



GMA CASE STUDY – ENVIRONMENTAL IMPACT ASSESSMENT

ENVIRONMENTAL IMPACT ASSESSMENT FOR A LARGE- SCALE CONSTRUCTION PROJECT: INSIGHTS FROM THE GAUTRAIN RAPID RAIL LINK PROJECT

The case study traces the long and challenging environmental impact assessment (EIA) process undertaken by the Gautrain Rapid Rail Link Public Private Partnership in the process of developing the first rapid rail link system in Africa. The various EIA phases took nine years to complete instead of four years as initially envisaged. The lessons learnt along the way will be of great benefit to Phase 2 of the Gautrain Project, as well as other linear infrastructure developments undertaken in South Africa.

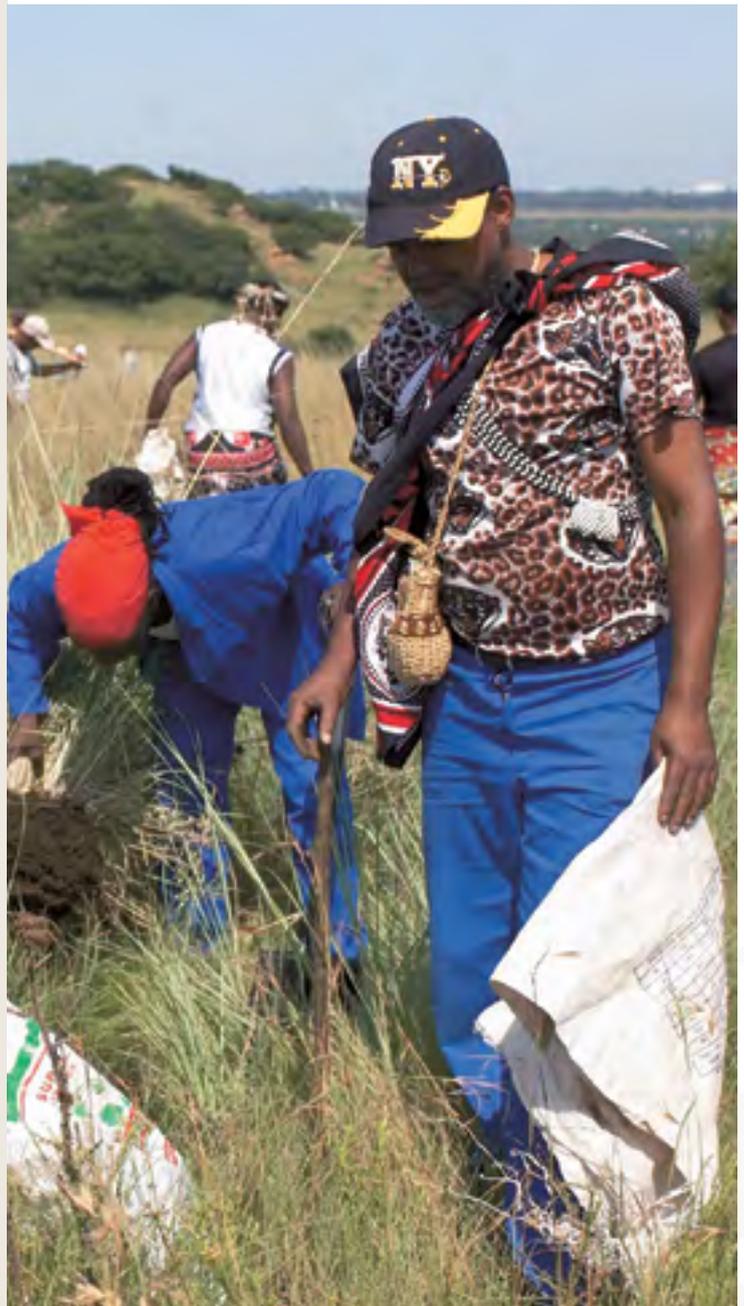
HIGHLIGHTS

THE CHALLENGE

Implementing an EIA process within the framework of developing EIA legislation for a large Public Private Partnership (PPP) infrastructure project and the first rapid rail transport system in Africa proved to be challenging. The main factor compounding the challenge was the decision to undertake a detailed EIA process for the Gautrain Project before the appointment of the private partner in the PPP.

THE OUTCOME

The EIA process for Gautrain Project was successfully concluded in that the necessary environmental authorisations were obtained for the Project. Obtaining the necessary environmental authorisations had cost and time implications for the Project. Valuable lessons were learnt in the process, which stand to benefit expansions of the Gautrain and other infrastructure developments, especially linear development projects.



1. HOW IT ALL STARTED

Imagine you are looking at before-and-after aerial photographs of the Gautrain rail reserve area. Everything that was there had to make way for the Gautrain Rapid Rail Link Project: plants and animals, people's homes, corporate

properties, heritage buildings. Every impact, biophysical as well as socio-economic, had to be assessed in an Environmental Impact Assessment (EIA) study.

At the very beginning of the Gautrain Project in 2001 the government appointed a team of independent EIA consultants, to undertake the complex EIA process. The team of consultants consisted of experts in the various aspects of environmental studies as well as the legislation governing EIA processes. EIA first became a legal requirement in South Africa in 1997 when the first EIA regulations were published under the Environment Conservation Act 73 of 1989.

The team was briefed on the envisaged scope and timelines of the Gautrain Project. It was one of the biggest Public Private Partnership (PPP) infrastructure projects and the first rapid rail link transport system to be implemented in Africa. It would link central Johannesburg, Pretoria, Sandton, Midrand, Centurion, Marlboro and Rosebank in Gauteng with the OR Tambo International Airport, and would include over 80 kms of railway line.

What the team did not know at that stage was that the EIA process would take much longer than expected, starting in late 2001 and continuing right up to 2009 – and that they would have to grapple with unforeseen obstacles, face many stops and starts, and redo much of the initial environmental impact assessment work.

2. FACING THE CHALLENGE

Implementing an EIA process within the framework of newly emerging EIA legislation for one of the biggest Public Private infrastructure projects and the first rapid rail transport system in Africa is a challenging undertaking.

The case study traces the EIA process followed for the Gautrain Project from its initiation in 2001 – when the Gautrain Rapid Rail Link Project was given the go ahead following the completion of a detailed feasibility study, through to the completion of various portions of EIA work in 2009.

“Good relationship management and hands-on involvement of senior Gautrans management personnel, such as Mr Jack van der Merwe and Mr Olaus van Zyl, proved to be key to the success of the EIA public participation process and ultimately the entire EIA process.”

*Catherine Warburton,
Environmental Legal
Advisor, Gauteng
Provincial Government*



Environmental impact assessment involves the assessment of the potential effects of a proposed project on the environment and the measures that could be implemented to mitigate the impacts of the project on the environment. The concept of environment, in the context of EIA, has a broad meaning. It includes everything in the natural environment that impacts on the fauna and flora, as well as all the aspects in the socio-economic and cultural environment that influence human health and well-being.

Many interested and affected parties (I&APs) were involved in the implementation of the EIA process for the Gautrain project.

- The National Treasury and the National Department of Finance, as the financiers of the Gautrain Project;
- The Gauteng Provincial Government (GPG) as the initiator of the Project and the public partner in the PPP Project;
- The then Gauteng Department of Agriculture, Conservation and Environment (GDACE) as the government authority authorising EIA decisions;
- The then Gauteng Department of Public Transport, Roads and Works (GDPTRW, also

referred to as Gautrans) as the Gautrain proponent and applicant for EIA-based authorisations;

- The Concessionaire, the Bombela Consortium, from mid-2005 as the preferred bidder and then as the private partner in the PPP Project;
- The independent EIA consultant teams, appointed by the public and the private partners;
- EIA legal experts, appointed by the public and private partners to ensure EIA legal compliance;
- The Province Support Team (PST) appointed by the GPG to assist with the management of the development of the Project on behalf of the public partner; and
- Over 5500 affected public participants (individuals and organisations) consulted during the EIA process.

The Gautrain Management Agency (GMA) was appointed as a statutory agency to take over the task of running the Project from the PST at the beginning of the operational phase of the Project. The GMA was therefore not involved in the development period of the Project when the EIA work was conducted.

The following challenges are highlighted in the case study:

- Complexity of the EIA process;
- Development of the EIA legislative process;
- Timing of initial Gautrain EIA;
- Difficulties experienced with the transfer of environmental compliance responsibility to the Concessionaire;
- The Concession Agreement;
- Frequent changes in the Gautrain route alignment and designs;
- Comprehensive public consultation process;
- Disputes and litigation; and
- Protracted EIA process and cost implications.



3. GRAPPLING WITH THE ISSUES

The EIA challenges faced by the Gautrain Project are discussed under separate headings in this section, but they are interlinked and should be read as a whole to give a complete picture.

Complexity of the EIA process

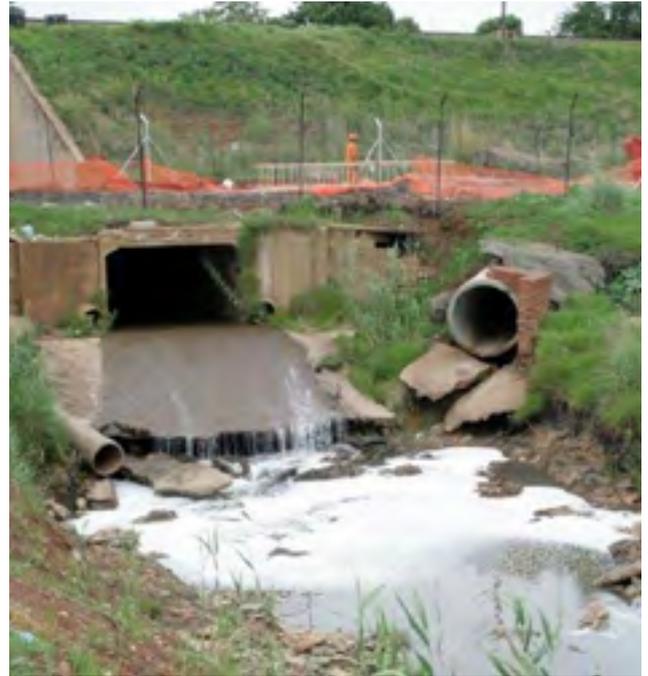
Under the best of circumstances, environmental impact assessment is a complex issue. This is because a wide variety of impacts have to be assessed in any infrastructural development. Impacts need to be studied and assessed on biophysical, cultural and socio-economic aspects. These include aspects such as flora and fauna, surface and groundwater, noise and vibration, air quality, land use planning, property values, environmental resource economics, heritage resources, socio-economics, traffic, and visual aspects.

The assessment process requires a complex network of procedures: studies by experts in the specific field, submission of reports to the authorities, consultations with the public, obtaining authorisations and permits and ensuring legal compliance.

Prescribed EIA procedures need to be followed in order to ensure compliance with EIA legislation. These generally include:

- A screening process and issue identification;
- A scoping process;
- An assessment process and submission of an EIA report;
- Specialist studies;
- Public participation; and
- Submission of an Environmental Management Programme or Plan (EMP).

Gautrans appointed a team of independent environmental specialists to investigate and identify the potential environmental impacts



of the Gautrain Project. The investigations included 20 different specialist social, economic, heritage, noise and vibration, legal and biophysical environmental studies. The Department of Public Transport, Roads and Works (GDPTRW, also known as Gautrans) appointed Bohlweki Environmental (Pty) Ltd as its independent environmental consultant, and, later on in the process, the Concessionaire, Bombela, appointed its own independent environmental consultants.

The EIA consultants appointed by Gautrans, divided the EIA process up into the following initial steps (as set out in the Gautrain EIA Executive Summary Report of 21 October 2002), which culminated in an Issues Report, rather than a Scoping Report. Developers could apply for exemption from the scoping process in terms of the initial EIA regulations, as discussed in the next section.

- The issues for investigation were identified by means of site surveys and inspections and consultations with specialists, the authorities, the public and key stakeholders, as well as a review of existing information and the relevant literature.

- The findings in the case of each issue were synthesised to determine the significance of each issue.
- Each issue was then rated as low, medium or high, and described as positive, negative or neutral.
- The issues rated to be of medium to high significance received specific attention in the specialist studies undertaken during the EIA process.

Various alignment options or plans were published in each area for consultation at the initial stage of the EIA process. These were used to inform the Issues Report.

Development of the EIA legislative process

At the time when the first steps were taken to implement EIA for the Gautrain Project, the EIA legislative process was relatively new.

EIA was first introduced as a legal requirement in South Africa in the form of sections 21 and 22 of the Environment Conservation Act 73 of 1989 (the ECA). In September 1997, EIA regulations were made in terms of the EIA provisions contained in the Act, which set out the listed activities requiring EIA and the process requirements for EIA. In 1999, the National Environmental Management Act 107 of 1998 (NEMA) came into effect. While this Act repealed the Environment Conservation Act for the most part, the EIA regulations of 1997 still remained in force at the time. These then were the regulations that applied to the initial implementation of EIA in the Gautrain Project in 2001.

In 2006 the then Department of Environment Affairs and Tourism (DEAT) promulgated new EIA Regulations under NEMA, which replaced the initial EIA regulations. The new regulations were informed by the concept of Integrated Environmental Management (IEM) as provided for in Chapter 5 of NEMA and included a

longer and more complex list of activities, which would trigger the requirement for an environmental authorisation, as well as more detailed procedural requirements for EIA. In 2010, another set of new EIA regulations again replaced the ones from 2006. The emerging nature of the EIA legislative process affected the Gautrain Project in several ways.

The ECA read with the EIA regulations formulated in 1997, which remained in place until 2006, contained a provision which allowed for the application for an exemption from the scoping process. As a result of being granted such an exemption, the Gautrain EIA did not include a full scoping process. However, the issues identification and reporting process mentioned above, fulfilled a similar function to that of scoping, which was to determine the aspects that needed to be assessed in the detailed EIA process.





The 1997 EIA regulations did not make provision for Strategic Environmental Assessment (SEA), and this management tool has still not been incorporated into law in South Africa. The usefulness of SEA is similar to that of a scoping process, especially for large linear infrastructure development projects. SEA enables an identification of key issues and an assessment of the sustainability of overarching policies, plans, projects and/or programmes, which should then inform the nature of the detailed EIA studies. The EIA process undertaken for the Gautrain Project would have been better focused and more efficient if it was undertaken within the framework of a formal scoping process or a SEA. Opposition from some members of the public to the Project in principle may have been more effectively dealt with under a SEA process, leaving the EIA process to deal with the details of environmental impacts. The benefits of the Gautrain Project might have been better understood at an earlier stage, which could have strengthened public co-operation and participation.

The EIA regulations in terms of which the initial EIA for the Gautrain Project was undertaken suffered from a measure of inflexibility. For instance, as discussed in the next two sections, the EIA process for the Project was undertaken before a Concessionaire was appointed. The EIA applicant should ideally have been the

Concessionaire, as the private partner in the PPP. Instead, Gautrans, as the public partner, was the applicant. As a result, there were disputes about the responsibility for compliance with the authorisations issued as a result of the EIA work and the fact that the EIA authorisation was issued in the name of Gautrans. This problem could have been solved if the ECA, NEMA and the EIA regulations had made provision for a seamless transfer of environmental compliance responsibilities.

Implementing the heritage aspect of the EIA was complicated by the lack of clear regulations and policy guidelines in South Africa under the 1999 National Heritage Resources Act. It was not easy for the heritage specialists to clearly define the ambit of the heritage impact assessment undertaken for the Project, particularly in terms of interpreting and integrating heritage issues that overlapped with other specialist areas, such as visual, noise and vibration factors.

Timing of initial Gautrain EIA

The EIA process for the Gautrain Project was set in motion in 2001, long before the appointment of a preferred bidder in mid-2005, and at a stage when the Project was still in its early planning phase. When the time came for the Concessionaire to be appointed and for the development to begin, not all of the assessments done during the planning phase were applicable, due to changes in design of certain sections of the alignment. As a result, amendment applications had to be submitted to cover changes to many sections of the alignment. This was done in a phased manner for specific sections of the alignment.

Why was the EIA process introduced at such an early stage of the Project? The government was concerned that it would not be able to attract suitable bidders, especially international bidders with experience in rapid rail development, unless the EIA had been completed and environmental authorisation had been obtained. This decision had several far-reaching consequences.

Difficulties with the transfer of environmental compliance responsibility to the Concessionaire

Since the first phase of the EIA process was undertaken before the appointment of the Concessionaire, transferring the responsibility for environmental compliance with the authorisations became a contested issue.

In terms of the EIA regulations of 1997, an EIA process resulted in a Record of Decision (RoD). The RoD is an authorisation to proceed with the Project, based on the EIA undertaken and the specified conditions. The final Project RoD was issued by the Gauteng Department of Agriculture, Conservation and Environment (GDACE) to the Gauteng Department of Public Transport, Roads and Works (GDPTRW/Gautrans) as the applicant in April 2004, after various appeals had been considered. The Project RoD stipulated that the applicant should assume responsibility for compliance with the conditions of the RoD.

This situation persisted, after the appointment of the Concessionaire in 2005, when substantial changes were required to the route alignment. The changes necessitated amendments to



the 2004 Project RoD, which needed to be applied for in the name of Gautrans since it was the holder of the RoD. The amended route alignments were once again authorised in the name of Gautrans and not in the name of the Concessionaire.

Responsibility for compliance with the conditions of the amended RoDs subsequently became a contested issue between the applicant as the holder of the RoD authorisation and the Concessionaire as the party who is contractually responsible for environmental compliance on site.

The situation resulted in disputes and litigation between the public and private partners over the issue of accepting responsibility for compliance with the conditions of the RoDs.

The Concession Agreement

The uncertainty surrounding the transfer of environmental compliance responsibility to the Concessionaire was made worse by insufficient clarity regarding this issue in the Concession Agreement (CA). The roles and responsibilities around environmental compliance are not sufficiently clearly expressed in the CA. This compounded the conflicts between the government and the Concessionaire and led to a dispute resolution process in the form of an arbitration.

Frequent changes in the Gautrain route alignment and designs

The Project RoD issued in April 2004 was based on the envisaged Gautrain route alignment at the time. The route alignment was amended more than 13 times between 2004 and 2006, amounting to a realignment of almost the entire 80 km route. Certain of these amendments were major amendments, such as the Centurion alignment where the ground level alignment was moved onto a viaduct structure, and others entailed only minor amendments, such as slight changes in the underground tunnel alignment.

Comprehensive public participation process

All the individuals, companies and organisations that were affected by the impact of the Gautrain Project had to be consulted in order to assess the extent of the impact on them and to gain their comments and input on the proposed changes and impacts necessitated by the Project.

Public participation, also referred to as stakeholder involvement, is a legal EIA requirement.

The objectives of the public participation process are to:

- facilitate a focused public involvement and consultation process, aimed at enabling I&APs to provide input into the EIA process;
- investigate the concerns and route alignment alternatives raised by I&APs; and
- develop mitigation measures, based on the input from I&APs.

Impacts needed to be studied and assessed on biophysical and socio-economic aspects. One of the major impacts affecting the public was the need to acquire land for the Gautrain rail reserve. Over a thousand properties were affected, of which around 400 were occupied residential and commercial properties. The Land Acquisitions case study sets out the process of acquiring the land. In addition to the direct impact on private property, affected parties in adjacent properties voiced concerns over potential issues such as noise, vibration, property values and visual aspects.

The EIA consultation process, launched in January 2001, amounted to the biggest public participation process undertaken in South Africa and included numerous focus group meetings (in Muckleneuk alone 20 focus group meetings were held), public forums and consultations with private and public owners.



Potential I&APs were successfully identified by means of a Background Information Document (BID) that was compiled and distributed. Apart from information regarding the EIA process and the proposed Project, the BID contained a registration sheet which enabled I&APs to register their interest in the project. Throughout the EIA process, potential I&APs with an interest in the Project continued to be identified. Residents organisations, environmental interest groups and relevant authorities received special attention.

The consultation process enjoyed widespread media coverage. Advertisements and notifications of public meetings were placed in public places and in the national and regional press. In addition to formal advertising, press releases were issued to national, regional and local newspapers, journals and magazines, TV stations and community radio stations. A website (www.gautraineia.co.za) for the Gautrain EIA process was developed to provide and receive information on the EIA process. Interested and affected parties (I&APs) could register their interest in the project and the EIA on the website.

Gautrans appointed public participation specialists to assist with the public consultation process. The inputs from the public were taken seriously and implemented as far as possible. This reduced the potential for conflict.

For instance, in Sandton, the residents and businesses requested an underground alignment instead of the planned ground-level alignment. The underground alignment was then assessed in the environmental impact assessment phase and approved in the Project RoD. The Sandton stakeholders were for the most part satisfied, thanks to the successful consultation process. As a result the Sandton alignment did not lead to any litigation.

Over half of the reference alignments put forward to the public in the Issues Identification phase were amended following the input from affected communities. In addition to the Sandton alignment, changes to the alignments were also agreed to in Braamfontein, Midrand and Modderfontein. Lengthy discussions between public participants and design engineers and project planners contributed to the effectiveness of most of the focus group discussions.

Not all the inputs from the public could be implemented. This led to disputes and litigation as outlined in the section below.

The intensive public participation process contributed significantly to the success of the Gautrain Project, even though the EIA process had to be redone for the most part after 2005, given the route alignment and design changes that were introduced by the Concessionaire.

Disputes and litigation

Two types of disputes arose out of the EIA process: Disputes between Gautrans and the public participants, and disputes between the public and private partners in the PPP.

Disputes between Gautrans and the public participants resulted from differences over the route alignments of the Gautrain Project, following the comprehensive public participation process. Most of the differences were solved in that Gautrans accepted and implemented the proposals of the residents

associations for alternative route alignments. Nevertheless, some of the differences resulted in disputes.

The Muckleneuk/Lukasrand Property Owners and Residents Association (MLPORA) objected to the ground-level alignment, proposing an underground alignment instead. Their proposal was supported by the heritage impact assessment, which found that a ground-level alignment would have a detrimental effect on certain heritage houses. It was clear that an underground alternative would result in the least environmental impact for this section of the line. Despite these findings, the Gautrain proponents decided not to accept the Muckleneuk proposal since an underground alignment would have been prohibitively expensive in this area. This resulted in disputes and litigation between Muckleneuk and Gautrans. The High Court found in favour of GDACE and Gautrans in the Muckleneuk Review Application where Muckleneuk was unsuccessful in its application to set aside the GDACE's RoD approving the alignment in Muckleneuk.

In addition to the Muckleneuk example, legal proceedings were also instituted by stakeholders in Centurion, Dunkeld and Modderfontein. The litigation was settled out of court with all three of these groups.



As mentioned above, disputes between the public and private partners in the PPP ensued regarding the responsibility for compliance with the conditions of the RoDs on the part of the Concessionaire. Most of these disputes were resolved using an effective dispute management system, which is set out in the Dispute Management case study. Unresolved disputes resulted in litigation. The delay and disruption claim filed by Bombela against the Gauteng Provincial Government is a case in point.

Protracted EIA process and cost implications

As discussed earlier, the initial EIA process was implemented during the planning phase of the Gautrain Project from 2001 to 2003. As a result of the many route re-alignments and changes in design proposed by the Concessionaire, the EIA process had to be redone during the development phase of the Project and was only completed in 2009.

The protracted EIA process, spanning nearly eight years, had two major implications. The costs associated with the EIA process were much higher than originally anticipated. Certain EIA specialists contributing to the process, mostly those appointed by the Concessionaire, did not remain involved throughout the lengthy process, which gave rise to a lack of continuity in the contributions made by certain role players.



4. WHAT WE LEARNT

What worked well?

Despite the many challenges, a thorough and legally compliant environmental impact assessment study was conducted for the Gautrain Project.

The complexity of the EIA process was successfully handled by appointing a team of environmental consultants, who divided the process into manageable steps and prioritised the EIA actions required.

Although the EIA legislative process was relatively new when the EIA for the Gautrain process was implemented in 2001, the legal team of environmental consultants ensured that the EIA process complied with the EIA legislation.

The timing of the initial EIA process posed a major challenge as highlighted in the case study. However, the decision to complete the EIA process before the appointment of the Concessionaire may very well have assisted in attracting suitable bidders.

The frequent changes in the Gautrain route alignment and designs posed a challenge, but the approach of conducting localised assessments of the alignments in specific areas as part of the amendment application process worked well.

The comprehensive public participation process contributed to the success of the EIA process. In the first instance, the public participation process functioned as a means of informing and gathering suggestions from the public, the authorities and other I&APs regarding the Gautrain Rapid Rail Link Project. Secondly, the public participation process resulted in improvements in the design of the Gautrain Project as a result of the inputs received from I&APs. Good relationship management and hands-on involvement of senior Gautrans management personnel, such as Mr Jack

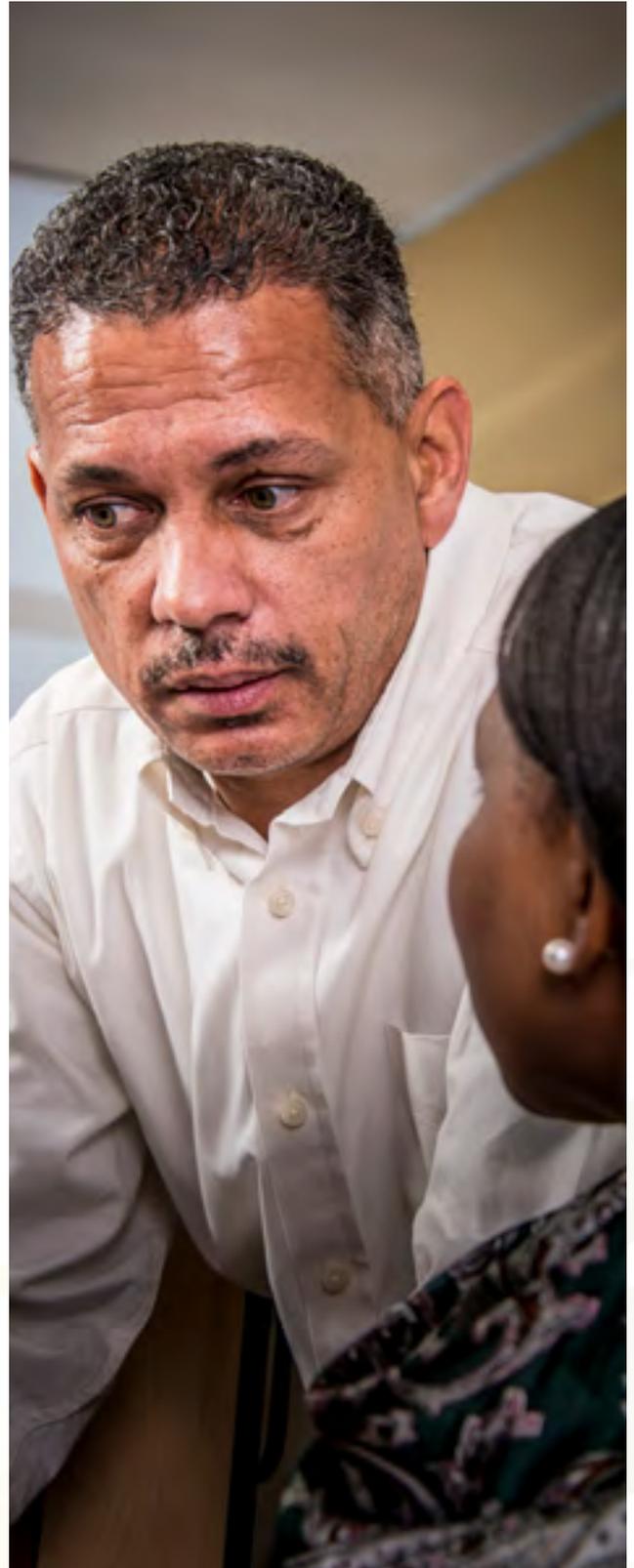
van der Merwe and Mr Olaus van Zyl, proved to be key to the success of the EIA public participation process.

The disputes that arose during the course of the EIA process were well managed by means of a dispute resolution mechanism and committed relationship management. Many of the disputes did not lead to litigation and in some instances where litigation was initiated, the cases were settled out of court.

What did not work well?

If the EIA regulations had allowed for an SEA process, the EIA assessment process required for the Gautrain Project would have been more detailed and better focused. The lack of clear regulations and policy guidelines in South Africa under the 1999 National Heritage Resources Act complicated the implementation of the heritage assessment of the EIA. The ECA and EIA regulations did not at that time provide for a seamless transfer of environmental compliance responsibility from the initial applicant to the Concessionaire. This contributed to disputes between the public and private partners in the PPP.

The timing of the initial EIA process posed a major challenge. The decision by the government to implement the EIA process before the appointment of the Concessionaire meant that most of the EIA process had to be redone once the route alignments and designs had been completed by the Concessionaire. As a result, the responsibility for compliance with the conditions of the various RoDs became a contentious issue with the Concessionaire, and the EIA became a long-drawn out and costly process. This situation was compounded by a lack of clarity in the CA on the roles and responsibilities of the public and private partners on environmental compliance issues.



5. MOVING FORWARD

The lessons learnt will make the road ahead easier for Phase 2 of the Gautrain Project and for other infrastructure development projects undertaken as a PPP.

It is recommended that a detailed EIA process should only be undertaken once the design of the project has been finalised. EIA should furthermore be implemented by the private partner in a PPP, as the private partner should ultimately carry the risk and responsibility for the construction of the infrastructure and compliance with environmental obligations. Instead of conducting a detailed EIA at the planning phase of a project, a Scoping or SEA process should first be undertaken by the public partner in the PPP. Both Scoping and SEA are broad framework studies, which have

the function of identifying issues for assessment, determining possible route corridors and assisting to focus the detailed EIA process, which should be conducted by the Concessionaire.

The South African EIA legislative framework and process are currently being considered for amendment by the Department of Environmental Affairs (DEA) to allow for this approach and to incorporate SEA into SA law, especially for Strategic Infrastructure Projects (SIPs). This will assist project partners to achieve value for money, by cutting costs and saving time. Most importantly, it will enable project partners to ensure compliance and achieve the aim of sustainable development, which includes the stimulation of economic growth through strategic infrastructure development, while safeguarding the environment from harmful impacts.

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