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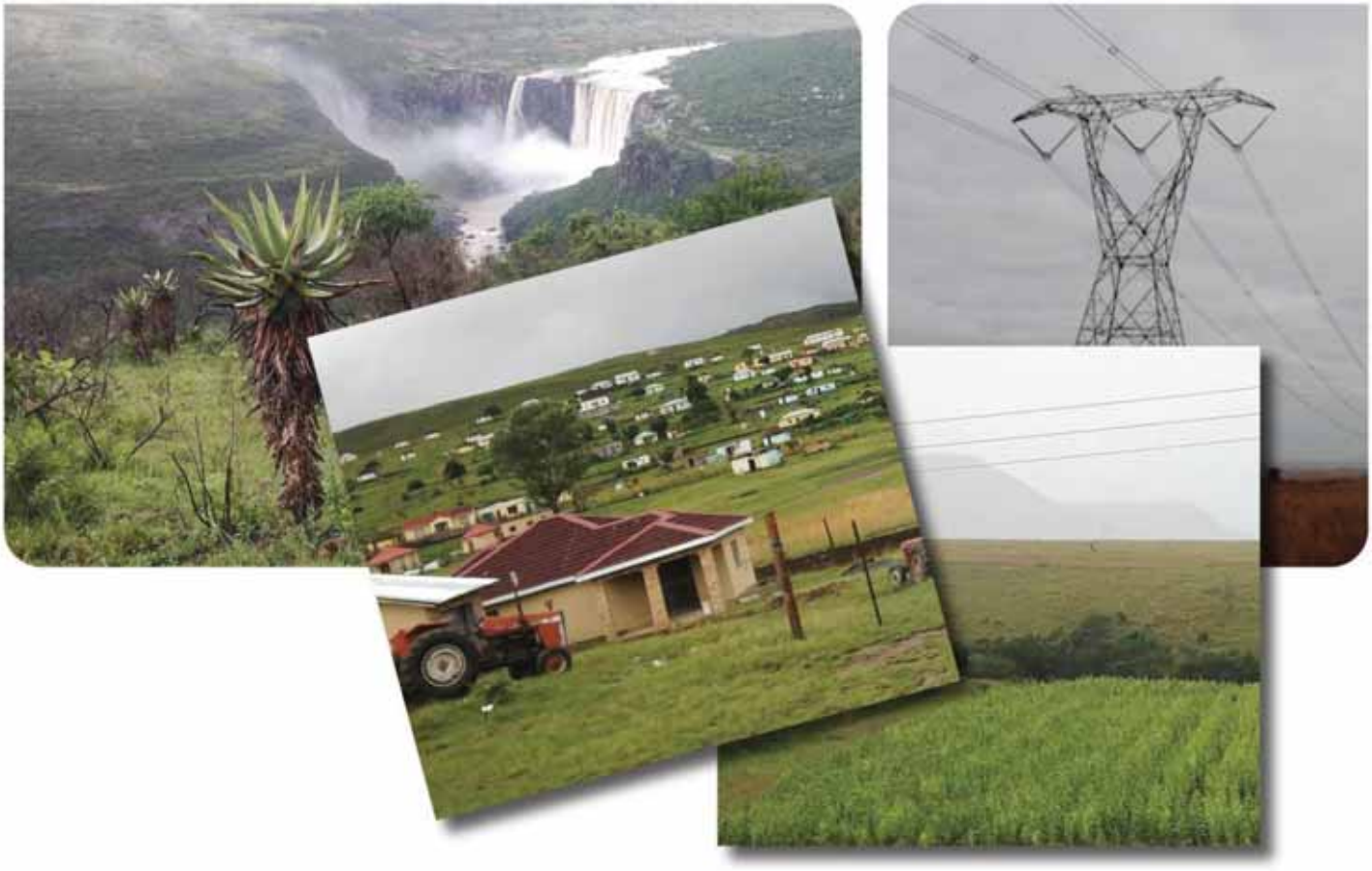
ENVIRONMENTAL IMPACT ASSESSMENT FOR THE MZIMVUBU WATER PROJECT

DEA REF. No 14/12/16/3/3/2/677 (Dam Construction)
14/12/16/3/3/2/678 (Electricity Generation)
14/12/16/3/3/1/1169 (Roads)



SCOPING REPORT

FINAL
June 2014

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE MZIMVUBU WATER PROJECT

Report Title:	***Scoping Report***
Authors:	*T Calmeyer and L Muruven*
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ENVIRONMENTAL IMPACT ASSESSMENT FOR THE MZIMVUBU WATER PROJECT

LIST OF REPORTS

REPORT TITLE	DWA REPORT NUMBER
Inception Report	P WMA 12/T30/00/5314/1
Scoping Report	P WMA 12/T30/00/5314/2
Environmental Impact Assessment Report	P WMA 12/T30/00/5314/3
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SCOPING REPORT

Executive summary

1. Introduction

The Mzimvubu Water Project is an integrated multi-purpose (domestic water supply, agriculture, power generation, transport, tourism, conservation and industry) project and provides a socio-economic development opportunity for the region. The purpose of this Environmental Impact Assessment (EIA) is to assess the components of the project that are listed activities by the National Environmental Management Act (NEMA) for which the Department of Water Affairs (DWA) has the mandate and intention to implement. The EIA process will provide the information that the environmental authorities require to decide whether the project should be authorised or not, and if so then under what conditions.

This Scoping report describes the proposed project, the receiving environment, and identifies key issues and alternatives to be investigated in the impact assessment phase. It also describes the way forward in the Plan of Study for the EIA phase.

2. Additional authorisations required

This EIA includes the assessments required to apply for the following authorisations that the project requires:

- *Water Use Licence*

The construction of the dams and associated infrastructure involves a number of water uses listed in terms of section 21 of the National Water Act, 1998 (No. 36 of 1998) (NWA).

- *Borrow areas and quarries*

Construction materials such as sand, gravel and rock material will be required for the construction of the dams and roads. Existing licensed quarries and borrow pits in the area may not be adequate or suitable to provide all the required construction materials and it is estimated two new rock quarries and eight sand borrow pits will be necessary for Ntabelanga and Laleni dam sites.

In terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), as amended, and the Mineral and Petroleum Resources Development Regulations in GNR 527 of 23 April 2004, the DWA has been exempted by virtue of GNR 762 of 25 June 2004

from the application procedures and the approval of rights and permits in terms of sections 16, 20, 22, and 27 of the MPRDA. However, in accordance with section 106(2) of the MPRDA, the DWA is required to compile an Environmental Management Programme (EMP) for approval in terms of the provisions of section 39 (4) of the Act.

The impact of the new borrow areas and quarries will be investigated in the EIA, and EMPs will be compiled for approval by the DMR as required.

- *Heritage permits*

The proposed project involves a number of activities listed in terms of section 38 of the National Heritage Resources Act (Act No. 25 of 1999) (NHRA), which require authorisation from the relevant heritage authorities. A Heritage Impact Assessment (HIA) will be conducted as part of the EIA process. The HIA will be submitted to the Eastern Cape Provincial Heritage Resources Authority and the South African Heritage Resources Agency (SAHRA) for decision-making regarding heritage resources.

- *Waste Management Licence*

The Management of Waste is regulated by the National Environmental Management: Waste Act (Act No. 59 of 2008) (NEMWA) and associated Regulations.

A Waste Management Licence may be required for the settling ponds that will be used to capture runoff from the batching and crusher plants (Activity (1) of Category A: Storage of general waste in lagoons).

The construction of the tunnel at the Laleni Dam for the generation of hydropower will result in spoil (inert general waste) that needs to be disposed of and may require a Waste Management Licence if the prescribed thresholds are exceeded.

- *Licences for the removal of protected trees*

Trees may have to be disturbed, damaged or destroyed/removed to make way for the new infrastructure. If those trees are protected in terms of the National Forests Act (Act No. 84 of 1998), a licence must be obtained from the Department of Agriculture, Forestry and Fisheries (DAFF).

3. Project description

The project footprint spreads over three District Municipalities (DMs) namely the Joe Gqabi DM in the north west, the OR Tambo DM in the south west and the Alfred Nzo DM in the east and north east.

The proposed Ntabelanga Dam site is located approximately 25 km east of the town of Maclear and north of the R396 Road. The proposed Laleni Dam site is situated approximately 17 km north east of the small town Tsolo. Both are situated on the Tsitsa River

Water Resource Infrastructure includes:

- *A dam at the Ntabelanga site with a storage capacity of 490 million m^3;*
- *A dam at the Laleni site with a storage capacity of approximately 150 million m^3;*
- *A tunnel and power house at Laleni dam site for generating hydropower;*
- *Five flow gauging stations;*
- *Wastewater treatment works at the dam sites;*
- *Accommodation for operations staff at the dam sites; and*
- *Two information centres at the dam sites.*
- *Five new flow measuring weirs will be required in order to measure the flow that is entering and released from the dams. These flow gauging points will be important for monitoring the implementation of the Reserve and for operation of the dams.*

The Ntabelanga Dam will supply potable water to 539 000 people, rising to 730 000 people by year 2050. The domestic water supply infrastructure will include:

- *A river intake structure and associated works;*
- *Water treatment works;*
- *Potable bulk water distribution infrastructure for domestic and industrial water requirements (primary and secondary distribution lines);*
- *Bulk treated water storage reservoirs strategically located; and*
- *Pumping stations.*

The Ntabelanga Dam will also provide water to irrigate approximately 2 900 ha. This project includes bulk water conveyance infrastructure for raw water supply to edge of field.

About 2 450 ha of the high potential land suitable for irrigated agriculture are in the Tsolo area and the rest near the proposed Ntabelanga Dam and along the river, close to the villages of Machibini, Nxotwe, Culunca, Ntshongweni, Caba, Kwatsha and Luxeni.

There will be a small hydropower plant at Ntabelanga Dam to generate between 0.75 MW and 5 MW (average 2.1 MW). This will comprise a raw water pipeline from the dam to a building containing the hydropower turbines and associated equipment, and a discharge pipeline back to the river just below the dam wall. The impact is expected to be similar to that of a pumping station.

The hydropower plant at the proposed Laleni Dam and tunnel (used conjunctively with the Ntabelanga Dam) will generate an average output of 35 MW when operated as a base load power station and up to 180 MW when operated as a peaking power station. The power plant will require a tunnel of approximately 7 km linking the dam to the power plant downstream of the dam and below the gorge.

The high voltage power line to link the Laleni power station to the existing Eskom grid will be approximately 18.5 km and the power line linking Ntabelanga dam to the Eskom grid will be approximately 13 km. Power lines will be constructed to supply power for construction at the two dam sites and for operating five pumping and booster stations along the bulk distribution infrastructure.

The area to be inundated by the dams will submerge some roads. Approximately 80 km of local roads will therefore be re-aligned. Additional local roads will also be upgraded to support social and economic development in the area. The road design will be very similar to the existing roads as well as be constructed using similar materials.

The project is expected to cost R 12.45 billion and an annual income of R 5.9 billion is expected to be generated by or as a result of the project during construction and R 1.6 billion per annum during operation. It will create 3 880 new skilled employment opportunities and 2 930 un-skilled employment opportunities during construction.

4. Alternatives

This project involves spending money on the development of water related infrastructure in order to stimulate social and economic development in the study area by providing water for domestic, industrial and agricultural use as well as by creating jobs directly associated with the construction and operation of the project. Additional knock on and downstream activities also generate jobs and income to the area. An activity alternative would be to consider different uses for the same financial investment that could improve the quality of life and generate an equivalent number of jobs and income to the area. As the applicant for this project is the Department of Water Affairs who has a mandate to develop water resources infrastructure and not to implement development projects of a different nature, it is not feasible to investigate such alternatives. The EIA will however investigate the economic development plans of the Eastern Cape Provincial Government and review the proposed project against this framework.

Previous investigations done in the feasibility phase of the project assessed alternative dam sites for the project. These assessments have been reviewed and are considered adequate for the EIA requirements. Further studies on alternative dam sites will therefore not be undertaken in the impact assessment phase of this study. The following project level alternatives will be assessed:

The alternatives that will be considered in the EIA are:

- *Three hydro power tunnel positions and associated power lines;*
- *Peak versus Base load power generation;*
- *Three different dam sizes for the Laleni Dam; and*
- *The no project option.*

For the pipeline routes and new roads the specialists will identify any sensitive areas and deviations to avoid these will be proposed in consultation with the technical team.

5. Public Participation in the Scoping Phase

A pre-application meeting was held at the Department of Environmental Affairs (DEA) offices in Pretoria on 25 March 2014. The purpose of the meeting was to introduce the project to DEA, and agree on the proposed process and programme to be followed as well as associated roles and responsibilities.

As the project is a Strategic Integrated Project (SIP3) and a priority for the Department of Water Affairs, delays in the EIA process should be avoided as far as possible. The programme for the EIA study was presented at the meeting and it was resolved that an Authorities Forum be established for the project, in order to obtain inputs and comments on the draft reports from the various organs of State involved in a timeous manner.

A letter notifying Interested and Affected Parties (I&APs) of this application for environmental authorisation, as well as the applications for the Water Use Licence, heritage permits, and borrow areas approval was sent to all registered stakeholders together with a Background Information Document (BID) (Appendix B). Both the English and isiXhosa versions were distributed by the local facilitators as well as placed on the DWA website. The BID covers all the applications that form part of the project. A newspaper advertisement was published in two local and one provincial newspaper announcing the EIA process for this project and providing contact details for I&APs to register as a stakeholder. On-site notices were also posted providing a brief background on the project and contact details in order for I&APs to request further information and/or to register as a stakeholder.

Notice of the applications was advertised in the Herald on 29 April 2014, in the Daily Dispatch on 05 June 2014 and in the Mthatha Fever on 12 June 2014. The draft scoping report was made available to I&APs for a 30-day public comment period, from 9 May 2014 to 9 June 2014. The draft report was available for download from the DWA website (http://www.dwa.gov.za/mzimvubu) and hard copies were also available for perusal.

Copies of the draft Scoping Report were available at the following venues:

Location	***Venue***
East London	*Mrs Glenn Hartwig* *East Landon Central Library,* *Reference Library First Floor* *Gladstone Street* *East London* *5200* *(043) 722-4991*
Mthatha	*Mrs Vuyiswa Lusu* *Walter Sisulu University* *Nelson Mandela Drive* *Unitra, Umtatha* *5117,* *047-5022382 /2319*
Tsolo	*Mhlontlo Local Municipality* *128 Mthuthuzeli Mpehle Avenue* *Tsolo* *5170*

Ntabelanga	*Siqhungqwini Junior Secondary School* *Siqhungqwini* *A copy was also given to the local Chief (Chief Mabantla).* *Tel: 079 397 7131*
Laleni	*Mhlontlo Local Municipality* *Technical department* *Office 26* *96 Church Street* *Qumbu* *5180*

In addition to the public comment period, three public meetings were held during the week of 12 May 2014 near the proposed Ntabelanga dam site, in Tsolo and in Laleni. The purpose of these meetings was to engage with the public, provide information and allow stakeholders to raise any comments or objections.

In addition, an Authorities Forum meeting was held on 28 May 2014 to present the project and the findings of the Draft Scoping Report to the various organs of State involved, and obtain their comments on the draft report.

Feedback received from stakeholders is recorded in the Issues and Responses Report (IRR) (Appendix B) and has been incorporated in the Final Scoping Report where applicable.

The Final Scoping Report will be available for a 21-day public comment period from the venues listed above.

6. Description of the affected environment

The study area falls within the South Eastern Uplands Aquatic Ecoregion and the Mzimvubu to Kieskamma Water Management Area (WMA). The Mzimvubu River is one of South Africa's largest rivers (accounting for 5.5% of total river flow in the country). It has four major tributaries, namely the Mzintlava, Kinira, Tina and Tsitsa Rivers. Rivers in this catchment possess water surpluses.

The proposed Ntabelanga and Laleni Dams are both situated on the Tsitsa River, a perennial river classified as a Category C (moderately modified).

The pipelines in the northern part of the project area cross the Tina River which is also classified as being in Category C condition (moderately modified). The Tina River is regarded as an important fish sanctuary, translocation and relocation zone and is classified as being a fish support area according to the National Freshwater Ecosystem Priority Areas Database (2011).

The mountain/highland grasslands in the area maintain high water quality and yield, which is critical for the neighbouring rural communities and also for downstream consumption.

According to the National List of Threatened Terrestrial Ecosystems (2011), sections of the proposed infrastructure fall into a vulnerable ecosystem. Vulnerable ecosystems, have a high risk of undergoing significant degradation of ecological structure, function or composition as a result of human intervention. Large areas within the project area have been identified as Critical Biodiversity. These areas are of conservation importance due to the presence of Red Data species, endemic species and potential habitat for these species to occur.

Heritage literature and database reviews indicate that the following heritage resource types are likely to be present in the study area:

- *Places associated with oral traditions or living heritage*
- *Landscapes and natural features*
- *Traditional burial places, and*
- *Archaeological sites.*

The project impacts the three district municipalities of Joe Gqabi, O. R. Tambo and Alfred Nzo. Of these districts Joe Gqabi covers the greatest land area and has the lowest population density across the region at 14 people/km^2 while O. R. Tambo has the largest population and the highest population density at 110 people/km^2. With regard to population group black African people are the dominant group across all districts at over 90%. Xhosa is the dominant language spoken in the area ranging between 70.5% and 94.2%.

Joe Gqabi had the highest HIV prevalence rate amongst antenatal women in 2011 with a rate of 29.3%. This is followed by the Alfred Nzo District Municipality at 28.9% and O. R. Tambo at 28.4%.

The project impacts the following four local municipalities: Elundini, Mhlontlo, Umzimvubu and Ntabankulu. Elundini covers the greatest geographical area at 5,065 km^2 and Ntabankulu the smallest area at 1,385 km^2. With a population of 123 976 people Ntabankulu has the highest population density at 90 people/km^2. Umzimvubu has the highest population with 191 620 people living within the municipal area. At over 98%, Black African people are the biggest population group across all municipalities and Xhosa is the dominant language spoken.

The sex ratios across all areas indicates a higher number of females compared to males with Ntabankulu having the highest proportion of females to males and Elundini the lowest. Apart from the Joe Gqabi district, where 49.3% of the households are female headed, all other areas have a higher percentage of female than male headed households with the greatest percentage of female headed households at 60.4% being found in Ntabankulu. Most formal dwellings are found in the Joe Gqabi district with the lowest percentage of formal dwellings at 24.3% being found in Ntabankulu. At 64.4% the local municipality of Ntabankulu has the highest percentage of housing being owned or being paid off with the lowest percentage, 53.9%, being found in Mhlontlo.

The study area is characterised by a high dependency ratio which indicates the burden of supporting children under 15 years and people over 65 years placed on the working population

aged 15–64 years. Although there has been some improvement across all areas between 2001 and 2011 the burden still remains heavy with it being greatest in Ntabankulu.

Between 2001 and 2011 Mhlontlo, Umzimvubu and Ntabankulu all showed a negative population growth with the O. R. Tambo district having the highest population growth at 0.52%.

In respect of the labour market, at 50.6% the highest level of official unemployment is found in Ntabankulu with the lowest level being found in in the Joe Gqabi district at 35.4%. Amongst the youth between 15 and 34 years of age, Ntabankulu also has the highest rate of unemployment at 60.7% with Joe Gqabi again having the lowest at 43.3%

The situation regarding schooling in the area improved somewhat between 2001 and 2011. Notwithstanding this, however, there is still a need to improve the situation further with areas such as Ntabankulu and the O. R. Tambo district still having over 17% of the population over 20 years of age having no schooling. At a provincial level 10.5% of the population aged over 20 years have no schooling, 19.8% have a matric and 8.7% have a higher education. This places all the district and local municipalities below the provincial level of education with only Umzimvubu, at 8%, having a lower percentage of the population with no education.

The average size of households in the area range between 3.6 in Elundini and 5.1 in Ntabankulu.

In respect of household services, apart from electricity as a source of lighting, were it is surpassed by both the Mhlontlo local and O. R. Tambo district municipalities, on a general basis the Joe Gqabi District Municipality has the highest level of service delivery. Ntabankulu has the lowest level of service delivery across all indicators.

The proportion of households owning household goods across the area is lower than that of the province. On a general basis, households in the Joe Gqabi municipality own a greater proportion of household goods than those across the other municipalities with households in Ntabankulu owning the lowest proportion of household goods.

Although there have been some improvements across the region the area remains one of the poorest parts of the country, characterised by high poverty and out-migration resulting in sex ratio imbalances, a high proportion of female headed households and a low population growth rate. At large the population lacks basic amenities and relies heavily on subsistence farming which is not highly successful.

The study area is rural, characterised by low densities and generally low levels of economic activity. The main land uses are pastoral stock and subsistence crop farming

The proposed project is located on state-owned land which is administered by traditional authorities. The land is therefore currently subject to communal land tenure arrangements. Under

this system the State owns the land, but it is managed and allocated to community members by the Traditional Leaders.

About 37.7% of households in the Eastern Cape engaged in agricultural activities over the period June 2011- June 2012. Of these households 24.8% were involved with poultry production, 20.5% with livestock production, 19% with grains and food crops, 19.9% with fruit and vegetables and only 0.2% with industrial crops (Statistics South Africa, 2012, pp. 2-3). Of the households in the province involved with different crop planting activities, 23.8% were in backyard gardens, 0.2% in communal gardens and 0.1% in school gardens. The percentage of households classified as food access adequate was 72% while 19.4% were food access inadequate and 8.8% food access severely inadequate. Although in this respect there are no statistics specific to the study area, it is unlikely that the situation in the study area will be significantly different.

An aerial inspection of the immediate area shows that much less crop production is currently practised than in the past and it is estimated that about 20% of the previously contoured lands are currently still cultivated. Farmer support structures would be needed to revive crop production in the region.

Commercial irrigation farming is not the traditional farming method in the area and extensive public consultation will be required to obtain buy in from traditional leaders and communities and facilitate the transformation of this sector.

7. Key issues

The main objective of this EIA is to provide the competent authority with the information that they require to make a decision on whether this project should be authorised or not, and if so then on what conditions. Some of the impacts during the construction and operation of the project will require environmental management measures and monitoring, but will not be determining factors on whether the project is authorised or not. These impacts are addressed in the Environmental Management Programme, but do not require specialist studies to inform the recommendations of the Environmental Impact Report. The purpose of identifying key issues is to focus the specialist studies and impact assessment on the issues and impacts that are critical to the authorisation decision and conditions.

7.1 Key issues to be addressed in the EIA

The following key issues will be addressed in the EIA:

- *The impacts on terrestrial ecology will be assessed in the Impact Assessment Phase by undertaking a survey of the existing plants and animals and assessing how the proposed project is likely to impact on them.*
- *The impacts on rivers and wetlands will be assessed in the Impact Assessment Phase by undertaking a wetland delineation and survey of the existing aquatic ecology and assessing how the proposed project is likely to impact on them. The potential impact on water quality will also be assessed.*

- *A Reserve determination downstream of the Laleni site will be undertaken for assessment and management purposes. The purpose of the Reserve determination is to ensure that the proposed infrastructure development does not impact on the system's ability to provide the ecological and basic human rights water requirements.*
- *The social specialist study will predict the positive and negative social impacts on the communities in the study area. This will include the potential impact of HIV/Aids. The loss of structures and livelihood supporting resources will be quantified in the Relocation Action Plan register.*
- *The economic specialist study will determine whether the project will enhance net societal welfare. At a broad level, investigating impacts on overall welfare requires considering the efficiency, equity and sustainability of the project.*
- *The most significant heritage resources potentially affected by the proposed project are likely to be places associated with oral traditions and living heritage, landscapes and natural features and archaeological sites. A palaeontological study will be necessary for this project as the South African Heritage Resources Inventory System (SAHRIS): National Fossil Sensitivity Map indicates a very high estimated palaeontological sensitivity.*
- *The proposed project will change the landscape and affect the sense of place. These will be addressed in the visual impact assessment.*

7.2 Issues that will not be addressed in the EIA

- *The impact of climate change on the area, and therefore the project, is a process that is taking place at a scale that is much longer in terms of time and larger in terms of geographic extent than this project. Cognisance is taken of the increased likelihood and frequency of impacts as described above. This will be addressed in the relevant specialist studies by applying the precautionary principle. The contribution of this project to climate change in the region will be addressed in the EMP. No climate change specialist study will therefore be undertaken.*
- *Currently the land in the study area is for the most part under communal tenure and used for cultivation (locally) and livestock grazing (widespread) on State owned land. Under this system the State owns the land, but it is managed and allocated to community members by the Traditional Leaders. Although the system, without title to the land, is currently relatively stable this practice needs to be reconsidered under intensive farming conditions where the incentive for the farmer becomes more important. The infrastructure components of the project that are the subject of the authorisation that this EIA supports extend to the supply of water to the field edge. Although the EIA will consider the impacts of a change in land tenure arrangements (especially from a social perspective), the details of how land tenure arrangements will be changed, as well as new commercial farmer establishment and support, are not included in the scope of this EIA.*
- *There may be some scope for the expansion of commercial forestry in the sub-catchment above the dam site. However, this will reduce the amount of water available and could impact on the viability of the hydroelectricity component. Any forestry expansion will thus have to be planned from a water use as well as a land use perspective. This is the subject of a separate planning process and not included in the EIA.*

- *Possible estate and recreational related infrastructure associated with the proposed dams has not been identified at this stage. Any authorisations required for such infrastructure will be applied for separately.*
- *Tertiary distribution lines (i.e. smaller pipelines supplying settlements along the secondary lines and from District Reservoirs), and*
- *Activities undertaken as part of DEA's Catchment Rehabilitation and Management Programme.*

8. Plan of study for environmental impact assessment

The EIA will build on the Scoping report and will focus on assessing the key impacts, determining their significance, and recommending appropriate measures to mitigate negative impacts and enhance benefits (Where required, this will involve specialist input. The contents of the EIR will be as prescribed in the EIA Regulations, 2010 (Regulation 31(2)).

Some of the key issues identified during the Scoping Phase will require further investigation by appropriately qualified and experienced specialists. The specialist studies to be undertaken during the EIA phase are listed below. These studies will be synthesised and integrated into the overall impact assessment (full reports will be included as appendices to the EIR), and recommendations for mitigation will be included in the EMP. The contents of all specialist reports will include information as prescribed in Regulation 32(3) of the EIA Regulations, 2010.

8.1 Social Impact Assessment

The objective of the Social Impact Assessment is to identify the social baseline conditions in which the proposed project will take place. Against this background, and based on the project description, the purpose is also to identify, assess and mitigate the likely social impacts that may occur as a result of the proposed project. Both a quantitative and qualitative methodological approach will be applied throughout the study, in a research technique referred to as triangulation.

8.2 Terrestrial Ecological Assessment

The assessment will include desktop studies and site specific field work. Input on faunal and floral components for the scoping report, which is to include the findings of the data from the desktop study as well as the initial site visit, including comments with respect to spatial integrity and importance, species richness, biodiversity value of the areas and proposed management actions with respect to sensitive areas and/or species. The field assessment will be initiated by first identifying terrain units and ecological units to identify areas of varying structure and degree of disturbance. On-site assessments of each terrain unit will take place to determine the Present Ecological State; Species lists of identified species within the study area will be compiled; A site sensitivity plan will be developed; and The presence of medicinal and Red Data List (RDL) species will be assessed.

8.3 Aquatic ecology and wetland assessment

The wetland delineation will be initiated as a desktop study, where all the relevant information from research sources, as well as existing documentation will be reviewed in order to develop preliminary wetland delineations. Allowance has also been made for detailed wetland delineations

of specific areas of concern or interest, including consideration of areas potentially affected by flooding and areas where rehabilitation will take place.

8.4 Visual impact assessment

This specialist study will cover a description of the visual landscape of the area with specific focus on topographical features that offer impact mitigation opportunities and constraints; Description of key areas from which the proposed project will be seen (the viewshed) as well as the viewing distance; An assessment of the visual absorption capacity of the landscape (i.e. the capacity of the landscape to visually absorb structures and forms placed upon it). Particular attention must be paid to conservation, tourism, eco-tourism and associated activities, and potential impacts on sense of place; The identification of potential impacts (positive and negative, including cumulative impacts if relevant) of the proposal on the visual landscape during construction and operation; Recommendations on alternatives identified, to avoid negative impacts; The identification of mitigation measures for enhancing benefits and avoiding, reducing or mitigating negative impacts and risks (to be implemented during design, construction and operation of the proposed project); and The formulation of a clear and simple system to monitor impacts, and their management, based on key indicators.

8.5 Heritage Impact Assessment

The HIA will be undertaken in compliance with Section 38 of the National Heritage Resources Act No. 25 of 1999 and include all heritage resources, including palaeontological sites, and recommendations for their management.

8.6 Economic Impact Assessment

A Macro-economic Impact Analysis (MEIA) as well as an Economic Cost-Benefit Analysis will be performed. The focus of the economic impact analysis is macro-economic, stressing linkages between the project and the remainder of the relevant economy. Environmental externalities may affect other economic sectors and are included in the tools of the macro-economic impact assessment. The local, regional and national socio-economic impact will also be assessed. The basic function of the economic specialist input to the EIA process is to assist in determining whether the project will enhance net societal welfare. This necessitates the analysis of impacts on different sectors or groups that make up society. At a broad level, investigating impacts on overall welfare requires considering the efficiency, equity and sustainability of the project. It is important that all three of these aspects are considered in order to provide adequate information to the client:

8.7 Water quality

A water quality analysis will be undertaken and will inform both the EIA and WULA. The analysis will focus on fitness for use. The water quality study will address, among other things, the potential negative impact of discharge from the WWTWs. Hydrological aspects have already been covered in previous studies and relevant information on the hydrology will be extracted as required.

8.8 Impact assessment methodology

The key issues identified during the Scoping Phase inform the terms of reference of the specialist studies, as summarised above. Each issue consists of components that on their own or in combination with each other give rise to potential impacts, either positive or negative, from the project onto the environment or from the environment onto the project. In the EIA the significance of the potential impacts will be considered before and after identified mitigation is implemented, for direct, indirect, and cumulative impacts, in the short and long term.

A description of the nature of the impact, any specific legal requirements and the stage (construction/decommissioning or operation) will be given. Impacts are considered to be the same during construction and decommissioning.

The following criteria will be used to evaluate significance:

- *Nature: This is an appraisal of the type of effect the activity is likely to have on the affected environment. The description includes what is being affected and how. The nature of the impact will be classified as positive or negative, and direct or indirect.*
- *Extent and location: This indicates the spatial area that may be affected.*
- *Duration: This measures the lifetime of the impact.*
- *Intensity/severity: This is the degree to which the project affects or changes the environment, it includes a measure of the reversibility of impacts.*
- *Potential for irreplaceable loss of resources: This is the degree to which the project will cause loss of resources that are irreplaceable.*
- *Probability: This is the likelihood or the chances that the impact will occur.*
- *Confidence: This is the level knowledge or information available, the environmental impact practitioner or a specialist had in his/her judgement.*
- *Consequence: this is calculated as extent + duration + intensity + potential impact on irreplaceable resources.*
- *Significance: The significance will be rated by combining the consequence of the impact and the probability of occurrence (i.e. consequence x probability = significance).*
- *Cumulative Impacts: This refers to the combined, incremental effects of the impact. The possible cumulative impacts will also be considered.*
- *Mitigation: Mitigation for significant issues will be incorporated into the EMP.*

8.9 Environmental Management Programme

Based on the findings of the EIR, a practical and feasible EMP will be compiled. The EMP will outline how negative environmental impacts will be managed and minimized, and how positive impacts will be maximised, during and after construction. The EMP will fulfil the GN 543 requirements and will include mitigation measures required during the planning, construction and operational phases of the project as well as a framework for social and environmental monitoring. Recommendations will be given with regard to the responsible parties for the implementation of the EMP.

8.10 Relocation Action Plan

The Relocation Action Plan (RAP) will be presented as a Chapter in the EMP. The focus of the RAP will be to:

- *Confirm that there are no relocation, compensation or livelihood fatal flaws that could impact on the decision on whether the project should be authorised or not;*
- *Identify any relocation, compensation or livelihood related conditions that should be stipulated in the Environmental Authorisation;*
- *Estimate the magnitude of the task of implementation of the RAP;*
- *Agree on the structure of the final RAP (i.e. what will be included); and*
- *Unblock potential bottle-necks that could delay implementation.*

9. Public participation in the EIA phase

The requirements of the NEMA EIA Regulations (2010) for the Public Participation Process (PPP) will be adhered to. The International Association of Public Participation (IAP2) best practice principles will also be applied, including special measures such as additional focus group meetings, the use of local facilitators at meetings, and the translation of documents, advertisements and notification letters from English into isiXhosa.

ILISO will provide feedback to stakeholders throughout the process. I&APs and the public will be informed of the availability of the draft EIA report (through written notification to registered stakeholders), as well as of the authorities' decision and the appeal process in respect of the various applications (through newspaper advertisement and written notification to all registered stakeholders).

The draft reports will be distributed to public places and made available for a 30 calendar day public comment period. The draft reports will also be presented at stakeholder meetings, where I&APs will be able to confirm that their issues have been captured correctly, properly understood by the environmental team, and included in the specialist studies and impact assessment. The final documents will be made available for public comment for a 21 calendar day public comment period and be submitted to the authorities. Draft and final reports will be made available for download on the DWA website.

All issues and comments received from the stakeholder consultation process will be captured in an Issues and Responses Report that will form an Appendix to the EIA Report.

The relevant authorities will be kept up to date with progress on the EIA through the Authorities Forum.

10. Programme

Due to the high priority nature of this project, a fast-tracked process is being implemented. Although the fast-tracked programme will not compromise the legislated EIA process if the deadlines are achieved, it involves some quality risks if not all role players cooperate fully.

The fast-tracked programme will require optimal coordination between all the commenting authorities and shortened review periods and decision-making processes for DEA.

The key milestones in the EIA process are summarised below:

- *EIA phase (including specialist studies): July – September 2014*
- *Public comment period for draft EIR and EMP: September 2014*
- *Submission of final EIR: November 2014.*

11. Conclusion and recommendations

The main aim of the Mzimvubu Water Project is the socio-economic upliftment of the largely undeveloped and impoverished communities within the area. This is to be achieved through:

- *Supply schemes for domestic and industrial water requirements;*
- *Supply schemes for irrigated agriculture;*
- *Hydropower generation; and*
- *The creation of temporary and permanent jobs.*

The project involves some positive and negative impacts. Potentially significant environmental impacts of the project have been identified and will be further investigated and assessed in the EIA phase.

The project team has the necessary experience and skills to carry out the EIA process (including specialist studies) required and it is recommended that the EIA process proceeds based on the proposed Plan of Study for EIA.

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE MZIMVUBU WATER PROJECT – SCOPING REPORT

DEA REF No. 14/12/16/3/3/2/677 (Dam construction application)
14/12/16/3/3/2/678 (Electricity generation application)
14/12/16/3/3/1/1169 (Roads application)

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Acronyms

BID	Background Information Document
BLMC	Biodiversity Land Management Class
CBA	Critical biodiversity area
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DEDEA	Eastern Cape Department of Economic Development and Environmental Affairs (former DEDEAT)
DEDEAT	Eastern Cape Department of Economic Development, Environmental Affairs and Tourism
DEIR	Draft Environmental Impact Assessment Report
DM	District Municipality
DMR	Department of Mineral Resources
DSR	Draft Scoping Report
DWA	Department of Water Affairs
DWAF	Department of Water Affairs and Forestry (former DWA)
EAP	Environmental Assessment Practitioner
EC	Eastern Cape
ECBCP	Eastern Cape Biodiversity Conservation Plan
ECPHRA	Eastern Cape Provincial Heritage Resources Authority
ECPTA	Eastern Cape Parks and Tourism Agency
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
EMP	Environmental Management Programme
EWR	Environmental Water Requirements
FEPA	Freshwater Ecosystem Priority Areas
FGM	Focus Group Meetings
FSR	Final Scoping Report
GIS	Geographical Information System
GleWap	Groot Letaba River Water Development Project
GN	Government Notice
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Parties
IAIA	International Association for Impact Assessment
IAIAsa	International Association for Impact Assessment South Africa
IRR	Issues and Response Report
LM	Local Municipality
MAR	Mean Annual Runoff
MEIA	Macro-economic Impact Analysis
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MW	Megawatt
MWP	Mzimvubu Water Project
NDP	National Development Plan

NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended
NEMPAA	National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003), as amended
NFEPA	National Freshwater Ecosystem Priority Area
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NPAES	National Protected Areas Expansion Strategy
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PES	Present Ecological State
PoS	Plan of Study
PPP	Public Participation Process
RAP	Relocation Action Plan
RCC	Roller-compacted concrete
RDL	Red Data List
SAHRA	South African Heritage Resources Agency
URV	Unit Reference Value
WMA	Water Management Area
WRYM	Water Resources Yield Model
WULA	Water Use Licence Application
WWTW	Waste Water Treatment Works

Abbreviations

MW	Mega Watt
m	Meters
km^2	Square Kilometers
ha	Hectare
°C	Degrees Celsius
%	Percentage
Ha	Hectares

1. INTRODUCTION

1.1 BACKGROUND

The Mzimvubu River catchment in the Eastern Cape of South Africa is within one of the poorest and least developed regions of the country. Development of the area to accelerate the social and economic upliftment of the people was therefore identified as one of the priority initiatives of the Eastern Cape Provincial Government.

Harnessing the water resources of the Mzimvubu River, the only major river in the country which is still largely unutilised, is considered by the Eastern Cape Provincial Government, as offering one of the best opportunities in the Province to achieve such development.

The five pillars on which the Eastern Cape Provincial Government proposed to model the Mzimvubu River water resources development are:

- Afforestation;
- Irrigation;
- Hydropower;
- Water transfer; and
- Tourism.

As a result of this the Department of Water Affairs (DWA) commissioned the Mzimvubu Water Project which consists of two multi-purpose dams on the Tsitsa River, a major tributary to the Mzimvubu River. Socio-economic upliftment is expected to be achieved through bulk potable water supply schemes for domestic and industrial water supply, bulk raw water supply schemes for irrigated agriculture, hydropower generation and the creation of temporary and permanent jobs (**Figure 1**).

Environmental authorisation is required for the infrastructure components of the proposed Ntabelanga-Laleni Conjunctive Scheme.

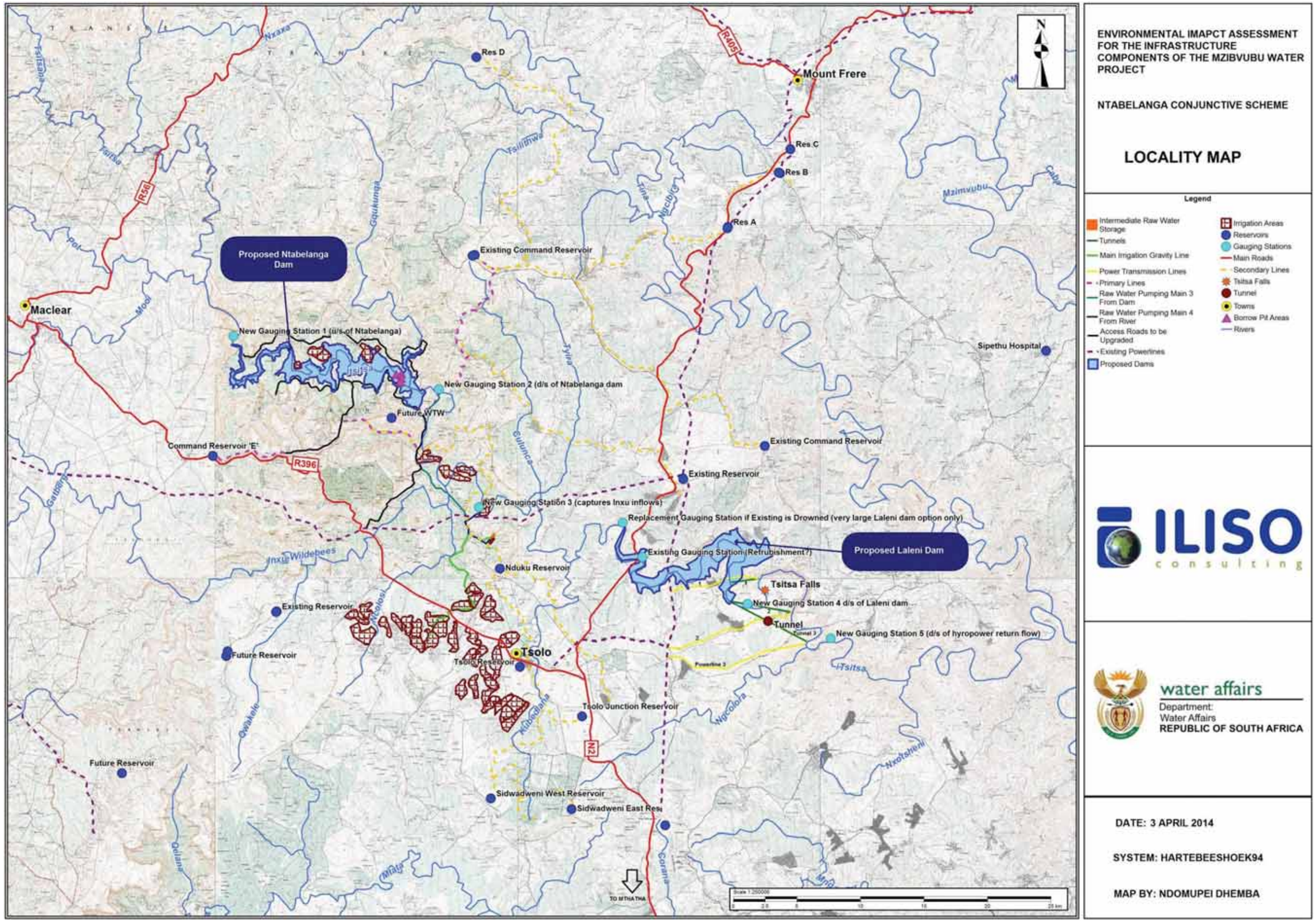

Figure 1: Locality map

1.2 PURPOSE OF THE ENVIRONMENTAL IMPACT ASSESSMENT

Chapter 5 of the National Environmental Management Act 1998 (Act No. 107 of 1998) (NEMA), aims to promote the use of appropriate environmental management tools, such as an Environmental Impact Assessment (EIA), in order to ensure the integrated environmental management of activities.

The general objective of integrated environmental management, as described in NEMA, is to identify, predict and evaluate the impacts of an activity on the social, economic, bio-physical and cultural components of the environment. This assessment includes the risks associated with activities, consequences of the activities as well as considering alternatives and mitigation measures to avoid, minimise or compensate for negative impacts, maximise benefits, and promote compliance with the principles of environmental management as set out in section 2 of NEMA. This is implemented by requiring environmental authorisation for activities that are "listed" in the EIA Regulations, 2010.

The Mzimvubu Water Project is an integrated multi-purpose (domestic water supply, agriculture, power generation, transport, tourism, conservation and industry) project and provides a socio-economic development opportunity for the region. The purpose of this EIA is to assess the components of the project that are NEMA listed activities for which the DWA has the mandate and intention to implement. The EIA process will provide the information that the authorities require to decide whether the project should be implemented or not, and if so then under what conditions.

1.3 PURPOSE OF THIS REPORT

This report describes the proposed project, the receiving environment, and identifies key issues and alternatives to be investigated in the impact assessment phase. It also describes the way forward in the Plan of Study for the EIA phase.

1.4 DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Lea Muruven is an Environmental Assessment Practitioner (EAP) with Masters degrees in Environmental Management and Political Science. She has experience in impact assessment and environmental management and has been responsible for drafting impact assessment reports and Environmental Management Programmes, and conducting public participation processes, as well as high level environmental screenings for a variety of projects in the water, energy, transport and industrial sectors. Lea has a good understanding of the laws and regulations relating to air quality, water, biodiversity, heritage, and waste management in South Africa. She is a member of the South African Affiliate of the International Association for Impact Assessment.

1.5 PROJECT TEAM

In addition to the EAP, the ILISO Consulting (Pty) Ltd project includes the following individuals: Dr Martin van Veelen (Project Director and Engineer), Terry Calmeyer (Project Leader), Kim Dalhuijsen (Public Participation Process Task Leader), Joseph Masilela (Public Participation Process administrator), Ndomupei Dhemba (GIS specialist), Nadine Duncan (WULA Task Leader). The ILISO team will be assisted by the following specialists: Stephen van Staden (Ecologist), Menno Klapwijk (Visual Specialist), William Mullins (Economic and Agricultural specialist), Bob Pullen (Relocation Action Plan Specialist), Neville Bews (Social specialist) Len van Schalkwyk (Heritage specialist), and James Cross (Legal advisor). Curricula Vitae are included in **Appendix A**.

Dr Martin van Veelen is a Professional Engineer with a PhD in aquatic health. He is a Fellow of the South African Institution of Civil Engineers, a member of the South African Society of Aquatic Scientists, of the Environmental Scientific Association, of the International Water Association, of the Water Institute of South Africa, and of the Vaal River Catchment Association. He is a certified Environmental Assessment Practitioner with 30 years experience who specialises in project management, environmental impact assessments and water resource planning. He specifically has extensive experience in water quality, especially water quality management, water quality monitoring and water quality assessment. Martin has experience in managing projects that involve multi-disciplinary teams, and projects that involve public consultation and participation.

Terry Calmeyer is a certified Environmental Assessment Practitioner. She has a Masters degree in Environmental Management and specialises in Environmental Impact Assessments, the environmental components of project implementation and Project Management. Terry serves on the International Association of Impact Assessment (IAIA) Council, is the past President of the South African Affiliation of the International Association of Impact Assessment (IAIAsa) and an active member of the South African Committee on Large Dams (SANCOLD), the Environmental Law Association and the International Association fpr Public Participation. She has been involved in a variety of different types of EIAs including for transmission lines, water supply projects, dams, roads, railways, waste water treatment works and airports, in South Africa, Uganda, Lesotho, Botswana, Namibia and Mozambique. Terry was the EAP for the Groot Letaba Water Project (GLeWaP) and the Kobong pumped storage scheme. She is the specialist environmental advisor on the Mooi Mgeni Transfer Scheme Phase 2.

Kim Dalhuijsen has an Honours degree in Zoology and Environmental Sciences from the University of the Witwatersrand and one year of work experience. She has been responsible for drafting impact assessment reports and Environmental Management Programmes, and assisting with public participation processes on a variety of projects. She is a member of the South African Affiliate of the International Association for Impact Assessment.

Joseph Masilela has six years experience in office administration and community liaison work that includes arranging meetings, facilitating community workshops, meetings with traditional authorities and assisting on all project related work. Joseph assists with secretarial functions for projects including maintaining attendance registers and databases for projects.

Ndomupei Dhemba is a GIS and Remote Sensing specialist with a Masters degree in GIS and Remote Sensing for Environmental Management. She has experience in natural resources management including resource Inventorying and auditing, biodiversity assessment, and has been involved in a number of EIA programmes as a biodiversity and GIS & Remote Sensing Specialist in Zimbabwe, Tanzania and South Africa. She has also worked with rural communities in the promotion of rural development through the sustainable utilization of Natural Resources through group projects, capacity building and EIAs of these projects. She also has experience in public participation and research particularly in the promotion of the use of remote sensing for biodiversity assessment. She is conversant with ArcGIS, ERDAS, ILWIS, Planet GIS and ENVI.

Dr Neville Bews is a senior social scientist and human resource professional with 36 years experience. He consults in the fields of Social Impact Assessments and research, and human resource management. He has worked on a number of large infrastructure, mining and water resource projects. He at times lectures at both the Universities of Pretoria and Johannesburg and is a Senior Fellow in the Centre for Sociological Research, Department of Sociology at the University of Johannesburg.

Stephen van Staden has a Masters degree from the University of Johannesburg in Environmental Management. Stephen has experience on over 1 000 environmental assessment projects specifically with aquatic and wetland ecological studies as well as terrestrial ecological assessments and project management. Stephen has a professional career spanning more than 10 years, most of which have been as the owner and managing member of Scientific Aquatic Services. He is registered by the South African River Health Project as an accredited aquatic biomonitoring specialist and is also registered as a Professional Natural Scientist with the South African Council for Natural Scientific Professions in the field of ecology. Stephen is also a member of the Gauteng Wetland Forum and South African Soil Surveyors Association.

Menno Klapwijk obtained a B.Sc. degree in Landscape Architecture at Texas A&M University. Menno is a registered Landscape Architect (South African Council for Landscape Architectural Professionals). He has experience in integrated environmental assessment and planning for existing and future land uses, visual impact assessment, mining and quarry reclamation and development planning and design. He's been involved in Landscape design for corporate headquarters, office and industrial parks, housing developments, hotels, plazas and pedestrian malls as well as recreation planning and

planning and design for conservation areas, natural resource areas, nature reserves and game farms.

William Mullins has 38 years experience in the agricultural and economic field. He has been involved in economic growth and development strategies for regions and sub-regions in South Africa; sectoral economic analyses; various cost-benefit analysis studies; environmental impact studies and policy analysis including irrigation projects; constructing a Building Construction Model for South Africa with specific reference to the impact of Government Capital Expenditure and the Construction of National and Regional Input Output Tables as well as the compilation of National, Regional or Multi-Regional SAM. William has also worked in specialist fields like the SKA Telescope study, and impact studies for Eskom.

Bob Pullen obtained BSc(Eng), MSc(Eng) and MBL degrees. He played a major role in the conception of the Thukela-Vaal Project, and was responsible for much of the construction phase. His interest in and experience with environmental management issues led to his significant roles in managing various Reserve determination assignments and Environmental Impact Assessments (Groot Letaba, Levhuvhu and Thukela Rivers in Limpopo and KwaZulu-Natal) and to the implementation of social components of Environmental Management Plans. Important examples of the last-mentioned are the Relocation Action Plan for Nandoni Dam near Thohoyandou (465 households, 1000 graves, four archaeological sites and 2100 subsistence farmers) and the relocation of about 130 graves and ten archaeological sites at De Hoop Dam in the Steelpoort River, both in Limpopo. He was also responsible for managing implementation of the Environmental Management aspects associated with construction of Spring Grove Dam in the Mooi River, KwaZulu-Natal.

Len van Schalkwyk has 25 years of professional experience as a practising archaeologist and heritage resource manager in South Africa, Botswana and Mozambique. His research interests have focussed on the Iron Age of southern Africa, while his management specialisations are heritage impact assessments, community liaison and ancestral grave management.

James Cross obtained BA, LLB and LLM (Constitutional and Environmental Law) degrees from the University of Stellenbosch. He subsequently obtained a Diploma in Corporate Law from the Rand Afrikaans University (now University of Johannesburg). During 1997, James was admitted as an attorney and commenced practising law at Blakes Maphanga Incorporated. James consults with clients in the environmental consulting, engineering, heavy industrial, mining and property development sectors. His environmental law practice includes legal interpretation of environmental legislation and the drafting of legal opinions, administrative appeals, and preparation of legal requirements assessments, legal auditing, drafting and review of commercial agreements, advice on legal authorisation processes as well as legal training. He is regularly requested to assist with environmental, health and

safety due diligence investigations within the context of mergers and acquisition transactions. James has been consulting to the public sector (government and parastatals) on statutory development projects. He has acted as external legal advisor and drafter of regulations under the Protected Areas Act 57 of 2003 and consults to government on the transfer of environmental impact assessment requirements from mining to environmental legislation. James has written numerous articles on aspects of environmental law, has lectured to students at the University of Pretoria and University of Stellenbosch and presented papers at various Cameron Cross and other sponsored seminars and events. He is presently the course leader for the Certificate in Environmental Law presented by the University of Pretoria.

1.6 STRUCTURE OF THIS REPORT

Chapter 2 describes the legislation that applies to the project and the guidelines taken into account; **Chapter 3** describes the proposed project; **Chapter 4** motivates the need and desirability of the project, **Chapter 5** describes the alternatives considered, **Chapter 6** describes the Public Participation Process that has taken place during the Scoping Phase of the project, **Chapter 7** describes the receiving environment, **Chapter 8** presents key issues to be investigated in the EIA phase. **Chapter 7** presents the plan of study for the EIA phase and **Chapter 8** provides the conclusions and recommendations.

2. LEGISLATION AND GUIDELINES CONSIDERED

This EIA is being undertaken in terms of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998). The following Regulations promulgated in terms of NEMA apply:

- GN 543 – specifies the process that must be undertaken to obtain an Environmental Authorisation;
- GN 544 – Listing Notice 1 which identifies activities that would require environmental authorisations prior to commencement of that activity for which a Basic Assessment is required;
- GN 545 – Listing Notice 2 which identifies activities that would require environmental authorisations prior to commencement of that activity for which a Scoping and Environmental Impact Assessment is required; and
- GN 546 - Listing Notice 3 which activities that would require environmental authorisations prior to commencement of that activity in specific identified geographical areas only.

2.1 LISTED ACTIVITIES TO BE AUTHORISED IN TERMS OF NEMA

The proposed project involves several activities listed in terms of Section 24 of NEMA (**Table 1**). An Environmental Authorisation must be issued by the national Department of Environmental Affairs (DEA) prior to commencing with the project.

Table 1: List of activities to be authorised in terms of NEMA

Listed activity as described in General Notice (GN) R.544, 545 and 546	Description of project activity that triggers listed activity
GN R.544 Item 11: The construction of: (iii) bridges; (iv) dams; (v) weirs; (xi) infrastructure or structures covering 50 square metres or more. where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	The project involves the construction of 2 dams. 2 bridges crossing the Tsitsa River will have to be demolished and relocated or raised. Five flow gauging stations (weirs) are planned as part of the project. A river intake structure will be built as part of the irrigation scheme.
GN R.544 Item 12: The construction of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 19 of Notice 545 of 2010.	The proposed project includes the construction of treated water reservoirs, as part of the potable water bulk infrastructure, and a raw water reservoir for the irrigation system.
GN R.544 Item 18: The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from: (i) a watercourse	Construction of the dams will involve infilling material into the Tsitsa River.
GN R.544 Item 22: The construction of a road, outside urban areas, (i) with a reserve wider than 13,5 meters or, (ii) where no reserve exists where the road is wider than 8 metres, or (iii) for which an environmental authorisation was obtained for the route	Existing district roads inside the two dams' footprint will need to be rerouted as the existing roads will be inundated. New access roads will be built in order to facilitate access to the sites during

determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010	construction and operational phases.
GN R.545 Item 1: The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more.	The hydropower plant at the Ntabelanga Dam will generate an average of 2.1 MW and the plant at the Laleni Dam will generate up to 30 MW average output. Combined scheme output is an average of 35 MW or up to 180 MW peaking power.
GN R.545 Item 8: The construction of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex.	High voltage power lines will be constructed in order to feed the power generated at the Laleni and Ntabelanga Dams into the national grid.
GN R.545 Item 19: The construction of a dam, where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.	Both the Ntabelanga and Laleni Dams trigger this activity. The maximum dam wall height for the Ntabelanga Dam is 67 m; the inundated area upstream at maximum flood level will be approximately 40 km^2. The maximum dam wall height for the Laleni Dam is 32 m; the inundated area upstream at maximum flood level will be approximately 15 km^2.
GN R.546 Item 2: The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres. ii. In a protected area identified in terms of NEMPAA, excluding conservancies; iii. Outside urban areas, in: (aa) National Protected Area Expansion Strategy Focus areas; (bb) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (cc) Sites or areas identified in terms of an International Convention; (dd) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ee) Core areas in biosphere reserves; (ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (gg) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.	Some reservoirs will fall within Critical Biodiversity Areas (CBA).
GN R.546 Item 13: The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for: (1) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), in which case the activity is regarded to be excluded from this	Vegetation clearance for construction of dam and associated infrastructure and borrow areas within CBAs.

list. (2) the undertaking of a linear activity falling below the thresholds mentioned in Listing Notice 1 in terms of GN No. 544 of 2010. **(a)** Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority. **(c) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga, Northern Cape and Western Cape:** ii. Outside urban areas, the following: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (dd) Sites or areas identified in terms of an International Convention; (ee) Core areas in biosphere reserves; (ff) Areas within10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (gg) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.	
GN R.546 Item 16: The construction of: (i) jetties exceeding 10 square metres in size; (ii) slipways exceeding 10 square metres in size; (iii) buildings with a footprint exceeding 10 square metres in size; or (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line. **(a) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga and Northern Cape:** ii. Outside urban areas, in: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) World Heritage Sites; (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (ee) Sites or areas identified in terms of an International Convention; (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Core areas in biosphere reserves; (hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (ii) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.	Some of the new infrastructure (e.g. bridges and weirs), as well as the dams themselves will be constructed in or within 32 m of a watercourse, and some of that infrastructure will be located within identified CBAs.

2.2 CONTENTS OF THE SCOPING REPORT

Table 2 sets out the content requirements of a Scoping Report, in accordance with regulation 28 of GN 543.

Table 2: Scoping Report Content in terms of Section 28 of GN 543

	EIA Regulations requirements	Scoping Report
(a)	Details of EAP and expertise to carry out scoping procedures	Chapter 1
(b)	Description of the Proposed Activity	Chapter 3
(c)	Description of Alternatives	Chapter 5
(d)	Description of the property on which the activity is to be undertaken and the location of the activity on the property	Chapter 3
(e)	Description of the affected environment. Description of the manner in which the activity may be affected by the environment.	Chapter 7
(f)	Legislation and guidelines considered	Chapter 2
(g)	Environmental issues and potential impacts, including cumulative impacts	Chapter 8
(h)	Details of Public Participation Process (PPP) conducted: (i) Steps taken to notify potentially interested and affected parties of the application; (ii) Proof of on-site notices and notification letters; (iii) Stakeholder database; and (iv) Summary of issues raised by interested and affected parties (I&APs) including response from EAP on issues.	Chapter 6
(i)	Need and Desirability of proposed activity	Chapter 4
(j)	Description of potential alternatives	Chapter 5
(k)	Copies of I&AP representations and comments received	Appendix B
(l)	Copies of minutes of meetings with I&APs /stakeholders	Appendix B
(m)	Responses by EAP to those representations and comments and views	Appendix B
(n)	Plan of Study (PoS) for EIA including: i) Description of tasks to be undertaken; ii) Stages of competent authority (CA) consultation; iii) Methodology for assessing environmental issues; and iv) Details of PPP to be conducted during EIA.	Chapter 9
(o)	Specific information required by CA	Chapter 2.3
(p)	Other matters required in terms of sections 24(4)(a) and (b) of the Act, i.e. NEMA section 24 (4) Procedures for the investigation, assessment and communication of the potential	See Authorities Forum as discussed in Chapter 6

	consequences or impacts of activities on the environment- (a) must ensure, with respect to every application for an environmental authorisation- (i) coordination and cooperation between organs of state in the consideration of assessments where an activity falls under the jurisdiction of more than one organ of state; (ii) that the findings and recommendations flowing from an investigation, the general objectives of integrated environmental management laid down in this Act and the principles of environmental management set out in section 2 are taken into account in any decision made by an organ of state in relation to any proposed policy, programme, process, plan or project; (iii) that a description of the environment likely to be significantly affected by the proposed activity is contained in such application; (iv) investigation of the potential consequences for or impacts on the environment of the activity and assessment of the significance of those potential consequences or impacts; and (v) public information and participation procedures which provide all interested and affected parties, including all organs of state in all spheres of government that may have jurisdiction over any aspect of the activity, with a reasonable opportunity to participate in those information and participation procedures; and (b) must include, with respect to every application for an environmental authorisation and where applicable- (i) investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity; (ii) investigation of mitigation measures to keep adverse consequences or impacts to a minimum; (iii) investigation, assessment and evaluation of the impact of any proposed listed or specified activity on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), excluding the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act; (iv) reporting on gaps in knowledge, the adequacy of predictive methods and underlying assumptions, and uncertainties encountered in compiling the required information; (v) investigation and formulation of arrangements for the monitoring and management of consequences for or impacts on the environment, and the assessment of the effectiveness of such arrangements after their implementation;	Chapter 7 Will be addressed in the Environmental Impact Assessment Phase of the project Chapter 6 Will be addressed in the Environmental Impact Assessment Phase of the project Will be addressed in the Impact Assessment Phase of the project Will be addressed in the Environmental Impact Assessment Phase of the project Will be addressed in the Environmental Impact Assessment Phase of the project This will be addressed in the EMP. See Chapter 9. Will be addressed in the Environmental Impact Assessment Phase

	(vi) consideration of environmental attributes identified in the compilation of information and maps contemplated in subsection (3); and (vii) provision for the adherence to requirements that are prescribed in a specific environmental management Act relevant to the listed or specified activity in question.	Chapter 2.4

2.3 SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

The Department of Environmental Affairs, in its acknowledgement of receipt of and acceptance of the application forms for the project dated 14 April 2014, requires the following:

- Alternatives must be identified, investigated to determine if they are feasible and reasonable. It is also mandatory to investigate and assess the option of not proceeding with the proposed activity (the "no-go" option).
- A detailed and complete EMP must be submitted with the EIR. This EMP must not provide recommendations but must indicate actual remediation activities which will be binding on the applicant. Without the EMP the documents will be regarded as not meeting the requirements and will be returned to the applicant for correction;
- The applicant/EAP is required to inform the Department in writing upon submission of any draft report, of the contact details of the relevant State Departments (that administer laws relating to a matter affecting the environment) to whom copies of the draft report were submitted for comment. Upon receipt of this confirmation, the DEA will in accordance with Section 24O(2) and (3) of the NEMA inform the relevant State Departments of the commencement date of the 40 day commenting period, or 60 days in the case of the Department of Water Affairs for waste management activities which also require a licence in terms of the National Water Act (Act 36 of 1998);
- Should it be necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999), please submit the necessary application to SAHRA or the relevant provincial heritage agency and submit proof thereof with the Environmental Impact Assessment Report. The relevant heritage agency should also be involved during the public participation process and have the opportunity to comment on all the reports to be submitted to the DEA.

2.4 OTHER AUTHORISATION REQUIREMENTS

2.4.1 Water Use Licence

The construction of the dams and associated infrastructure involves a number of water uses listed in terms of section 21 of the National Water Act, No 36 of 1998 (NWA), and therefore requires a Water Use Licence.

A Water Use Licence Application (WULA) will be compiled in parallel with the EIA process, for the following water uses:

- s21 (a): taking water from a water resource;
- s21 (b): storing of water;
- s21 (c): impeding or diverting the flow of water in a water course;
- s21 (i): altering the bed, banks, course or characteristics of a water course,
- s21 (f): discharge of waste or water containing waste into a water resource through a pipe, canal, sewer or other conduit; and
- s21 (g): disposing of waste in a manner which may detrimentally impact on a water resource.

2.4.2 Borrow areas and quarries

Construction materials such as sand, gravel and rock material will be required for the construction of the dams and roads. Existing licensed quarries and borrow pits in the area may not be adequate or suitable to provide all the required construction materials and it is estimated two new rock quarries and eight sand borrow pits will be necessary for Ntabelanga and Laleni dam sites.

In terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), as amended, and the Mineral and Petroleum Resources Development Regulations in GNR 527 of 23 April 2004, the DWA has been exempted by virtue of GNR 762 of 25 June 2004 from the application procedures and the approval of rights and permits in terms of sections 16, 20, 22, and 27 of the MPRDA. However, in accordance with section 106(2) of the MPRDA, the DWA is required to compile an Environmental Management Programme (EMP) for approval in terms of the provisions of section 39 (4) of the Act.

Where the establishment and use of borrow pits result in a listed activity being undertaken, the impact of the new borrow areas and quarry will be investigated in the EIA, and EMPs will be compiled for approval by the DMR.

2.4.3 Heritage permits

The proposed project involves a number of activities listed in terms of section 38 of the National Heritage Resources Act 25 of 1999 (NHRA), which require authorisation from the relevant heritage authorities.

According to section 38, SAHRA requires that a Heritage Impact Assessment (HIA) is undertaken where certain activities are proposed. The activities that apply to the proposed DBPR include:

38(1)(a) - The construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length,

38(1)(c) - Any development or other activity which will change the character of a site exceeding 5 000 m2 in extent; or Involving three or more existing erven or sub-divisions thereof; or
involving three or more erven or sub-divisions thereof which have been consolidated within the past five years,

38(1)(d) - The rezoning of a site exceeding 10 000 m^2 in extent.

A Heritage Impact Assessment (HIA) will be conducted as part of the EIA process. The HIA will be submitted to the Eastern Cape Provincial Heritage Resources Authority and the South African Heritage Resources Agency (SAHRA) for decision-making regarding heritage resources.

2.4.4 Waste Management Licence

The Management of Waste is regulated by the National Environmental Management: Waste Act (Act 59 of 2008) (NEMWA) and associated Regulations.

The construction of Waste Water Treatment Works (WWTW) is, however, listed in the EIA Regulations. Permanent Waste Water Treatment Works (WWTW) will be constructed to cater for construction, as well as operation phase requirements. Two WWTWs are envisaged, located near the Ntabelanga Dam site and the Laleni Dam site respectively. Each facility will treat less than 2 000 m^3 of sewage per day. This is below the thresholds that trigger activities listed in Listing Notices 1 and 2 of the EIA Regulations, 2010.

GN 921 lists Waste Management Activities in respect of which a waste management licence is required; these include various activities associated with the storage of waste, reuse, recycling and recovery of waste, treatment of waste (which includes the remediation of contaminated land) and disposal of waste. The Schedule to the Notice distinguishes between two categories of waste management activities which require licensing and for which a basic assessment process (for Category A Waste Management Activities) or an Environmental Impact Assessment process (for Category B Waste Management Activities) must be conducted.

Construction activities usually result in hazardous as well as general waste.

Waste Management Licences are required for, amongst others:

- The storage of general or hazardous waste in lagoons;
- The disposal of inert waste to land in excess of 25 tons;
- The disposal of any hazardous waste to land;
- The disposal of general waste to land covering an area of more than 50m^2 and
- The disposal of domestic waste generated on premises in areas not services by the municipal service where the waste disposed exceeds 500 kg per month.

Schedule 3 of the NEMWA, as amended, defines "general waste" as waste that does not pose an immediate hazard or threat to health or to the environment, and includes—
(a) domestic waste;
(b) building and demolition waste;
(c) business waste; and
(d) Inert waste; or
(e) any waste classified as non-hazardous waste in terms of the regulations made under section 69, and includes non-hazardous substances, materials or objects within business, domestic, inert, building and demolition wastes as outlined in Schedule 3 of the Act.

Where
"building and demolition waste" means waste, excluding hazardous waste, produced during the construction, alteration, repair or demolition of any structure, and includes rubble, earth, rock and wood displaced during that construction, alteration, repair or demolition; and includes discarded concrete, bricks, tiles and ceramics, discarded wood, glass and plastic, discarded metals, discarded soil, stones and dredging spoil and “other” discarded building or demolition wastes.

"inert waste" means waste that—
(a) does not undergo any significant physical, chemical or biological transformation after disposal;
(b) does not burn, react physically or chemically biodegrade or otherwise adversely affect any other matter or environment with which it may come into contact; and
(c) does not impact negatively on the environment, because of its pollutant content and because the toxicity of its leachate is insignificant and which include discarded concrete, bricks, tiles and ceramics, discarded glass and discarded soil, stones and dredging spoil, as listed in Schedule 3 of the Act.

Sludge will be dewatered/pressed/dried (depending upon the actual process selected at detailed design stage) and the treated sludge will be disposed to farmland or at a licensed approved solid waste disposal site. The sludge will be classified before it is disposed of in order to prove that it is not hazardous. A Waste Management Licence may be required if it is disposed to land and covers more than 50 m^2.

A Waste Management Licence may be required for the settling ponds that will be used to capture runoff from the batching and crusher plants (Activity (1) of Category A: Storage of general waste in lagoons).

The construction of the tunnel at the Laleni Dam for the generation of hydro power will result in spoil (inert general waste) that needs to be disposed of and may require a Waste Management Licence.

2.4.5 Licences for the removal of protected trees

Trees may have to be disturbed, damaged or destroyed/removed to make way for the new infrastructure. If those trees are protected in terms of the National Forests Act, 1998, a licence must be obtained from the Department of Agriculture, Forestry and Fisheries (DAFF).

2.5 OTHER LEGISLATION

Other legislation of direct relevance to the EIA is set out in **Table 3**.

Table 3: Other legislation of direct relevance to the EIA

Legislation	Applicable Legislative Requirements	Implications for the Applicant
Constitution of the Republic of South Africa Act, 1996 (Act 108 of 1996) Constitution of the Republic of South Africa Amendment Act, 1997 (Act 35 of 1997)	Section 24 – Environmental Rights	Everyone has the right to – An environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that – • Prevent pollution and ecological degradation, • Promote conservation, • Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. The Constitution sets in place all laws of the country and the Applicant should note the protection of the environment in the Bill of Rights, especially in relation to justifiable economic and social development.
	Section 33 – Access to Information	Everyone has the right to administrative action that is lawful, reasonable and procedurally fair. Everyone whose rights have been adversely affected by administrative action has the right to be given written reasons. The provisions of NEMA and its Regulations dictate the manner in which environmental authorisation processes are undertaken, decisions made, and the appeal process; all of which are applicable to the current application.
	Section 32 – Administrative Justice	Everyone has the right of access to: • Any information held by the state (unless it is information that is explicitly excluded by the Promotion of Access to Information Act, 2000 (Act 2 of 2000), • Any information held by another person and that is required for the exercise or protection of any rights. SANRAL and the Applicant will need to make information available to the public if requested.
National Environmental Management: Waste Act (Act 59 of 2008) (NEMWA)		GN921 lists Waste Management Activities in respect of which a waste management licence is required; these include various activities associated with the storage of waste, reuse, recycling and recovery of waste, treatment of waste (which includes the remediation of contaminated land) and disposal of waste. The Schedule to the Notice distinguishes between two categories of waste management activities which require licensing and for which a basic assessment process (for Category A Waste Management Activities) or an Environmental Impact Assessment process (for Category B Waste Management Activities) must be

Legislation	Applicable Legislative Requirements	Implications for the Applicant
		conducted. Construction activities usually result in hazardous as well as general waste. NEMWA defines "general waste" as waste that does not pose an immediate hazard or threat to health or to the environment, and includes— (a) domestic waste; (b) building and demolition waste; (c) business waste; and (d) Inert waste. Where "building and demolition waste" means waste, excluding hazardous waste, produced during the construction, alteration, repair or demolition of any structure, and includes rubble, earth, rock and wood displaced during that construction, alteration, repair or demolition; and "inert waste" means waste that— (a) does not undergo any significant physical, chemical or biological transformation after disposal; (b) does not burn, react physically or chemically biodegrade or otherwise adversely affect any other matter or environment with which it may come into contact; and (c) does not impact negatively on the environment, because of its pollutant content and because the toxicity of its leachate is insignificant. In addition, the waste types listed in Schedule 3 of the Act, as published in the National Environmental Management: Waste Amendment Act (Act No. 26 of 2014) will be considered in order to determine whether the listed waste types will be generated as part of the Project and if so, whether waste management licences are required. In addition, the Waste Classification and Management Regulations in GNR 634 in Government Gazette No. 36784 dated 23 August 2013; National Norms and Standards for the Assessment of Waste for Landfill Disposal – GNR 635 in Government Gazette No. 36784 dated 23 August 2013; National Norms and Standards for Disposal of Waste to Landfill – GNR 636 in Government Gazette No. 36784 of 23 August 2013 and the National Norms and Standards for the storage of waste in GN 926 in Government Gazette No. 37087 dated 29 November 2013 will be considered.
National Environmental Management: Waste Act, 2008 (Act 59 of 2008)	National Norms and Standards for the Storage of Waste (GN 926 of 29 Nov 2013)	GN926 presents the norms and standards for the storage of waste. The requirements of waste storage facilities; management of waste storage facilities; and general provisions required, are outlined.
National Environmental Management: Air Quality Act (Act 39 of 2004)	Sections 21 and 37	National Ambient Air Quality Standards GNR 1210 dated 24 December 2009. GNR 893 in Government Gazette 37054 dated 22 November 2013 being the list of activities and associated minimum emission standards identified in terms of section 21 of the Air Quality Act. Declaration of temporary Asphalt Plants as controlled emitters and establishment of emission standards in GNR 201 in

Legislation	Applicable Legislative Requirements	Implications for the Applicant
		Government Gazette No 37461 dated 28 March 2014; National Dust Control Regualtions in GNR 827 in Government Gazette 36974 dated 1 November 2013 Activities include Macadam preparation (the mixing of aggregate and tar or bitumen to produce road surfacing in permanent facilities and mobile plants). These activities require an Atmospheric Emission Licence in terms of Section 37 of the Act.

Other environmental legislation and policies relevant to the design, construction and operational phases of the proposed project are set out in the EMP (Volume 5) and include, but are not limited to, the following:

- National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA);
- In terms of section 50(5) of the National Environmental Management Protected Areas Act, 2003 (Act No. 57 of 2003) (NEMPAA): "*No development, construction or farming may be permitted in a nature reserve or world heritage site without the prior written approval of the management authority*.";

2.6 GUIDELINES CONSIDERED

- DEAT Integrated Environmental Management Information Series 1-5 and 12-15
- NEMA draft Implementation Guideline
- Western Cape Department of Environmental Affairs and Development Planning NEMA Environmental Impact Assessment Regulations Guideline and Information Document Series – Guideline on Public Participation (2007)
- Western Cape Department of Environmental Affairs and Development Planning NEMA Environmental Impact Assessment Regulations Guideline and Information Document Series – Guideline on Alternatives (2007)
- Western Cape Department of Environmental Affairs and Development Planning NEMA Environmental Impact Assessment Regulations Guideline and Information Document Series – Draft Guideline for Determining the Scope of Specialist Involvement in EIA Processes (2005)
- IAIA guidelines

2.7 WORLD COMMISSION ON DAMS

Cognisance is taken of the final report of the World Commission on Dams (WCD) that was published in November 2000. (The following section is based on the document Applying the World Commission on Dams Report in South Africa: Summary Report, the South African Multi-stakeholder Initiative on the World Commission on Dams: November 2004).

The World Commission on Dams (WCD), initiated in 1998, conducted the first comprehensive global and independent review of the performance and impacts of

large dams, and the options available for water and energy development. The final report of the WCD was released in November 2000. At a multi-stakeholder symposium in Midrand in July 2001 South African stakeholders accepted the core values and approaches and declared themselves to be broadly supportive of the strategic priorities outlined in the WCD report, but believed that the guidelines needed to be contextualised in the South African situation. A Co-ordinating Committee for the South African Multi stakeholder Initiative on the World Commission on Dams Report was elected to contextualise the WCD report and to make recommendations on its implementation in South Africa.

The five core values underpinning the WCD are

- Equity
- Efficiency
- Participatory decision-making
- Sustainability, and
- Accountability.

The WCD proposed an approach to guide future planning and decision-making based on recognition of rights and assessment of risks, in particular all rights at risk. According to this rights-and-risks approach, a first and essential step is to clarify the rights context for a proposed project (and its alternatives). This will allow for identification of legitimate claims and entitlements that might be affected by the project. It will also provide the basis for effective identification of stakeholder groups that must participate in the development process.

South Africa's Constitution provides a strong anchor for the rights-and-risks approach proposed by the WCD. Participation of all interested and affected parties has become a widespread fundamental principle entrenched in numerous pieces of legislation, including the NWA and the NEMA, that have particular relevance for dams and development and which provide for equitable and inclusive decision-making.

The NWA provides the principles and legal framework for water resources management, based on equitable access, beneficial utilisation and environmentally sustainable practices. The provision of the Reserve (ecological and basic human rights) in the NWA, is fundamentally in line with the WCD values and principles.

The principles in the NEMA include a people-centred approach to environmental management, transparency and access to information, a risk averse and cautious approach, environmental justice and equity.

The WCD identified seven strategic priorities and corresponding policy principles to further guide water and energy planning and decision-making.

- Gaining public acceptance
- Comprehensive options assessment
- Addressing existing dams
- Sustaining rivers and livelihoods
- Recognising entitlements and sharing benefits
- Ensuring compliance, and
- Sharing rivers for peace, development and security.

The seven strategic priorities are supported in the WCD report by sets of guidelines designed for adoption, adaptation and use by all stakeholders involved in water resources development and utilisation, where relevant.

The priority recommendations identified at the South Africa Multi-stakeholder Forum held in 2004 are:

- Addressing social impacts
- Enhancing governance of water and energy resources development, and
- Promoting river health and sustainable livelihoods.

Of particular relevance when undertaking an Environmental Impact Assessment for a proposed new dam are:

- Exploring and implementing mechanisms for recognising entitlements and sharing benefits for new dams: The Forum recommended that a clear national policy on recognising entitlements and sharing benefits for dam-affected people for new dams should be agreed to by all stakeholders. The Reparations Sub-Committee established during this Initiative should interact with DWA to take this recommendation to develop a national policy on compensation further. Based on this national policy, a Compensation Assessment and Action Plan (CAAP) should be developed for each project. Based on the CAAP, individual contracts with affected people should be entered into.
- Monitoring river systems against objectives of the Reserve: The flows of the Reserve are a function of the categorisation / classification system. Once the Reserve has been determined, through an equitable, objective and scientific methodology that is the product of broader participation, and applied to a river, the river system should be monitored closely to ensure that the Reserve is achieving its stated objectives of maintaining the ecological integrity of the river and providing for basic needs.

The United Nations Environment Programme's Dams and Development Project was established in November 2001 in response to a request of the Third Forum meeting of the World Commission on Dams (WCD) for a neutral entity to take forward the

consideration of the WCD recommendations into local contexts through promoting inclusive multi-stakeholder dialogue and, widely disseminating the WCD materials.

A compendium of relevant Practices for Improved Decision-making was published in 2007. The key issues dealt with in the Compendium are:

- The identification of options;
- Stakeholder participation;
- Social Impact Assessment and addressing outstanding social issues;
- Compensation policy and benefit-sharing mechanisms;
- Environmental Management Plans;
- Compliance; and International policy on shared rivers.

The compendium aims to deal with key issues essential to ensuring environmental and social sustainability. It suggests that the sustainability of dams involves consideration of engineering, environmental, social, economic and financial aspects within the context of an informed and participatory decision-making process. This integrated approach includes dealing with the entire basin when planning, developing and managing water resources, recognizing upstream and downstream interlinkages and being aware of particular stakeholder interests and areas of potential conflict. (UNEP, 2007).

Many aspects of the compendium do not apply directly to an Environmental Impact Assessment. Cognisance has, however, been taken of aspects that are applicable (particularly related to EMPs, social impact assessment and public participation).