August 1999. SEED has advised on the rebuilding of the area and attempted to make the new houses as energy-efficient as possible.

A local development organization assisted by SEED has established an energy centre in Guguletu which advises on lower energy and water consumption. It also sells recycled and second-hand building materials and solar-powered stoves.

Spokesman for the poor

Back in Khayelitsha, Booi has added an important portfolio to his job. He has become a sort of ombudsman for owners of the many new houses erected by busy contractors.

Local developers and South Africa's government face the same obstacles as SEED. Their clients have no money. The developers are therefore often forced to build houses which can be financed by the government's small housing grant alone. The result is small houses, often

of poor quality. But their owners seldom have the expertise and knowledge to demand compensation or repairs. For this reason, Booi has become an unofficial spokesman for the house owners.

In the new development of 2 309 houses he is trying to help owners who have been unlucky enough to get a corner site on a slope in the dunes. The urban planning happened long before anyone was interested in the environment and erosion is already so rampant that some foundations are sliding away.

"It's quantity, not quality, that counts for the developers. That is a huge impediment," says Booi.

He has long realised that better housing and respect for the environment will only happen through very patient lobbying of politicians to get them to demand better quality from contractors. And politicians will only react when their voters become conscious enough to apply the necessary pressure.

In economically poor Khayelitsha, this kind of strategic, long-term thinking is only viable when it's backed by foreign donors and visible examples.

"To just speak doesn't make a difference here. It's only when you demonstrate things that they'll begin to understand," says Booi.

Time to focus

After five years of policy work, experiments and opinion formation, Danced's assistance in South Africa is now moving into a phase of implementation.
There is a need to make ideas more tangible

South Africa's efforts to improve the environment are extremely challenging at a time when huge resources are needed to rectify the imbalances left by apartheid.

Seen in this context, the Danish contribution of 500-million rand over seven years is small. The driving force for a better environment has been South Africa's own desire to reach international standards after many years in isolation. Danced has offered Danish know-how when it was relevant and of possible benefit to the process.

According to most of the South Africans interviewed for this book, Danced's support seems to have made a difference on four issues: The environmental debate has been strengthened and the public involved in the process. Danced has contributed to coherence in the struggle against pollution. Officials and grassroots activists have received education and support. And Danish funds have made it possible to experiment in areas where tight budgets might otherwise not have allowed it. A brief summary of some of the experiences:

Open debate: South Africa's new, democratic constitution is a major break with the authoritarian past. The constitution now demands that everybody is given a chance to be heard before parliament passes new legislation. This is quite a undertaking given that 12 million people can't read and write. But Danish funds have in a number of instances supported public participation, making it possible for at least the most active and directly affected parties to get heard.

The national waste management strategy is a good example. Some of the participants in this process credit Danced for the fact that representatives ranging from industry to the non-governmental organizations (NGOs) and labour unions were able to formulate the actual documents in co-operation with officials and the minister responsible for the strategy. The NGO representative at the negotiations, Jenny Hall, finds that the process helped to remind the bureaucrats of the real world: "We got a total solution rather than just a technical solution," she says.

Coherence: Danced got a rare chance to support a coherent environmental strategy as South Africa started afresh after the transition to democracy in 1994. Outdated policies were abandoned, old legislation revised, and the entire bureaucracy re-organized. Danish support has in

some instances made it possible to close possible gaps and thus help to ensure that the process was covered from strategy documents on ministerial desks to the dirty realities on the ground.

Lessons learnt have been shared. The Department of Environment and Tourism is utilizing experience from Danced-funded waste projects in Soweto. The Danced-supported NGOs have been chosen so that they work in the same fields that Danced is supporting at government level.

"Danced has a far more strategic approach than other organizations," says Victor Munnik, who has received support for an environmental magazine aimed at enhancing public debate.

Another veteran on the South African NGO scene, Bobby Peek, has also noticed Danced's attempts to create coherence: "Danced wants projects to interlink. That is a very important concept which needs to be nurtured," he says.

Dressed to rule: Danced's most important support of change during its first five years in South Africa is also the least visible. The results are stored in the minds of the many people who have attended courses, been supported in their daily work for the environment, or received valuable inputs before making difficult decisions.

The support to the rebuilt environmental departments in the Gauteng and Mpumalanga provinces is a good example. Young and relatively inexperienced officials were supported by Danish consultants before visiting major industries with an often unpopuar message: in the new South Africa you can no longer pollute as you wish. "We were given courage by international consultants who had tried it all before," says Dee Fischer of the environmental department in Gauteng province.

Funds for experiments: South Africa's budgets have been very tight since 1994. Re-organizing the apartheid system has been costly and support from donors such as Denmark has in many instances offered the only chance of doing more than the most necessary.

"Our luck is that the money from Danced gives us a chance to experiment," says Les Venter, one of the many officials working with complicated waste problems in the sprawling townships of Soweto outside Johannesburg.

In another corner of Soweto, Lee Boyd remarks that the Department of Water Affairs and Forestry is able to utilize the success of a Danced-funded project which has mobilized the local community. "Other donors are now ready to become involved in new projects. They can see it's worth it when communities are taking part," she says.

Critics of Danced's programme accuse it of losing focus here and there in the attempt to cover everything. In some instances the programme is

not just wide, but too wide in its ambition to support all levels in the process from overall strategies to minor pilot projects.

Danced has also paid a high price for experience in projects that became focused on development rather than environmental assistance, in which most of the Danced consultants have their expertise. This will invariably happen in poorer areas of South Africa where solving environmental problems is intricately connected to basic development.

Time to show how

The desire to experiment has also meant that tangible results of Danced's programme are few in some areas. A number of people interviewed for this book see an urgent need to practise the many words in strategies written by South Africa with help from Danced and other donors.

Danced itself has acknowledged the need for concrete steps on the way forward. Major items on the programme for the years to come will be pilot projects that Danced will try to get elevated to a status of national demonstration projects by the responsible ministries. Lessons learnt can then be marketed countrywide. The demonstration projects will be backed by support of the involved ministries. A third component will be financial support for the acquisition of Danish technology when relevant.

The nation's first wind farm is a good example. South Africa's huge coal mines and cheap electricity have so far put alternative energy on a back burner while Eskom, the national electricity producer, seems more interested in developing a new nuclear reactor then promoting solar power and wind energy.

A group of business people with a passion for the environment has meanwhile taken it upon itself to build a wind farm outside the village of Darling, north of Cape Town. The ambition is to get the five windmills connected to the national electricity grid through an agreement in terms of which Eskom promises to buy electricity from the mills when winds are strong, and deliver power in return in calm weather.

Danced has supported the decision by Phumzile Mlambo-Ncguka, South Africa's Minister of Energy and Minerals, to make the wind farm a national demonstration project. In August 2000, the minister and a number of officials visited Denmark to witness the Danish experience with alternative energy. This has since been followed up by direct support to the ministry.

Denmark will in other words help South Africa to ensure that the huge investment in modern legislation and environmental administration leads to real improvements on the ground. An important component will be support to environmental departments in provinces and local municipalities which have had a lot of responsibilities delegated to them but often lack the expertise to handle intricate problems.

South Africa has acknowledged that education is an important and hitherto sometimes disregarded component of development, environmental as well as otherwise. Support to environmental training and education from primary school right through to university level will be another important part of Danced's efforts in South Africa in the years to come.