5. ALTERNATIVES

One of the objectives of the EIA is to avoid and minimise negative impacts wherever possible. The primary tool for avoiding impacts is to consider alternatives. An alternative is a possible course of action, in place of another, that would generally meet the same purpose and need defined by the development proposal, but which would avoid or minimize negative impacts or enhance project benefits.

Alternatives must be practical, feasible, relevant, reasonable and viable. They can be in terms of:

- Activity (project) alternatives (e.g. incineration rather than landfill);
- Location;
- Scheduling (Timing);
- Technology (Process);
- Design;
- Different use of land;
- Demand;
- Inputs; or
- Routing.

It is also a requirement of the Regulations that the "No-go"/"Do nothing" option be comparatively assessed.

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 have therefore not been undertaken in the impact assessment phase of this study. Project level alternatives that have been considered are discussed in section 5.2.

5.1 ALTERNATIVES CONSIDERED DURING THE SCOPING PHASE

The following alternatives were considered during the scoping phase, but not carried forward to the impact assessment phase, for various reasons summarised below.

5.1.1 A different activity that achieves the same objective as the project

An activity alternative would be to consider different uses for the same financial investment that could provide potable and irrigation water to the supply area, 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 and Sanitation 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.

However, within the mandate of DWS, the following alternatives have been proposed:

5.1.1.1 Construct smaller dams

Several smaller dams could be constructed. In parallel, improvements in water infiltration by improving vegetation cover in the catchment to provide more volume and quality with improved winter flows, could be implemented to render the extraction from those small dams more sustainable. Improvement of infiltration would also mitigate against big floods that are prevalent in the area.

The technical feasibility study has looked into options of building smaller dams vis-a-vis the project objectives of supplying as many households as possible within economic reach of the dams, maximising the development of irrigated agriculture, developing hydropower for local consumption on the scheme as well as excess energy for revenue generation to improve the economics of the scheme, employment creation and above all socio-economic development of the area. . The study found that the potential sedimentation into the newly created reservoirs worked against smaller dams, as they could easily be silted up, thereby shortening the useful life of the project and decreasing its financial viability.

Catchment rehabilitation and management is being implemented as part of the broader development in the catchment, and also in direct support to the project. The rehabilitation of the catchment would need to be implemented, be effective and be sustainable before smaller dams could be economically constructed as an alternative to a large dam. This implies that the implementation of the proposed project to provide socio-economic upliftment of the area would need to be postponed for 10 to 15 years.

5.1.1.2 Develop groundwater resources

Improving water infiltration will improve underground water reserves and could allow for the development of boreholes in villages to provide more quality water.

This alternative was considered but does not fully address the objectives of the project, notably in terms of socio-economic development of the area.

According to the 2009 DWAF Water Resource Study in Support of the ASGISA EC Mzimvubu Development Project Volume 3 – Groundwater Assessment, and the literature review done in the Feasibility Study for the Mzimvubu Water Project: Water Resources (DWA, 2013e), there is a low to moderate supply potential distributed across the Mzimvubu Catchment that could possibly meet the individual demands of selected towns or irrigation schemes. However, this type of supply scheme would involve multiple abstraction sites spread across vast geographical areas. In consultation with the stakeholders during the project steering committee meetings,

the water services authorities in the area stipulated that they would prefer one single surface water source rather than multiple groundwater sources.

The development and operation of village boreholes is the mandate of district municipalities and not DWS, although the Department can provide support where possible. The district municipalities will still likely continue to develop groundwater to supply those communities that cannot be economically reached by the project and other developments in the area. A major disadvantage of isolated boreholes scattered throughout a wide area, as experienced by district municipalities, are the huge operational and maintenance challenges.

5.1.1.3 Provision of water by rain-fed tanks

Rain water harvesting does not fully address the objectives of the project, notably in terms of socio-economic development of the area. A rain water harvesting programme can however be implemented to complement the Mzimvubu Water Project.

5.1.2 Dam site alternatives

Location alternatives would be building the dam/s at a different site. As dam site alternatives have already been investigated, and as the site selection process included environmental and social criteria, only the preferred dam sites (i.e. Ntabelanga and Lalini) have been investigated in the EIA.

5.1.3 Alternative dam types

The selected optimum dam type for both the Ntabelanga and Lalini Dams is a mass gravity Roller Compacted Concrete (RCC) dam, with integrated outlet works and spillway. A typical cross-section of the dam wall is shown on **Figure 25**.

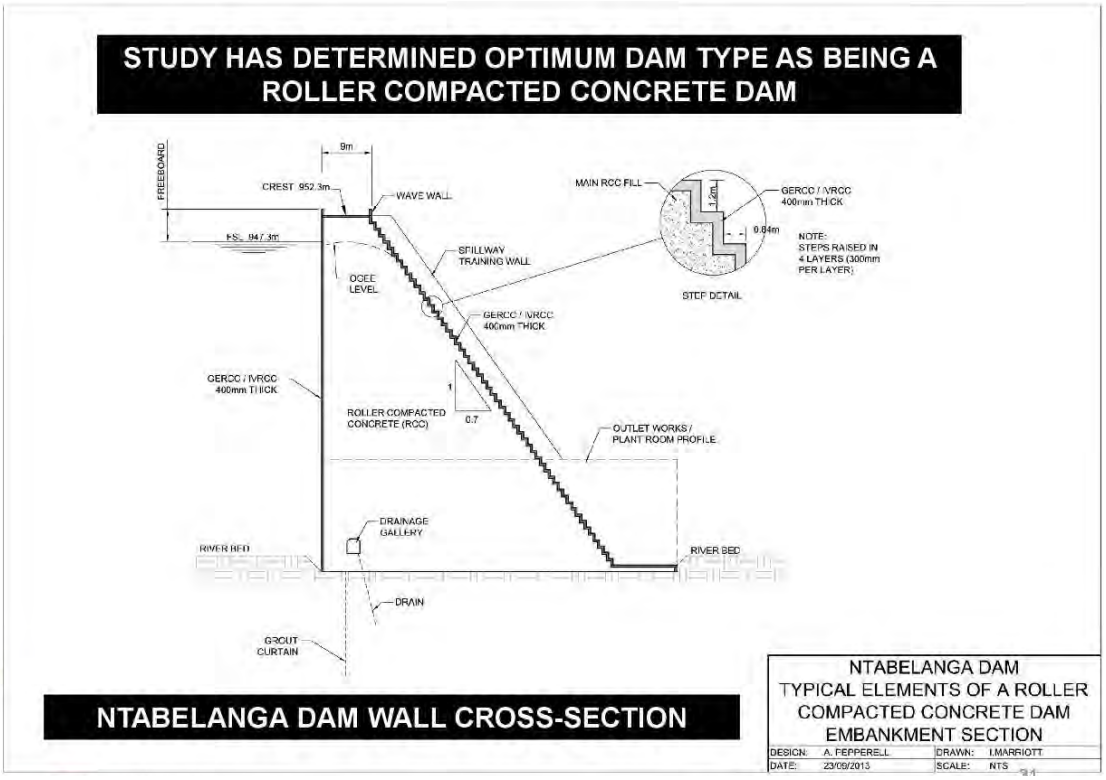

Figure 23: Typical Ntabelanga Dam wall cross-section

The choice of dam type is driven by technical aspects and is not included in the specialist studies.

5.1.4 A number of smaller water sources rather than a dam

For rural water supply a single large water source or a number of smaller sources can be used. The option of a number of smaller schemes has been considered but the conclusion was reached that, for the large population involved, the cost and risks of a large scheme should be accepted because of the difficulties and cost of sustaining a large number of smaller schemes (Muller, 2014). The smaller schemes alternative was therefore not considered in this report.

5.2 ALTERNATIVES ASSESSED DURING THE IMPACT ASSESSMENT PHASE

5.2.1 Hydropower generation options

The Ntabelanga Dam is considered to be the best option to supply domestic water requirements and irrigated agriculture. The Lalini Dam, downstream of the Ntabelanga Dam but upstream of the Tsitsa Falls, is being proposed for generating hydropower. The two dams will be operated together in a conjunctive scheme to improve the economic sustainability of the overall scheme. Releases from the Ntabelanga Dam can provide a reliable stream flow for generating hydropower at the Lalini Dam. Water from the Lalini Dam will be conveyed to a Hydro Electric Power

generating plant downstream of the Tsitsa Falls, after which the water used for generation is released back into the river.

The Mzimvubu Water Project infrastructure will require power supplies from Eskom for an estimated peak demand of 12.5 MW, with average annual consumption of 87 million kWh/a, and an estimated energy cost of R73 million/a. Developing the conjunctive hydropower scheme would allow a wheeling arrangement to be established, which could provide the above energy into the grid as well as generating surplus revenue to fund overall scheme operation and maintenance.

Power generation can be implemented as base load only, full-time peaking or part time peaking basis. Base load generation (37.5MW or 50MW) means generating 24 hours a day; while peaking (150MW) means that the hydropower plant runs for 4 to 8 hours a day during peak energy demand periods.

The greatest impacts of the hydropower generation are that the natural flows in the river are altered (negative) and that income is generated (positive). The difference that these options will make will be in the size and timing of the flows that are released back into the Tsitsa River, and the amount of income generated. Base load generation will result in the release of consistent quantities of water, while peak generation will result in significantly larger flows of water being released for fewer hours in a day.

The EAP recommends, as indicated by the DEA, that any Environmental Authorisation is subject to the Water Use Licence being obtained and adhered to. The WUL takes the Reserve determination, which includes setting the Ecological Water Requirements (EWR), into account. The EWR are determined to protect the in-stream aquatic and riparian ecology of the river by setting the limits of deviation from the natural flow beyond which the impact would be unacceptable. Whichever option of hydropower generation results in the greatest financial income while still fully meeting the EWR is therefore recommended. This still needs to be determined.

5.2.2 Alternative tunnel and associated power line routes

Three alternative power line routes, linking the hydropower plant downstream of the Lalini Dam to the grid, are being considered (**Figure 26**). The three power line routes correspond to three possible tunnel (or pipeline-tunnel combination) lengths from Lalini Dam to the hydropower plant. The amount of power generated depends on the available head, which increases with distance downstream of the Tsitsa Falls and corresponding increased length of the tunnel.

Alternative 1 consists of a 2.1 km tunnel and 7.1 km power line (in red and light blue on the map). Alternative 2 consists of a 4.9 km tunnel and 10.2 km power line (in dark blue and yellow on the map). Alternative 3 consists of an approximately 4.6 km pipeline and approximately 3.2 km tunnel (in purple on the map) and 13 km power

line (in orange on the map). All three alternative routes have been considered in the EIA.

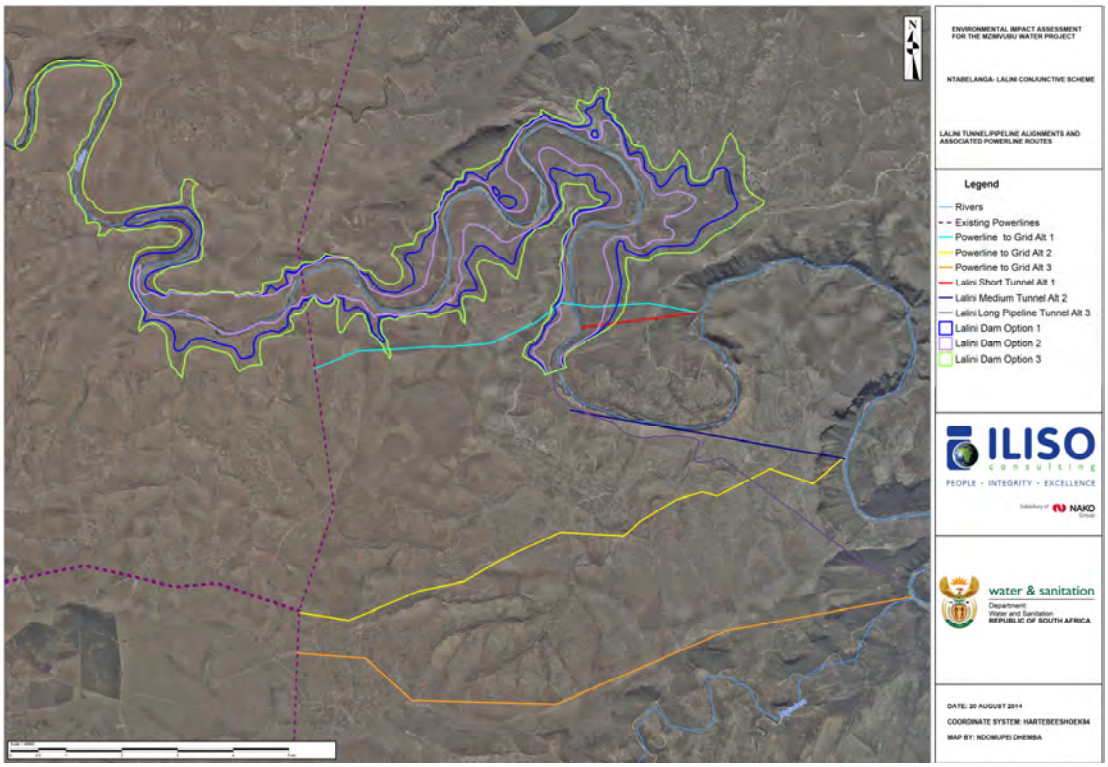

Figure 24: Alternative tunnels and power line routes at Lalini Dam

5.2.3 Alternative dam sizes

Three dam sizes are proposed for the Lalini Dam (**Figure 25**) and have been considered in the EIA.

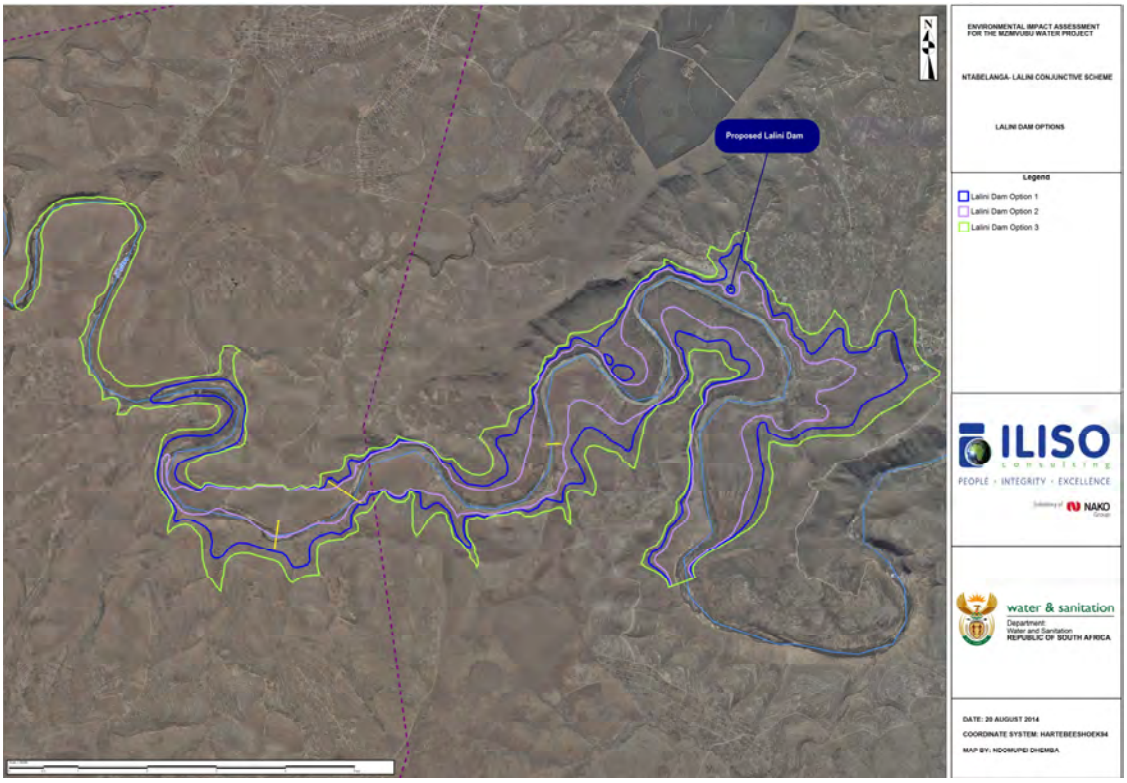

Figure 25: Lalini Dam alternative dam sizes

5.3 SUMMARY OF ALTERNATIVES ASSESSED IN THE EIA

The alternatives that are considered in the EIA are therefore:

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

Regarding the road alignments, pipeline routes and reservoir positions, no alternative routes/positions were identified during the feasibility study. The approach to the impact assessment was therefore to identify any sensitive areas that should be avoided, for consideration by the technical team. Any deviations derived in this manner were included in the Impact Assessment chapters (**Chapters 9 to 11**).

6. NEED AND DESIRABILITY

6.1 STRATEGIC CONTEXT FOR THE CONSIDERATION OF NEED AND DESIRABILITY

The Department of Environmental Affairs draft guidelines on need and desirability in terms of the EIA Regulations, 2010 (DEA, 2010) explains that, while it is essential that growth in the economy affects national policies and strategies, it is essential that the implementation of these social and economic policies take cognisance of strategic concerns such as climate change, food security as well as the sustainability in supply of natural resources and the status of our ecosystem services.

Consistent with the National Framework for Sustainable Development (NFSD) (DEA, (2010), it is required that spending on economic infrastructure is focused in priority areas with potential for economic development that serves the broader society's needs equitably. What is needed and desired for a specific area is strategically and democratically determined during the formulation of Integrated Development Plans (IDPs), and Spatial Developmental Frameworks (SDFs).

6.2 NATIONAL STRATEGY FOR SUSTAINABLE DEVELOPMENT, 2011

The following strategic objectives are identified in the National Strategy for Sustainable Development and Action Plan (2011):

- Enhancing systems for integrated planning and implementation;
- Sustaining our ecosystems and using natural resources efficiently;
- Building sustainable communities;
- Responding effectively to climate change; and
- Moving towards a green economy.

The Environment sector has developed an implementation plan with nine key focus areas, for contributing to the achievement of a national green economy (DEA 2011), namely:

1. Resource conservation and management;
2. Sustainable waste management practices;
3. Water management;
4. Environmental sustainability;
5. Green buildings and the built environment;
6. Sustainable transport and infrastructure;
7. Clean energy and energy efficiency;
8. Agriculture, food production and forestry; and
9. Sustainable consumption and production.

6.3 NATIONAL DEVELOPMENT PLAN (NDP)

The South African Government's vision for the water sector is that before 2030, all South Africans will have affordable access to sufficient safe water and hygienic sanitation. Since 1994 there have been significant changes in the water sectors policies, practices, institutional development and thus outcomes. Enhancing water resource management and infrastructure development became a key part to addressing problems resulting from earlier under investments. Local governments would retain the responsibility of ensuring that adequate services are provided to the people while regional utilities would provide facilities where municipalities have insufficient technical and financial capabilities. Water supply and sanitation services (water in pipes) depend on the availability of adequate water resources. (National Development Plan, 2011: 155).

In the National Development Plan (NDP) (National Planning Commission, 2011: 181), the development potential offered by the Mzimvubu was specifically highlighted: "[the Mzimvubu] *water resource development could support agriculture, domestic supply, hydropower production, transport and tourism if planned in a coordinated manner*." The NDP proposed that "*Programmes in underdeveloped regions, such as a proposed multipurpose development around a new dam on the uMzimvubu River, should also be prioritised since it could mobilise the natural resource advantages of an otherwise underdeveloped area*" (National Planning Commission, 2011: 160-161).

6.4 NATIONAL SPATIAL DEVELOPMENT PLAN (NSDP)

The NSDP argues that the spatial configuration of our country is not only the product of investment and growth, but also of apartheid spatial planning. The resulting spatial marginalisation from economic opportunities by large segments of the country's population is still a significant feature of South Africa's space economy and needs to be addressed to reduce poverty and inequality, ensuring shared growth.

The NSDP seeks to assist government to achieve the following development objectives and principles for the country:

- To focus fixed investment in areas with development potential. It is argued that these areas present the greatest possibility for both economic growth and poverty alleviation; and
- To ensure that citizens in areas with limited potential are provided with a package of essential public services, focusing on human resource development, labour market intelligence and social grants. It is argued that the prevalence of high poverty in an area does not mean that poverty can be more effectively addressed in that area.

In order to achieve a common platform for deliberation and decision-making around infrastructure investment and development spending decisions, there are two fundamental key components of the NSDP:

1. The defining of the space economy in terms of 'need' and 'development potential'; and
2. Utilising the set of guiding principles by all actors in government when planning, deliberating and budgeting for investment and spending.

This requires a well-coordinated and integrated system of planning in which the plans at a national, provincial and local level mutually inform each other, and in which there is agreement on the priorities for infrastructure investment and development spending. This in turn requires coordination and alignment in and between the spheres of government, notably through the alignment and harmonisation between:

- The national Medium Term Strategic Framework (MTSF);
- The national and provincial Medium Term Expenditure Frameworks (MTEFs);
- The Provincial Growth and Development Strategies (PGDSs);
- The annual budgets of national and provincial government departments, State-owned enterprises and municipalities; and
- Municipal Growth and Development Strategies (GDSs), IDPs and Spatial Development Frameworks (SDFs).

To utilise this prospect requires that intergovernmental District-wide agreements are reached on the needs and development potentials of the district space economy. Once these have been reached, these agreements then provide the base for:

- Preparing and reviewing an IDP in a District; and
- Agreements on the roles and responsibilities regarding infrastructure investment and development spending in the development of the District.

6.5 STRATEGIC INTEGRATED PROJECTS (SIP)

Government, under the leadership of Minister Ebrahim Patel, on 23 November 2010 released the framework of the new economic growth path aimed at enhancing growth, employment creation and equity. The new growth path sets a goal of five (5) million new jobs by 2020, identifies structural problems in the economy and points to opportunities in specific sectors and markets ("job drivers"). The first job driver is infrastructure: laying the basis for higher growth, inclusivity and job creation. In order to address these challenges and goals, Cabinet established a Presidential Infrastructure Coordinating Commission (PICC) to:

- Coordinate, integrate and accelerate implementation;
- Develop a single common National Infrastructure Plan that will be monitored and centrally driven;
- Identify who is responsible and hold them to account; and

- Develop a 20-year planning framework beyond one administration to avoid a stop-start pattern to the infrastructure roll-out.

Under their guidance, 18 strategic infrastructure projects (SIPs) have been developed. The SIPs cover social and economic infrastructure across all nine provinces, with specific emphasis on lagging regions. The Mzimvubu Water Project is a SIP3.

Textbox 1: Strategic Infrastructure Project 3: South-Eastern node and corridor development

- New dam at Mzimvubu with irrigation systems.
- N2-Wild Coast Highway which improves access into KwaZulu-Natal and national supply chains.
- Strengthen economic development in Port Elizabeth through a manganese rail capacity from Northern Cape.
- A manganese sinter (Northern Cape) and smelter (Eastern Cape).
- Possible Mthombo refinery (Coega) and transshipment hub at Ngqura and port and rail upgrades to improve industrial capacity and performance of the automotive sector.

6.6 EASTERN CAPE ENVIRONMENTAL IMPLEMENTATION PLAN (EIP)

The Constitution of the Republic of South Africa (Act 108 of 1996) sets the basis for both the protection of the environment (Section 24 environmental right) and for cooperative governance (Chapter 3 of the Constitution). The purpose of an EIP is to co-ordinate and harmonise the environmental policies, plans, programmes and decisions of the various national departments that exercise functions that may affect the environment or are entrusted with powers and duties aimed at achievement, promotion and protection of a sustainable environment, and of provincial and local spheres of government. The EIP assists in facilitating intergovernmental relations in environmental matters and thus, should become a mechanism of the Premier's Co-ordinating Forum for achieving sound environmental governance in provincial planning.

The second edition of the EIP for the Eastern Cape was promulgated in GN 82 on 24 March 2014.

6.7 INTEGRATED DEVELOPMENT PLANS AND SPATIAL DEVELOPMENT FRAMEWORKS

6.7.1 Municipal IDPs

According to the Municipal Act (MSA) (Act 32 of 2000), all municipalities have to undertake an Integrated Development Plan (IDP) process. The IDP is a legislative requirement thus it has legal status and supersedes all other plans that guide development at local government level.

An IDP is defined as an inclusive and strategic plan that:

- Links, integrates and co-ordinates a municipality's sector specific plans;
- Aligns the resource and capacity of the municipality to the overall development objectives of the municipality;
- Forms the policy framework on which annual budgets rest; and
- Informs and aligns with similar development plans at national and provincial spheres.

All three District Municipalities (DMs), OR Tambo DM, Alfred Nzo DM and Joe Gqabi DM, impacted by the Mzimvubu Water Project, have published extensive IDPs. All three DM IDPs (Afred Nzo IDP, 2010; Joe Gqabi IDP, 2012/13; OR Tambo IDP, 2012-17) refer to the DM's responsibility for planning, implementation, operation and maintenance of water and sanitation services. The Alfred Nzo IDP states that "*of the estimated 127 878 households approximately 70 000 are serviced with water in one way or another which translates to 45.2% of the population having no access whatsoever to potable water*." Additionally, "*Communities in rural areas are still highly dependent on undeveloped water sources and there remains a challenge in meeting the water demand, due to source identification*". **This states the need for an additional water source, such as that which would be provided by the Mzimvubu Water Project.**

The Mzimvubu Water Project should thus be promoted as an integrated local development programme in which the activities in the different sectors are coordinated in order to achieve the optimum synergies between them.

6.7.2 Spatial Development Frameworks

In terms of Section 26(e) of the Municipal Systems Act (Act 32 of 2000), every municipality is required to formulate a Spatial Development Framework (SDF) as a part of its IDP.

A SDF is a plan that seeks to guide overall spatial distribution of current and future desirable land uses within a municipality, in order to give physical effect to the vision, goals and objectives of the municipal IDP. It highlights priority investment and development areas and serves as a guide to decision-makers and investors. A SDF is thus an integral component of the corresponding IDP, its purpose being to translate the IDP into its spatial implications to provide broad, overall development guidelines. The aim of a SDF is not to control spatial development but rather to act as a framework that gives strategic guidance in respect of the location and nature of anticipated future development in a given municipality. Because land is a scarce resource, it needs to be planned in the most optimum manner.

Only the OR Tambo DM SDF is reviewed here as the other DMs are only marginally affected in terms of spatial development.

The OR Tambo DM, in partnership with DWS, has appointed Umgeni Water Board and Amatola Water Board to assist in identification of an improved bulk water supply system within its area of jurisdiction. Feasibility studies were undertaken to investigate the reliability of the identified schemes:

- The Central Scheme (Ingquza Hill and parts of Port St Johns) fed by the Mzintlavana River: Feasibility Study complete and preliminary design in progress; and
- The Southern Scheme (King Sabatha Dalindyebo, Nyandeni and parts of Mhlontlo): Optimal Utilization of Mthatha Dam for domestic consumption: Study complete but awaiting abstraction permit from DWS.

Other Sub-Regional Schemes to be integrated within the Regional Schemes have been proposed, including:

- The Sidwadweni Regional Water Supply under the Mhlontlo LM, which also supplies parts of the Nyandeni LM and rural villages within Tsolo and Tsolo Hospital: Approximately R250 million has been allocated for the development of the scheme since its inception and currently the last phase (phase 5) is in the design stage.
- The Mvumelwano Regional Water Supply under the Mhlontlo LM, which supplies Qumbu town and other Rural Villages within Qumbu: Approximately R150 million has been allocated for the development of the scheme since its inception and the first phase is being implemented.
- The Upper Culunca Regional Water Supply under the Mhlontlo LM, which supplies rural villages within Qumbu: Approximately R150 million has been allocated for the development of the scheme since its inception and the last extension is under construction. Currently the possible construction of a Dam to sustain the scheme is under investigation and the submission of a business plan for additional funding may be put forward.

In respect of the Mvumelwano scheme, it can be noted here that an abstraction point used as part of the scheme is located within the Lalini Dam basin and will be inundated.

6.8 GREEN VILLAGE CONCEPT

Poverty and lack of service delivery affects millions of people in South Africa. Various intervention strategies, including the SIPs, aim to catalyse the process of service delivery by line function departments, such as Water and Sanitation, Environmental Affairs, Agriculture, Forestry and Fisheries, etc. Although integration of knowledge and interventions is essential, in practice the “silo approach” is often visible.

The Water Research Commission's (WRC) Green Village programme seeks to demonstrate that the un-integrated (silos) research products that are aimed at bettering the livelihoods of marginalized societies, can respond better to addressing the basic needs if an integrated approach to implementation is followed.

Natural resources tend to suffer in unsustainable development, such as when carbon footprints escalate, causing ecosystem degradation and global change. For this reason and others, green economy and green innovation is encouraged, but must be viable and tested through research and technology in support of line departments and strategies.

The Green Village programme will be piloted in communities in the Ntabelanga Dam area, and aims to generate and test new technological innovations, and provide an adaptable framework of "green" solutions (a tool box) for meeting the fundamental needs of poor communities. The purpose of the programme is thus to uplift the standard of living by transforming impoverished dependent communities to self-sufficient independent communities, through creation of sustainable jobs and entrepreneurship.

6.9 FINANCIAL AND ECONOMIC VIABILITY

Financial viability can be defined as the ability to generate sufficient income to cover input costs and make a profit.

Economic viability can be measured by the positive economic benefits that the proposed project will provide. It includes quantification and identification of all the benefits expected and typically involves an economic cost-benefits analysis using opportunity costs.

Financial viability is not a requirement for a project of this nature, as the objective of the project is not to make a profit on the investment, but rather to contribute to the development of the project area. The intention of the project is to be economically viable, in that the direct and indirect socio-economic benefits should exceed the financial cost of the project.

This EIA therefore only considers economic viability (see **section 9.6**).

7. PUBLIC PARTICIPATION PROCESS

7.1 OBJECTIVES OF THE EIA PHASE

The main objectives of the EIA are to:

- Assess the significance of the environmental issues and impacts identified in the scoping phase, focusing on key impacts;
- Recommend appropriate measures to mitigate negative impacts and enhance the benefits, and include them in the draft EMPR; and
- Undertake a public participation process that provides opportunities for all interested and affected parties (I&APs) to be involved.

7.2 AUTHORITY CONSULTATION

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 DWS, 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.

The First Authorities Forum meeting took place on 28 May 2014. The objectives of the meeting were 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 Scoping Report.

The Authorities Forum includes representatives from the following organs of State:

- Department of Environmental Affairs;
- DWS regional and head office;
- Department of Agriculture, Forestry and Fisheries;
- Department of Rural Development and Land Reform;
- Department of Trade and Industry;
- Department of Energy;
- Eskom;
- SAHRA;
- Department of Public Enterprises;
- Department of Minerals Resources;
- Economic Development Department;
- EC Department of Economic Development, Environmental Affairs and Tourism;
- EC Department of Rural Development and Agrarian Reform;

- Eastern Cape Local Government and Tribal Authorities;
- EC Department of Roads and Public Works;
- EC Provincial Heritage Resources Authority;
- Affected Local and District Municipalities; and
- Amatola Water.

7.3 STAKEHOLDER IDENTIFICATION AND DATABASE

DWS has engaged with a number of stakeholders and role-players on this project during the feasibility study stage. A stakeholder database, including existing I&APs was provided at the beginning of the EIA process, which is updated on an ongoing basis as new stakeholders register on the database (**Appendix B**).

7.4 PARALLEL STAKEHOLDER LIAISON BY THE DEPARTMENT OF WATER AND SANITATION

There are several parallel stakeholder liaison initiatives for the project as a whole in addition to the public participation process for the EIA. Issues relevant to the EIA identified during these initiatives are incorporated into the process on an ongoing basis.

Table 14 lists the Department's formal and informal liaison structures and activities for this project, their purpose and representation.

Table 14: Department of Water and Sanitation formal and informal liaison structures and activities for the Mzimvubu Water Project

Liaison Structure	Purpose	Representation
Project Steering Committee (PSC) (Meetings take place every second month)	Guidance pertaining to strategic issues related to the project	▪ Department of Water and Sanitation and other relevant national departments ▪ EC Government ▪ Municipalities in the project area ▪ Key sectors such as conservation
Study Management Committee (Meetings take place every second month)	To co-ordinate and synchronize all the activities, to ensure efficient communication and to manage components and phases of the project	Department of Water and Sanitation: Options Analysis and EAP.
Eastern Cape Social and Economic Consultative Council (ECSECC) (13 February 2014, 26 March 2014, 6 March 2014)	ECSECC is a multi-stakeholder policy research and development planning organisation dedicated to evolving new forms of development cooperation between government, labour, organised business and developmental non governmental organisations	The ECSECC team is made up of over 40 committed professional and administrative staff. Subject experts, facilitators and development practitioners work in multidisciplinary teams.

Integrated Wild Coast Development Programme Steering Committee (19 February 2014)		

7.5 NOTIFICATION LETTERS, ON-SITE NOTICE AND BACKGROUND INFORMATION DOCUMENT

A letter notifying 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 DWS website. The BID covers all the applications that form part of the project. A newspaper advertisement was published in both local and provincial newspapers 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 (**Figure 26**). All documents are available in **Appendix B**.

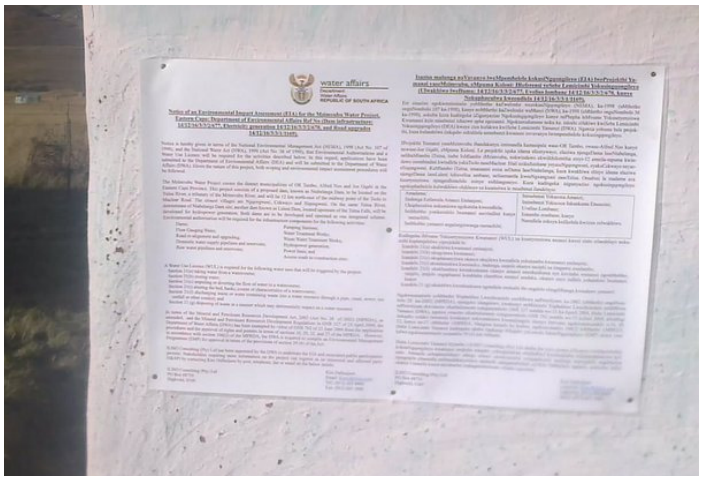

Figure 26: On-site notice (English and isiXhosa)

7.6 NEWSPAPER ADVERTISEMENTS

Notice of the applications was advertised in the Herald on 29 April 2014, in the Daily Dispatch on 05 June 2014 (**Figure 27**) and in the Mthatha Fever on 12 June 2014. Tearsheets are available in **Appendix B**.

ISAZISO MALUNGA NOVAVANYO LWEMPEMBELELO KOKUSINGQONGILEYO (EIA) LWEPROJEKTHI YAMANZI YASEMZIMVUBU, EMPUMA KOLONI

IReferensi yeSebe Lemicimbi Yokusingqongileyo (Ulwakhiwo lweDama: 14/12/16/3/3/2/677, Uvelliso lombane 14/12/16/3/3/2/678, kunye Nokuphuculwa kweendlela 14/12/16/3/3/1/1169.

Esi saziso ngokwemimiselo yoMthetho kaZwelonke wezokuSingqongileyo (NEMA), ka-1998 (uMthetho onguNombolo 107 ka-1998), kunye noMthetho kaZwelonke waManzi (NWA), ka-1998 (uMthetho onguNombolo 36 ka-1998), sokuba kuza kudingeka iSiguquziso Ngokusingqongileyo kunye nePhepha leMvume Yokusetyenziswa Kwamanzi kule misebenzi ichazwe apha ngezantsi. Ngokunxulumene noku ke, izicelo zifakiwe kwiSebe Lemicimbi Yokusingqongileyo (DEA) kwaye ziza kufakwa kwiSebe Lemicimbi Yamanzi (DWA). Ngamsa yobume bale projekthi, kuza kulandelwa imiqobo zokuhlela umsebenzi kwamazo zovavanyo lwempembelelo kokusingqongileyo.

IProjekthi Yamanzi yaseMzimvubu ibandakanya imimandla kamasipala wase-OR Tambo, owase-Alfred Nzo kunye nowase-Joe Gqabi, eMpuma Koloni. Le projekthi iquka idama elicetywayo, elaziwa njengeDama laseNtabelanga, nelikuMlambo iTsitsa, isebe loMlambo iMzimvubu, nokwindawo ekwiikhilomitha eziyi-12 emlilo-mpuma kwindawo esembindini kwindlela yakuTsolo naseMaclear. Iikati ezikufutshane yeyaseNgqonqweni, eyakuCekwayo neyaseSiqungweni, KuMlambo iTsitsa, emazantsi esiza seDama laseNtabelanga, kuza kwakhiwa elinye idama elaziwa njengeDama laseLaleni lokuvelisa umbane, nelisemantla kweNgcangcazi zaseTsitsa. Omabini la madama aza kusetyenziswa njengesibonelelo esinye esihlanganayo. Kuza kudingeka sigunyaziso ngokusingqongileyo ngokuphathelele kulwakhiwo olukhoyo xa kusenziwa le misebenzi ilandelayo:

- Amadama;
- Iindonga Ezilawula Amanzi Emlanjeni;
- Ukuphuculwa nokumiswa ngokutsha kweendlela;
- Imibhobho yamikazelelo kwamanzi asezindlini kunye namachibi;
- Imibhobho yamanzi angalungiswanga namachibi;
- Izikhululo zokumpompa amanzi
- Imisebenzi Yokucoca Amanzi;
- Imisebenzi Yokucoca Inkunkuma Emanzini;
- Uvelliso Lombane;
- Imtambo zombane; kunye
- Neendlela zokuya kulikelela kwiziza zolwakhiwo.

Kudingeka iMvume Yokusetyenziswa Kwamanzi (WUL) xa kusetyenziswa amanzi kwezi zinto zilandelayo nokuzothi kuphenjelelwe yiprojekthi le:

- Icandelo 21(a) ukukhiwa kwamanzi emlanjeni;
- Icandelo 21(b) ukugcinwa kwamanzi;
- Icandelo 21(c) ukuphazamiyiswa okanye ukujikwa kweendlela yokuhamba kwamanzi emlanjeni;
- Icandelo 21(i) ukutshintshwa kwesiseko, iindonga, umjelo okanye naziphi na iimpawu zomlambo;
- Icandelo 21(f) ukukhutshwa kwenkunkuma okanye amanzi amenkunkuma aye kuvimba wamanzi ngombhobho, imijelo, imijelo engaphantsi komhlaba ehambisa amanzi amdaka, okanye enye indlela yohambiso lwamanzi; kunye
- Necandelo 21 (g) ukulahlwa kwenkunkuma ngendlela enokuthi ibe negalelo elingelihlanga kwindawo yamanzi.

Ngokwemimiselo yoMthetho Wophuhliso Lwezibonelelo zeziMboiwa nePetroliyam, ka-2002 (uMthetho onguNombolo 28 ka-2002) (MPRDA), njengoko ulungiswe, kwakunye noMiniselo Yophuhliso Lwezibonelelo zeziMboiwa noPetroliyam okwiseziso sikahulumente esingunombolo GNR 527 somhla we-23 ku-Epreli 2004, iSebe Lemicimbi Yamanzi (DWA), ngenxa yesiseziso sikahulumente esingunombolo GNR . 762 somhla we-25 kuJuni 2004, ukuzifingi iinkqubo zofiko kwasicelo kwakunye nokwamkelwa kwamalungelo okanye iimvume ngokwemiqandelelo u-16, 20, 22, kunye no-27 oMthetho i-MPRDA, Nangona kunjalo ke kodwa, ngokwecandelo 10(2) loMthetho i-MPRDA, iSebe Lemicimbi Yamanzi kudingeka ukuba ligulunge iNkqubo yoLawulo lokusiNgqongileyo (EMP) ukuze yamkelwe ngokwemimiselo yecandelo 39 (4) lalo Mthetho.

ISebe Lemicimbi Yamanzi liyumba i-ILISO Consulting (Pty) Ltd ukuba ibe yiyo eyenza uVavanyo lweMpembelelo kokusiNgqongileyo kwakunye neqhuba inkqubo yokuqinisekisa ukuthatheka kwemixholiso nokubandakanywa koluntu. Amaqela achaphazelekayo adinga ukuqiqi nemikcukacha ezingaphezulu malunga neprojekthi angatshatisa njengegela elinomtla nelibandakanyekayo ngokuthi aqhagamshelane no-Kim Dalhuijsen ngeposi, umnxeba, ifeksi okanye i-imeyile kwezi nkcukacha zoqhagamshelwano zilapha ngezantsi zingekapheli iintsuku eziyi-14 emva kokuba sikhutshiwe esi saziso.

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Ifeksi: (012) 665 1606

ILISO consulting

Figure 27: Advertisement in the Daily Dispatch (isiXhosa)

7.7 PUBLIC COMMENT PERIOD FOR DRAFT AND FINAL REPORTS

7.7.1 Draft Scoping Report

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 DWS 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
Lalini	Mhlontlo Local Municipality Technical department Office 26 96 Church Street Qumbu 5180

Three public meetings were held during the week of the 12th of May 2014 near the proposed Ntabelanga Dam site (in Siqhungqwini), in Tsolo and in Lalini. The purpose of these meetings was to engage with the public, provide information and allow stakeholders to raise any comments or objections. Minutes from these meetings are available in **Appendix B**.

7.7.2 Final Scoping Report

The Final Scoping Report was made available electronically for a 21-day public comment period.

7.7.3 Draft Environmental Impact Assessment Report

The draft EIR was made available to I&APs for comment from the DWS website (http://www.dwa.gov.za/projects.aspx) and hard copies were also available for perusal from the following venues for a thirty (30) day comment period, held from 24 November to 12 January 2015.

Location	Venue
East London	Mrs Glenn Hartwig East London 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
Qumbu	Mhlontlo Local Municipality Technical department Office 26 96 Church Street Qumbu 5180
Maclear	Mr Khayalethu Gashi Elundini Local Municipality 1 Seller Street Maclear 5480

A round of public meetings took place during the last week of November 2014 in order to provide an update on the project and report back to stakeholders on the findings of the Impact Assessment phase. Meetings were held in the following venues (minutes from these meetings are available in **Appendix B**):

	Location	**Venue**	**Date and Time**
Ntabelanga Dam and Irrigation farms	Thambekeni	Headman Mthethunzima's household	Monday, 24 November 2014 10:00
	Mpetsheni	Mpetsheni Church	Monday, 24 November 2014 14:00
	Shukunxa	Shukunxa Church	Tuesday 25 November 2014 10:00
	Ngxoto	Ngxoto Junior Secondary School	Tuesday 25 November 2014 14:00
	Tsolo	Tsolo Town Hall	Wednesday, 26 November 2014 10:00
	Siqungqwini	Siqungqwini Junior Secondary School	Wednesday, 26 November 2014 14:00
Lalini Dam and Hydropower	Lalini	Lalini Junior Secondary School	Thursday, 27 November 2014 10:00
	Lotana	Lotana Church	Thursday, 27 November 2014 14:00

	Shawbury/ KuNotsweleba	Chief Veco's household	Friday, 28 November 2014 10:00
	Siqikini	Siqikini Junior Secondary School	Friday, 28 November 2014 14:00

7.7.4 Final Environmental Impact Assessment Report

The Final EIA Report will be made available electronically for a 21-day public comment period.

7.8 FOCUS GROUP MEETINGS

A focus group meeting with the Department of Agriculture, Forestry and Fisheries was held on 20 May 2014 to discuss agriculture and land tenure issues associated with the project.

Between 28 June and 11 July 2014 a field trip was undertaken across the project region. During this time various meetings were held as indicated below.

Date	**Venue**
28 June 2014	Shukunxa Village
30 June 2014	Ngqongweni
10 July 2014	Mpetsheni
10 July 2014	Sibomvaneni Village
10 July 2014	Ntabelanga Dam Basin
10 July 2014	Mawasa Location
11 July 2014	Lalini Dam Basin

In addition, focus group meetings were held with the Department of Energy (18 July 2014) and Nyandeni LM (30 September 2014).

Focus Group Meetings were also held with representatives of the Mhlontlo and Elundini Local Municipalities, as well as the Traditional Leaders and the Ward Councillors of the towns that have been identified as being directly affected by the project. The purpose was to inform the Traditional Leaders and Ward Councillors of the status of the Environmental Impact Assessment as well as to obtain guidance in formulating a Relocation Policy Framework for the Environmental Management Programme.

7.9 NEWSLETTERS

A Newsletter (Newsletter #3) was compiled, providing information on the Environmental Impact Assessment process, progress to date and the way forward.

The newsletter was distributed electronically to all registered stakeholders on 12 August 2014. In addition, 150 copies (in English) and 350 copies (in isiXhosa) of the newsletter were printed and distributed to local communities by the local facilitators within the project area on 19 and 20 August 2014. Hard copies were also left at the relevant municipal offices.

A follow up newsletter (Newsletter #4) will be compiled and distributed once a decision has been made regarding the application for environmental authorisation.

7.10 ISSUES AND RESPONSES REPORT

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

7.11 KEY ISSUES

The key issues that have been raised during the public participation process are summarised below.

1. The dams will store water that would previously have flowed down the Tsitsa River into the Mzimvubu River and ultimately through the estuary to the sea. Some water will be abstracted from the dams for, primarily, domestic and agricultural use. Other water will be released from the dams for power generation in a way that alters the natural flow regime. At some times the rivers will therefore have less water than natural and at other times they will have more. Changes to the flow regimes in rivers, especially where potentially sensitive area such as the Tsitsa Falls and associated pristine gorge downstream of the proposed Lalini Dam and the Mzimvubu estuary, could impact on the aquatic and riparian ecosystems and associated ecosystem services provided by the rivers. The impact of the proposed altered flow regimes in the rivers on the **aquatic and riparian ecosystems** therefore need to be assessed.

2. The Mzimvubu Project is located in a part of the country that currently experience severe soil erosion with associated high **sediment** levels in the rivers. Concern has been raised that this condition will cause the dams to silt up, reducing their yield and affecting the functioning of the equipment (e.g. abstraction and water treatment). Impacts on the river channel and water quality immediately downstream of the dams, where water carrying less sediment than when entering the dam is released, are also envisaged.

3. When a dam is constructed the land that will be inundated by water will be permanently altered and the current functionality will be lost (and replaced with a lake). The proposed dams are expected to inundate 10.34 km^2 of wetlands,

grassland and savannah habitats as well as man-made structures, roads and powerlines. The plants and animals that currently depend on the river, wetland, grassland or savannah habitats will either have to move/be moved to use other resources or will die. The significance of this **ecological impact** needs to be assessed.

4. Some people are currently living and providing for their existence from the resources in the areas that will be inundated by water or replaced by infrastructure. These families will have to be **relocated** to new homes and **compensated** for their loss of livelihoods. This is usually a socially disruptive and personally traumatic experience that needs careful attention and management.

5. The Mzimvubu Project is expected to cost R 12.5 billion. The **financial and economic viability** has been questioned. Financial viability implies the project is evaluated at market prices. Economic viability implies that the project is evaluated at prices which reflect the relative scarcity of inputs and outputs. The main purpose of this project is to contribute to the development of an impoverished rural area of the Eastern Cape by making water available to the area. The investment by government must therefore be evaluated against the background of the projected contribution to social and economic development. A project of this nature may make economic sense, but not be affordable. In such a case government's continuous grants and subsidies may be necessary. The EIA study is not the right vehicle to determine financial viability and affordability. An economic cost benefit analysis (ECBA) was therefore done as part of this EIA and not a financial cost benefit analysis. The funding of the project is an important issue and during this analysis it became clear that it will take up to 10 years to attain maximum production from the irrigation scheme and possibly financial profitability. Financial viability can only be attained by grant funding on an annual basis without any repayment pre-conditions. The high poverty levels in the project area are such that it is improbable that more than 10% of the domestic users will be able to pay for the water. Therefore, a long term annual subsidy will have to be provided for. The Lalini Dam Hydro-Electricity Generation is financially viable and can be funded by loans.

6. The specific area of the Eastern Cape Province has a large untapped **agricultural potential**. Any agricultural development based on commercial principles will, however, be faced with a number of stumbling blocks. These include the problem of land ownership, shortage of management skills for commercial farming, available markets, and support structures such as production inputs and funding.

7. A large infrastructure project of this nature will result in an influx of people and consequently increase the demand for municipal services such as water, electricity, roads, sewerage, housing and social services (clinics, schools etc.).

This will place a significant burden on an already over-extended **Local government**.

8. There is a need for better roads in the study area. **Road upgrades** are especially welcomed by communities.

9. As some roads and bridges will be inundated by the dams, road realignments and new bridges will be required. This will influence travel routes, distances and travel times. Where the proposed realignments will result in significant increases in **travel times and distances** (e.g. travelling from the villages north of Ntabelanga Dam to Maclear), alternative routes must be provided in order to maintain or improve the current level of service in the areas concerned.

10. Community members recognize that this project has the potential to generate opportunities for **employment**. Community members requested that **skills development** programmes be implemented in the area before construction commences so that the recipient communities can equip themselves to take up these opportunities. Community members also requested advice on **what courses/qualifications** at what institutions would be best to embark on to prepare themselves for the upcoming opportunities.