

2006 IAIAAsa Premium

The South African chapter of the International Association for Impact Assessment (IAIAAsa) presents the Premium Award on an annual basis to a project, programme or policy in recognition of excellence in sustainable development, through the application of the principles of Integrated Environmental Management. This year three finalists were selected from the entries and all three were considered by the judging panel, to be excellent submissions.

Pezula Private Estate was chosen as the winner of the Premium Award because the submission showed clearly, in the opinion of the judges, that over the years the project had been making steady progress towards an exceptional example of a well-planned and implemented estate that has incorporated environmental considerations into all aspects of the development and operational phases.

The other two finalists, both new initiatives by government departments which were highly commended by the judges, were the Training Programme for Environmental Management Inspectors (often referred to as 'Green Scorpions') and the Western Cape Spatial Development Framework.

Premium Award winner: Pezula Private Estate

The judges were of the opinion that this holistic project could serve as a blueprint for other developers to follow. Aside from the development's overriding principle of rehabilitating degraded land to allow the return of natural biomes, the judges commented that there was a combination of commitments in evidence, with careful attention being given to detail, which placed Pezula well above the average development in the area of environmental concern. Along with numerous other environmental considerations, rainwater harvesting is mandatory for home owners, as is the use of a biological filtration system for sewage treatment – the filtered effluent of which is used for garden irrigation (see EM Oct/Nov 2005 issue); the feasibility of a desalination plant is being weighed up by management and a preliminary proposal is with the municipality; there is a strict policy for pet owners and a dark sky philosophy is in place, while residents are being encouraged to use solar for their energy needs.

Documented evidence of over 90% compliance with the Record of Decision (ROD) and with the Environmental Management Plan is on record in the form of annual audits over a three-year period.

A rehabilitated wetland in bloom in spring with a predominance of *Wachendorfia thyrsiflora* (right) in flower, about 18 months after the area was cleared of plantation.



Over and above the legal requirement of an Environmental Management Plan compiled and updated by Pieter Badenhorst Professional Services, Pezula undertook two specialist studies in the form of vegetation rehabilitation guidelines compiled by botanical consultant Jan Vlok, who is revered in the southern Cape for his in-depth knowledge of the plant communities, and guidelines for wildlife management compiled by Ken Coetzee.



Award and finalists

Monitoring of rehabilitation

The original site of the housing estate had been under pine and gum plantations for 60 years and Pezula's aim was to rehabilitate these degraded areas back to the original naturally occurring vegetation types of coastal fynbos, afromontane forest or their ecotones (see EM Oct/Nov 2005 issue). Once all the alien trees in a certain section had been cut down and the timber collected for sale, the harvesting debris was spread out and allowed to dry out and then fire was put through it in carefully demarcated areas, as indicated in Vlok's planned burning regime. The burning was multi-purpose, as the fire also destroys pathogens and helps with the regeneration of fynbos. Now that areas of forest are regenerating, fire needs to be kept out of these parts and the staff is on constant alert to guard against accidental fires. Fynbos is more difficult to manage, particularly in a housing estate, as it requires burning, although infrequently. According to Vlok, coastal fynbos in the southern Cape has a natural burning cycle of between 18 and 25 years.

Environmental manager, Jessica Hayes, who specialised in woodland ecology and has been with the development since the start of rehabilitation, called Pezula's approach to rehabilitation one of 'adaptive management', saying



ABOVE: A fire-fighting exercise in a recently cleared area (photo taken in August 2003).

BELOW: The same area (photo taken in April 2006) after the regeneration of pioneering species.



that the process is being monitored on an on-going basis to gauge progress and management adjusted, where necessary, based on results.

She said that no supplementary planting has, as yet, been necessary, although some plants from the search and rescue programme have been planted out into noticeably bare areas and seed taken from the pioneers that have come back has been scattered into a few patches where the rehabilitation has been slower. Plants have regenerated prolifically from the seedbank that was dormant under both the pines and the gums. Initially, there were doubts about the rapidity of regeneration in the areas that had been under gum because of the utilisation of allelopathic (growth inhibiting) chemicals by *Eucalyptus diversicolor* as an anti-competition mechanism. It seems the chemical leaches out faster than was expected because regeneration in those areas has been better than expected.

Monitoring of the rehabilitated areas has been done by taking monthly aerial photographs in transect across the estate, and through the commonly used scientific monitoring system of fixed-point photography. The latter is done annually at eight points across the project recorded on GPS, that were previously plantation sites and these photographs, which are taken in all four directions over 360 degrees, are fair indicators of how the vegetation is progressing. They also serve to convey whether the vegetation is showing an inclination towards fynbos or forest. The general indication, according to Hayes, is that both the fynbos and forest vegetation is still in a pioneering stage but there has been a change in terms of the densification of pioneering species over time. She was pleased to be able to report that a few secondary species, little Yellowwood (*Podocarpus falcatus*) and Assegaai (*Curtisia dentata*) trees, were just starting to come into evidence in areas protected by pioneers such as the *Rhus* (Current) species and *Virgilia oroboides* (Keurboom), indicating the expansion of the afromontane forest.

Two students from SANParks have done monitoring work on the forest edge, while an Honours student from Stellenbosch is drawing



A small Candlewood (*Pterocelastrus tricuspidatus*), a tree of the afromontane forest, pushing its way through plantation debris.

comparisons between the areas that were burnt and those that were not burnt. The Honours thesis should be available by the end of the year.

Hayes spoke about the 'exlosures' that have been fenced off to keep out browsing and grazing factors – two areas 15m x 15m in rehabilitated fynbos that has been burnt and not burnt, respectively. The fences are 1, 8m in height.



Environmental manager Jessica Hayes taking fixed point photographs as part of the monitoring programme on the returning vegetation.

These have been established to monitor the return of plant species in comparison to areas that are being utilised by bushbuck, Blue Duiker and the Cape Grysbok. She says the results will not be definitive as the enclosures cannot exclude baboons and birds.

Increasing faunal and avifaunal species

Wildlife on site has become more prolific over the last three years since the bulk of the plantations were removed and the bushbuck population is flourishing, with lambing in process at present (September), as it is spring. As of now, the size of the natural areas and species composition is limiting the size of faunal populations. In future, certain populations may have to be managed as there are few natural predators on site – leopard spoor has been seen but this animal is probably coming across from the neighbouring Sinclair Nature Reserve. Hayes is delighted about sightings of Blue Duiker in the afromontane forest and she mentions that the bushpigs have come out of the forests and are rooting out plants in the softened soil of the landscaped areas, since the recent heavy rains.

Another interesting factor concerns the underpass that Pezula constructed under the Noetzie Road, which is fenced and crosses Pezula between phases two and three. The tunnel is fitted with a video camera with the purpose of monitoring whether animals are in fact making use of this corridor that has been provided for that purpose. Footage of bushbuck utilising the open tunnel has been recorded and although the spoor of bushpig and genet has been found in the underpass, the camera has probably not been set low enough to pick up images of these smaller animals. Hayes says that it is likely that the numbers of animals utilising the tunnel will increase as they become aware that it is safe to do so because other animals are making use of it.

In 2003, the Plettenberg Bay Bird Club was invited to do a survey of the birds present on site while the plantations were still largely intact and the club has a long term project in place to monitor the increase of bird species on site. Past President Brian Denman says that the initial survey recorded 84 species and that over a two and a half year period that has increased to 129 species. He emphasises that the monitoring team are amateur birders looking for species diversity. To him the most exciting recurrence has been that of the wetland birds – the African Sedge Warbler and the Yellowrumped Widow – which have come back with the vast increase of water and the regeneration of marshland vegetation on site, since the removal of the water hungry pines and gums.

Public access and skills development

Since the project was at concept stage, concern has been expressed that such a magnificent area of coastline, including the area of pristine afromontane forest above the Noetzie River, should be reserved for a handful of home owners. In answer to this concern, developer Keith Stewart, chairman of the Pezula Group, has followed through on his declared policy of allowing controlled public access. The botanical garden which is being created on site, comprising predominantly locally indigenous plant species, is designed for outside visitors and it is being visited by garden clubs and the local chapter of the Botanical Society. Group visits can be pre-arranged and bird clubs and other interested parties are being taken on guided trails. Local cricket teams have been utilising the cricket oval at the Field of Dreams adjacent to the private estate, which has been designed for the training in various sports of promising youngsters from less privileged backgrounds; and during the recent oyster festival a running/cycling event was hosted on the estate.

An active educational outreach programme has brought local school groups from the Knysna area to the site and they are taken on trails through the estate where Hayes talks to them about general environmental management, alien clearing and rehabilitation principles and fynbos and forest ecology – in more technical detail for the older groups. She has called on teachers to express their needs so that her talks will slot in with syllabus requirements. Wildlife manager Dennis Robson explains the characteristics of wildlife species found on the property and their habitat choice. Interest from schools further afield is on the increase and an offer has been made by the police force to provide transport for the less privileged schools.

Pezula has a stringent labour policy and the figures on record at the municipality for August 2006 show that 447 people are, at present, being employed on site – 399 from the Knysna area and 48 from Plettenberg Bay, Sedgefield, Wilderness, George and Mossel Bay. In-house skills training comprises the induction course, which includes environmental considerations, given to all workers on site; first aid training and training in the use of chainsaws and brushcutters, along with planting techniques, other landscaping skills and fire management. The Pezula hotel, which is outside of the parameters of the estate, has provided training in the hospitality skills and has trained a landscape maintenance team. Since July 2003, the same entrepreneurial band of wood choppers from Dam se Bos has been chopping the wood of gum branches, left over from the timber harvesting, and selling it locally as firewood or braai wood.

Local fishermen who are licensed to fish are given access to their traditional fishing grounds through the estate. They are signed in by security and if they do not have their own transport are taken to their chosen spots by the security company. Pezula is interested in monitoring the species and size of fishes along the coastline and the fishermen are helping by reporting the details of their catch to the security officers who, in turn, report to the estate management.



A small band of entrepreneurial wood choppers, from Dam se Bos, sells all the remaining wood from the plantation clearing.



Pezula's alien clearing team is in operation on an on-going basis. These workers are all from the Knysna area and some have been on the project since 2003. Pezula is a member of the Southern Cape Weeds Forum, an initiative of the Department of Agriculture.

Increasing numbers of birds indicate the improvement of ecosystems; all the Sunbirds are on the increase in the returning fynbos. Denman comments that Common and Sweet Waxbills are there in growing numbers. The Plainbacked Pipit can be seen all along the verges of the ribbon roads where the veldgrass is kept short, as they favour this habitat. Forest birds, such as the Narina Trogon, the Knysna Lourie and the Green-backed Bleating Warbler are heard and seen more frequently.

"Pezula are continuing to do a marvellous job and the rehabilitation is paying huge dividends. We saw the Bully (Brimstone) Canary for the first time in November 2005, the Whitethroated Canary for the first time in June 2006 and the Klaas's Cuckoo for the first time in August 2005. We visit the site once a month and have seen the Victorin's Warbler, which is a bird of the coastal thicket/fynbos and is endemic to the southern Cape coastline where it is found only on south facing slopes. This is a bird which is locally common but skulks in thicket and is not easily spotted. As more plant species come in, so more bird species will arrive. Pezula deserves to be lauded for the job it is doing and hopefully other developers along the Garden Route will sit up and take notice," remarked Denman.

ELC and auditing

Since the start of the development and in keeping with the requirement of the ROD, an active Environmental Liaison Committee (ELC) has played a 'watchdog' role. The ELC is chaired by renowned coastal ecologist Dr Allan Heydorn, while other members are Percy Langa of the provincial Department of Environmental Affairs and Development Planning (DEA&DP); Greg McCulloch, Knysna Municipality's environmental consultant; Lorna Watt of the Knysna Environmental Forum, who also represents the Wildlife and Environment Society (WESSA); the Noetzie Conservancy Owners Association; Peet Joubert of SANParks; and Dick Wooding of the Sparrebosch Home Owners Association.

Dr Steve du Toit, who is now with WESSA Western Cape, was the original DEA&DP representative on the ELC and in his opinion, from a biophysical perspective, Pezula has focussed on the bigger picture: "The management has done its utmost to ensure that the site is continually improved in terms of biodiversity and sustainable management."



Jan Flemming

LEFT: In this aerial shot, the clearly demarcated disturbance area is evident around the houses that are being built in the regenerating indigenous vegetation.

BELOW:

Ornithogolum dubium (Yellow Chinchinchee) in bloom in the first season after clearing and burning.

RIGHT: The bushbuck population at Pezula is flourishing.



In reference to Pezula's proactive proposal that a desalination plant, with research undertaken by Pezula, be considered to help alleviate Knysna's water problems, Du Toit makes the observation that: "In terms of a comparative assessment of alternatives during a thorough EIA process, it is important that desalination, with its problems and advantages, be considered as a viable alternative to the utilisation of existing water sources, given the state of our water resources."

Heydorn comments that the rehabilitation programme at Pezula is unique, and says he hopes the Award will encourage Pezula to continue with sound environmental management,



Dennis Robson

the Institute of Environmental and Coastal Management at Nelson Mandela Metropolitan University, is that everything concerning the natural environment has been positive. In his opinion, the Premium Award is thoroughly deserved and he also expresses the wish that other developers would follow Pezula's example.

Questioned about areas of non-compliance, Bornman says these were minor infractions, largely relating to individual contractors, responsible for building the houses that are now starting to go up on site, not following the rules laid down in the Contractors

Code of Conduct – even though careful environmental induction procedures are followed every time a new contractor comes on site and Hayes is strict with imposing fines. He confirms that questionable soil erosion management

long after the ELC for the construction phase has disbanded. Pezula's 2006 environmental management audit recorded a 96% compliance and the comment of the independent auditor, estuarine ecologist Dr Tom Bornman of

during the construction of the Field of Dreams in 2005 caused an incident, but that a subsequent survey of water quality in the Noetzie River established that, although there was an increase in turbidity in the river for a short period, there was no lasting impact on the fauna and flora of the river.

The EMP is updated by Pieter Badenhorst on an annual basis after the audit when new concerns, plans or practices need to be included. These decisions are made in discussions with the ELC.

Home owner Sandy Shires, who was one of the first to take occupation on site, comments that Hayes is continuously involved in maintaining the "environmental ethos" at Pezula: "I would like to congratulate and thank her. She stands her ground against anyone who interferes with the environmental principles and has a clear and honest vision for upholding this ethos."

Report by Carol Knoll.

Photographs by Jessica Hayes, unless otherwise indicated.

Finalist: Training Environmental Management Inspectors The roll-out of the Green Scorpions

This initiative undertaken by the Environmental Quality & Protection Branch of the Department of Environmental Affairs and Tourism Directorate: Enforcement, stems from the changes made to Chapter 7 of the National Environmental Management Act (NEMA) by the National Environmental Management Amendment Act of 2003. In the amended Act provision was made for the designation of dedicated environmental enforcement officers, known as Environmental Management Inspectors (EMIs), and because of the wide investigation and enforcement powers to be conferred on these inspectors, it was clear that significant training would be required to build capacity.

The development and presentation of the bridging training course for EMIs was done by a consortium comprising the University of Pretoria (UP) and TRAFFIC, a joint programme of the IUCN and WWF. The judges of the IAIA Award commended DEAT for its consultative planning approach and the remarkable speed with which the programme was devised and carried through to the training of 450 officials within a nine month period, commenting that the syllabus covered an extensive range of aspects to effectively equip an EMI to carry out the task of the enforcement of the country's environmental laws (see article page 14 EM May/June 2006).

The training programme (project) and its allied initiatives was entered for the IAIA Award by Theo Fischer of the consultancy, Environmental Science Associates who were part of the team of scientists assembled by UP. The project director was Melissa Fourie of DEAT's Enforcement Directorate, while the project managers were Prof Willem Ferguson of UP and David Newton of TRAFFIC East/Southern Africa. TRAFFIC is an NGO that has hands-on experience in enforcement training. The university called on expertise within their Departments of Law, Public Health and Geography, their Centre for Environmental Studies and on specialists outside of UP.

In her presentation at the IAIA conference, Fourie commented that enforcement of environmental legislation in South Africa had, in the past, been at best inconsistent, often disconnected and badly communicated and, in some cases, totally absent. There had been very little co-operation between enforcement officials in different agencies, even within the same departments, limited functional specialisation and far too few enforcement officials. She spoke about the urgent need to prepare enforcement officials for the far-reaching powers they were now being given.

In February 2005, a National EMI Training Symposium was convened



Officials attending a lecture during the Cape Town session of the EMI Bridging Training in May 2006.

including representatives of DEAT and other national departments, provincial environmental departments, key municipalities, the SA Police Force and key NGOs. The symposium was also attended by enforcement and training experts from the Environment Agency of England and Wales and the US Environmental Protection Agency. Key decisions made concerning EMI training were that the project should focus on bridging training for existing enforcement officials and that this should in due course be developed into EMI basic training which would lead to intermediate and advanced specialised training. It was decided that a ranking system would be developed for EMIs taking into account experience and seniority. After the symposium, representatives of DEAT and the UK and US agencies drew up a draft EMI training syllabus, the first of its kind in the SADC region.

Chapter 7; Integrated Environmental Management for EMIs; Health and Safety for EMIs; Introduction to Routine Inspections; Administrative Justice in Environmental Enforcement (including Compliance Notices – see page 14 May/June 2006 EM); Investigations, Enforcement and Court Action; EMI networks, resources and inter-personal skills.

The first courses, in the form of 5-day abridged versions of the full 11-day course, were presented to 100 SANParks managers in November and December 2005. In January 2006, the first full 11-day course was presented in Pretoria with courses in Johannesburg, Pietermaritzburg and Cape Town over the following five months. The officials who attended came from DEAT, SANParks, the Greater St Lucia Wetland Protected Area, all nine provincial environmental departments, Ezemvelo KZN Wildlife, Cape Nature and Mpumalanga

training stream from environmental quality EMIs. The specialised training will include sampling techniques, pollution and waste forensic crime scene management, advanced surveillance, etc.

Fourie spoke of the secondary project outcomes saying that there had been a dramatic improvement in inter-agency co-operation. She said the conservation and pollution/waste management people were talking to one another and the first inter-governmental enforcement task teams and operational programmes had been set up. She also mentioned that training and awareness raising had been done with prosecutors and magistrates and that feedback had been given by prosecutors. During the training process, there had been identification of legislative shortcomings and the proposal of certain amendments.

The course material will form the basis



LEFT: Play-acting during the training. DEAT Environmental Management Inspector Ike Ndlovu tries to get past an aggressive 'site manager' (Paul Gildenhuys – Cape Nature) with the purpose of inspecting a facility.

BELOW LEFT: Eight DEAT EMIs, including training project leader, Melissa Fourie, photographed at parliament during the Minister's budget speech.

BELOW: The designation of 15 EMIs from Gauteng's Department of Agriculture Conservation and Environment (GDACE) by Gauteng MEC on 10 July 2006.



In September 2005, the UP/TRAFFIC consortium was awarded the tender to develop and present the Bridging Training. This training was to be given immediate recognition by means of a UP Certificate in Environmental Compliance and this would shortly be converted by additional modules to become a UP Diploma in Environmental Compliance, which would, in time, be recognised as a subject towards an Honours degree in Environmental Management and Enforcement.

In the space of two months, the course materials were prepared, with a website allowing for the uploading of drafts and comments through a discussion forum. Detailed comments were received from the US EPA and the UK Environment Agency. The course material consists of eight modules: Introduction to SA Law for EMIs; Introduction to NEMA's

Parks Board. By June 2006, 420 officials had completed the EMI Bridging Training Course. Only officials who have passed the training may be designated as EMIs.

Fourie said plans were in place to train municipal enforcement officials, along with officials from DWAF and NGOs – and that at least 40 other DEAT and provincial officials had requested training. She said the branding and the uniforms would bring together environment officials from all spheres across the country. The methodology is also being shared with counterparts in the SADC countries.

The EMI Basic Training which is being developed will involve longer training periods, and will consist of a combination of internet-based distance learning and contact learning, and there will be a large degree of specialisation, with biodiversity, conservation and marine EMIs in a different

for an EMI Manual and Standard Operating Procedures. As a direct result of the interaction between DEAT and UP, DEAT provided financial support for an existing joint project of UP's Centre for Human Rights and UNEP, namely the compilation of an Environmental Law Compendium which is now being distributed to all EMIs, prosecutors involved in environmental cases and magistrates attending awareness-raising workshops. An EMI restricted access website has allowed for interaction between enforcement officials and input from experts.

Fourie commented on the fact that this was brand new enforcement legislation and that there was no generic locally developed methodology for environmental compliance and enforcement. She said that designing a course with an extensive amount of information being provided

for officials from diverse backgrounds, vastly different experience and academic qualifications and speaking diverse languages had been a challenge, as had the presentation methods to accommodate these differences, and the logistics of presenting at different centres around the country. The presenters had to be flown to these centres and the attendees taken out of the office for two weeks. She said

that comprehensive monitoring and evaluation was being done by the overseas environmental agencies, the consortium and officials. She added that the priority was to get the training institutionalised and put forward an invitation to all tertiary institutions to present the EMI Basic Training programme.

She concluded by saying that this training would serve to create a paradigm

shift with far-reaching consequences for effective regulation of environmental concerns...that a new methodology had been created within the SA regulatory context, so that proper compliance inspections could be carried out, along with investigations for enforcement action.

Report by Carol Knoll.
Photographs courtesy of DEAT

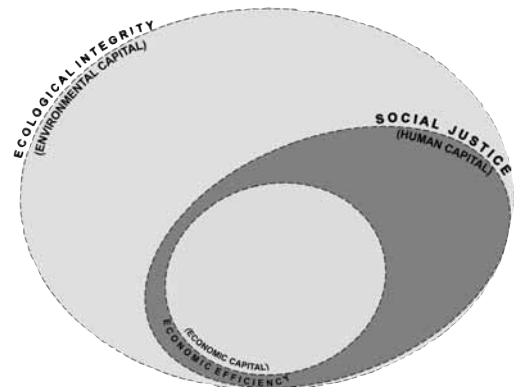
Finalist: Western Cape Spatial Development Framework

The judges commended the provincial Department of Environmental Affairs & Development Planning's (DEA&DP) initiative to create a framework for the management of future development in the Western Cape, saying that a highly comprehensive, visionary document of this nature was long overdue. They were gratified to see that the plan had been structured around constraints to development imposed by the operation of natural systems. Apart from being broad in scale, the judges noted that the document offered practical details that were not usually included in spatial frameworks, such as rainwater harvesting techniques, grey water recycling, alternative sewage treatment, waste recycling, control of noise and air pollution and suggested renewable energy resources. The identification of 'no-go' areas along with those suitable for development was welcomed by the judges.

The main objective of the WCSDF is to change the development path of the province, rather than simply reinforcing established spatial patterns with their associated economic and environmental disparities. It is an ambitious, trend setting project, attempting to simultaneously address objectives of social justice, economic efficiency and environmental sustainability. DEA&DP is of the opinion that the WCSDF provides clear signals about the type of development that is sustainable.

Environmental planners CNdV were appointed to draft the WCSDF and to manage the drafting process, while the SA National Biodiversity Institute (SANBI) served as sub-consultant, undertaking a biodiversity assessment of the arable land and biodiversity resources of the province. DEA&DP assisted with the research and analysis as well as the overall editing process, with

Dipolelo Elford, Chief Director of Environmental and Land Planning, as the project leader. Planners Tania de Waal and Heinrich Mostert, who were responsible for the presentation at the IAIA conference, were part of the internal team which assisted CNdV in drafting the document. The policy was entered for the IAIA Award by Head of Department Trevor Tolmay of DEA&DP.



The Triple Bottom Line Relationship Framework.

Section 24 of the Constitution of the Republic of South Africa, (Act No. 108 of 1996) states that the environment should be protected through reasonable legislative and other measures for the benefit of present and future generations. In meeting this constitutional challenge and in response to a variety of economic growth, social, spatial, planning and environmental issues, the Western Cape has developed a strategic sustainable framework to assist with the management of future growth and development in the province.

The purpose of the WCSDF is to guide and align municipal (district, local and metropolitan) spatial development frameworks and plans ... and to provide clear signals to the private sector about the type and location of development. The framework has distinguished between areas suitable for development and those not

Judges' concerns

Concern voiced by the judges was that there was as yet no certainty that both the EMI training and the WC Spatial Development Framework would be effective in achieving change... in, respectively, securing prosecution of offenders and actually reforming development patterns on the ground.

DEA&DP are fully aware of the problems of getting adequate support for their framework document and in their motivation acknowledged that the WCSDF "...contains ground breaking initiatives on developing sustainable and integrated communities and urban structure that, if implemented correctly, will ensure the necessary spatial changes and improvements to our living environment...". As the judges said, evidence of the success of its implementation has still to be realised in the years ahead, although in the chapter on "implementation - how to make it happen" it is clear that a bone fide attempt has been made to address the well known shortcomings of Spatial Development Frameworks (they have gained notoriety in the past for remaining on the shelf gathering dust).

In the case of both these entries, the judges, along with the Awards coordinator, suggested that specific projects illustrating the effective use of these tools should be entered for the IAIA Premium Award in the future. Particularly since the intention of the WCSDF is to measure the extent to which the various policies are actually implemented over time.

suiting to development. It aims to redress the spatial inequalities of apartheid and promote sustainable decisions – ‘triple bottom-line’ decisions based on ecological integrity, social justice and economic efficiency.

In its analysis of the status quo, the WCSDF looks at three categories – bio-physical/natural systems, socio-economic factors and the built environment, and highlights 28 sectors including climate, water infrastructure (demand and supply), solid waste management, transport, growth trends and migration, income and poverty. Climate change is addressed and likely impacts indicate that over the next 50 to 100 years, the province will become hotter and drier. In the section on hydrology, the status of river ecosystems in the WC shows that an alarming 72% of mainstem rivers are critically endangered.

In the section on biodiversity, twelve key issues have been identified: loss of habitat is the greatest cause of biodiversity loss and therefore agriculture and urban development place great pressure on biodiversity resources and ecosystem functioning – while invasion of alien species is the next greatest threat to biodiversity. Strategies for conserving biodiversity need to focus on keeping natural habitat intact and minimising its fragmentation, especially in threatened ecosystems and along key ecological corridors. The intrinsic value of biodiversity – the critical natural capital which supplies humanity with an array of free services – needs to be acknowledged as crucial for sustainable development. The map (below) shows the overlap between biodiversity and agricultural production potential.

The indications are that the WC is not on a sustainable development path. There is evidence of this in, amongst many others, the facts that there are increasing inequalities between rich and poor and the perpetuating of apartheid spatial planning patterns; the poorest are usually furthest from opportunity and there is no viable public transport; there is a water crisis and supply is struggling to meet demand and there is a collapse of ecological functioning as biodiversity is lost. The WCSDF seeks to put the province on a path to sustainability by delivering on nine key objectives. The document contains 93 policy statements.

Four of these nine key objectives are: to align the future settlement pattern with the location of environmental resources and economic opportunities; to deconstruct the apartheid structure of urban settlements; to protect biodiversity and agricultural resources; and to minimise the consumption of scarce ecological resources.

Two of the policy statements which concern environmental sustainability and urban restructuring, respectively, are: “Between Urban Development and Core, Buffer and Intensive Agriculture areas, an Urban Edge shall be drawn around all villages, towns and cities in the Province to mediate the relationship between these provincial broad spatial planning categories” and “The average gross residential density in urban settlements experiencing urban growth shall be encouraged to increase to 25du/ha before further extensions to the demarcated Urban Edge are considered”. Another policy statement relating to environmental sustainability states that “Water conservation and demand management shall be encouraged through regulation where appropriate. Rainwater harvesting, grey water recycling and similar technical enhancements, such as low flow shower heads, dual flush toilets and water-wise gardening shall be mandatory on all new residential, commercial and community projects”.

The visual impact and appropriateness

of urban settlements, structures and activities is taken into account and, in the document, a quote by Valli Moosa, Minister of Environmental Affairs and Tourism at the time, is worth repeating: “Tuscan villas may look great in Tuscany but they look terrible here. There is a crying need for the emergence of an authentically South African style.we’re a modern, emerging African nation that believes in democracy, openness and transparency. We’re multi-cultural and tolerant. Surely, there is a way of using all of that to create our own unique architecture?”

At the conclusion to their presentation at the IAIIASA conference, DEA&DP commented that, with correct implementation, the WCSDF would achieve: urban restructuring and the creation of economic opportunities; spatial integration of income groups; urban densification and halting of urban sprawl; land reform goals; the ability to cope with climate change; and the protection of biodiversity and agricultural resources.

To make this a reality, the policies within the WCSDF will require a wide range of support from local, provincial and national government, which needs to align the activities of its various departments – and from business, labour and civil society.

Report by Carol Knoll.

