

# ***NCWABENI: OFF-CHANNEL STORAGE DAM***

## **Socio-Economic Report**

**FINAL**

---

**June 2012**

**May 2012**



---

P.O. BOX 1673

23 Jan Hofmeyer Road

Tel: 031 266 3884

SUNNINGHILL

Westville

Fax: 031 266 5287

2157

3629

Email: [info@nema.co.za](mailto:info@nema.co.za)

---

**Copyright Nema Consulting 2012**

## EXECUTIVE SUMMARY

Currently, the Mzimkhulu River, situated in KwaZulu-Natal, is a non-regulated source of water supply to the coastal Hiberdeen area up to Port Shepstone. Water is abstracted at St. Helen's Rock abstraction works near Port Shepstone and is pumped into the water treatment works. From there the water is distributed to the various user nodes.

It has been predicted that there will be a growth in water requirements from the Mzimkhulu Regional Water Supply System. This is largely attributed to current and planned increases in the level of service for the rural population.

In order to meet these growth requirements, the Department of Water Affairs (DWA) has proposed the construction of an off-channel storage (OCS) dam in one of the tributaries to the Mzimkhulu River.

Two alternative sites were identified for the OCS dam, both situated in the Umzumbe Local Municipality, north west of Port Shepstone. The sites are situated in the Ncwabeni River (Alternative 2D) and the Gugamela River (Alternative D3A).

This Socio-Economic Impact Assessment (SEIA) forms part of the Environmental Impact Assessment for the proposed Ncwabeni off-channel storage dam. The study is aimed at identifying which of the two alternatives are preferred from a social and economic point of view. The scope of analysis was limited to a one kilometre buffer around each of the proposed alternatives. Thus the direct effect of the dam on the surrounding community was analysed.

In order to compile the SEIA, both desktop analysis and a site visit were undertaken. The site visit took place on the 6 June 2012 and was conducted by Nemai Consulting with the assistance of Ugu District Municipality, Sizwe Malinga and Noncedo Gidimisani, and iNduna of Nyamande, Mr Ngwazi. The aim of the visit was to identify the homesteads that would require relocation and those that required both relocation and resettlement of persons.

A status quo of the area was established, which provided an understanding of the demographics, economy and accessibility to social services in the area. The population within the one kilometre buffer region is 4 300, of which 42 percent are youth under 14 years of age. Education level and municipal services are low in the area with little access to the necessary facilities. There was no school or health facility identified within the one kilometre buffer. Unemployment in area is high which has contributed to the outward migration of males from the areas leaving an imbalance in the number of males and females in the areas.

The impacts of the dam were classified into two large categories, namely major impacts and other impacts. Major impacts identified were direct impacts that would affect the dam and surrounding community causing a positive, neutral or negative disturbance to the current economic and social structure. Other impacts of the dam were identified based on assumptions and potential impacts of the dam. Most of these potential impacts require Ugu District Municipality or Umzumbe Local Municipality to provide clear plans on whether or not water supply to the communities will be impacted as a result of the dam and how it would be impacted. These impacts are important impacts from both a social and economic impact on

the community as well as the broader economy, but the analysis falls beyond the scope of the document hence they were discussed very briefly.

Finally a comparative summary was drawn on the two alternative sites. It was found that should the dam be constructed on site D2: Ncwabeni there will be less economic and social disturbance than at D3A Gugamela. The table below is a summary of the impacts identified and which alternative was preferred.

Aspect	D2: Ncwabeni	D3A: Gugamela
<b>Influx of workers</b>	✓ No Preference	✓ No Preference
<b>Relocation and resettlement</b>	✓ Preferred Site	× Not preferred
<b>SMME Opportunities</b>	✓ No Preference	✓ No Preference
<b>Employment</b>	✓ No Preference	✓ No Preference
<b>Access</b>	✓ Preferred Site	× Not preferred
Industry	✓ No Preference	✓ No Preference
Access to water and Health	✓ No Preference	✓ No Preference
Agriculture	✓ Preferred Site	× Not preferred
Tourism and Recreation	✓ No Preference	✓ No Preference
Property Values	✓ No Preference	✓ No Preference
Education	✓ No Preference	✓ No Preference
<b>Preferred</b>	✓ Preferred Site	× Not the Preferred Site

## TABLE OF CONTENTS

List of Tables .....	6
List of Figures .....	6
Introduction .....	7
Structure of the Report .....	7
About SEIA Reports .....	7
Approach .....	7
Desktop .....	8
Site Visit .....	8
Assumptions and limitations .....	8
Legislative Background .....	8
Constitution of the Republic of South Africa (Act 108 of 1996) .....	8
Traditional leadership .....	9
National Environmental Management (Act 107 of 1998) .....	10
Promotion of Administrative Justice Act (Act 3 of 2000) .....	11
Development Facilitation Act (Act 67 of 1995) .....	11
KwaZulu-Natal Traditional Leadership and Governance Act (Act 5 of 2005) .....	12
Ingonyama Trust Act (Act 3 of 1994) .....	14
Free Basic Water Policy .....	14
Communal Land Rights Act 11 of 2004 .....	14
National Heritage Resources Act, Number 25 of 1999 .....	15
Overview of the Operation .....	15
Location of the Operation .....	15
Alternatives .....	16
Site D2: Ncwabeni .....	17
Site D3A: Gugamela .....	18
Overview of Affected Communities .....	19

Demographics .....	21
Population.....	21
Age and Gender.....	21
Dwelling type .....	22
Economy and Livelihoods.....	23
Employment.....	24
Industry.....	24
Health and Health Infrastructure .....	27
Education .....	27
Utilities, Infrastructure and Services .....	28
Water and sanitation .....	28
Security.....	29
Transport .....	30
Relocation and Resettlement.....	30
Social and Economic Impacts .....	34
Influx of workers .....	36
Mitigation and Impact Table .....	36
Relocation and Resettlement.....	37
Mitigation and Impact Table .....	38
SMME Opportunities .....	38
Mitigation and Impact Table .....	39
Employment .....	39
Mitigation and Impact Table .....	40
Access.....	40
Mitigation and Impact Table .....	41
Other Impacts.....	41
Industry.....	41
Access to Water and Health.....	41

Agriculture.....	42
Tourism and Recreation.....	43
Property Value .....	43
Education.....	43
Comparative analysis of alternatives .....	43

## LIST OF TABLES

Table 1: Municipal Spatial Classification System (Business Trust, 2007) .....	20
Table 2: Population Statistics (Statistics South Africa, 2001).....	21
Table 3: Age and Gender Profile (Statistics South Africa, 2001) .....	22
Table 4: Type of dwelling and the number of occupants per household (Statistics South Africa, 2001) .....	23
Table 5: Employment data for Umzumbe LM (Quantec Research (Pty) Ltd, 2012) .....	24
Table 6: Employment per Industry (Statistics South Africa, 2001) .....	26
Table 7: Education for persons over age 20 (Statistics South Africa, 2001) .....	28
Table 8: Household access to water and sanitation (Statistics South Africa, 2001) .....	29
Table 9: Inhabitants of four houses visited .....	33

## LIST OF FIGURES

Figure 1: Locality Map.....	16
Figure 2: Two Alternative Sites.....	17
Figure 3: Locality Map of the Study Area.....	20
Figure 4: Gross Value Added of Umzumbe Local Municipality (Quantec Research (Pty) Ltd, 2012) .....	26
Figure 5: Google Earth image of the D859 .....	30
Figure 6: Google Earth Image of all homesteads in the study area .....	31
Figure 7: Google Earth Image of all homesteads in the proposed dam basins .....	32
Figure 8: Google Earth Image of the homesteads requiring relocation .....	33

## INTRODUCTION

The Mzimkhulu Water Supply System (MWSS), which forms part of the KwaZulu Natal (KZN) Lower South Coast System, supplies water to all urban coastal towns from Hibberdene to Ramsgate, as well as to many rural inland settlements such as Fairview, Kwa-Madlala, Louisiana, Bhoboyi, Murchison, KwaNdwalane, Izontsha, Kwa Mavundla, Gamalakhe, etc, with a total estimated present rural population size of about 152 450.

A significant growth in the water requirements for the system has been predicted through various previous studies, and a substantial portion of that growth can be associated with the increase of the level of service for the rural population as well as the planned extension of the system to cover additional rural areas, which are not presently supplied with water from the scheme.

The proposed Ncwabeni Off-Channel Storage (OCS) Dam is seen as a solution to the predicted growth in water requirements. This Socio-Economic Impact Assessment serves as part of the Environmental Impact Assessment conduction by Nema Consulting.

## STRUCTURE OF THE REPORT

The structure of the report is as follows:

- ❖ Introduction
- ❖ Legislative Background
- ❖ Overview of the Operation
- ❖ Overview of Affected Communities
- ❖ Social and Economic Impacts
- ❖ Comparative analysis of alternatives

## ABOUT SEIA REPORTS

The International Association for Impact Assessment (2003) states that Social Impact Assessment includes the processes of analysing, monitoring and managing the intended and unintended consequences of planned interventions (policies, programs, plans, projects) and any social change processes invoked by these interventions to create a more sustainable and equitable biophysical and human environment (Vanclay, 1999)

The analysis of impacts will be performed for two stages, the construction phase and operational phase. This will help to determine the loss/gain on welfare, as well as the extent of impact on the economy in the area.

SEIA is a methodology used to assess the social impacts and economic impacts of planned interventions or events, and to develop strategies for the ongoing monitoring and management of those impacts (International Association for Impact Assessment, 2003). Social changes implemented through projects can multiply into more projects and change. These impacts and changes can either be positive or negative (Vanclay, 1999).

## APPROACH

---

## DESKTOP

The Census 2001 data is the most comprehensive dataset available for the area, and despite it representing data that is eleven years old, it is currently the best data at hand. The analysis will be conducted using the Census 2001 subplace as the smallest geographic unit of measure. The subplaces have been extracted using the project GIS, and the data for the affected sub places will be presented in the table and figures below.

Additional demographic and service delivery information was taken from the Community Survey 2007.

The Community Survey 2007 was conducted by Statistics South Africa and was intended as an update on selected Census 2001 data. This survey methodology relied upon a sample taken of the population in each sub place, and was not an enumeration such as Census 2001. Thus, this survey is more updated, but less comprehensive, than the figures derived from Census 2001.

---

## SITE VISIT

A site visit was undertaken by Nema Consulting on the 6 June 2012. The inhabited homesteads that will require both relocation and resettlement were visited as part of an assessment on the impacts of the proposed dam.

## ASSUMPTIONS AND LIMITATIONS

This report has the following assumptions and limitations

- ❖ Data used for the demographic profile was data from Statistics South Africa 2001. This is eleven years old but is the only comprehensive data set available thus results may be skewed.
- ❖ The study area is defined as Sunduza, Ncane and Nyamande. Unfortunately no data allows s to split the areas further hence the results are skewed. Sunduza is densely populated in relation to Ncane and Nyamande, a more comprehensive spatial data would have allowed this study to reflect the demographics more accurately.

## LEGISLATIVE BACKGROUND

### CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA (ACT 108 OF 1996)

As contained in the Constitution the rights of all South African's are protected by Chapter 2 of the Bill of Rights. These rights form the basis of democracy in South Africa. The Bill of Rights applies to all law, and binds the Legislature, the Executive, the Judiciary and all organs of state.

Key rights in the Bill that have a bearing on social rights and issues include:

- ❖ Life: Everyone has the right to life;
- ❖ Human Dignity: Everyone has inherent dignity and the right to have their dignity respected and protected;



- ❖ Equality: Everyone is equal before the law and has the right to equal protection and benefit from the law;
- ❖ Freedom of religion, belief and opinion: Everyone has the right of freedom of conscience, religion, thought, belief and opinion;
- ❖ Environment: 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 and secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development;
- ❖ Property: No person may be deprived of property except in terms of the law of general application, and no law may permit arbitrary deprivation of property. Property may be expropriated only in terms of the law of general application for a public purpose or in the public interest. The public interest includes South Africa's commitment to land reform and to reforms to bring about equitable access to all South Africa's natural resources. Property is not limited to land;
- ❖ Health care, food, water and social security: Everyone has the right to have access to health care services, including reproductive health care, sufficient food and water and social security, including, if they are unable to support themselves and their dependents, appropriate social assistance;
- ❖ Language and culture: Everyone has the right to use the language and participate in the cultural life of their choice, but no one exercising these rights may do so in a manner inconsistent with any provision of the Bill of Rights;
- ❖ Cultural, religious and linguistic communities: Persons belonging to cultural, religious or linguistic communities may not be denied the right, with other members of the that community to enjoy their culture, practice their religion and use their language, and to form, join and maintain cultural, religious and linguistic associations and other organs of civil society. These rights must be exercised in a manner that is consistent with any provision in the Bill of Rights;
- ❖ Access to information: Everyone has the right of access to any information held by the state and any information that is held by another person and that is required for the exercise or protection of any rights; and,
- ❖ Just administrative action: 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. This right has been given effect via the Promotion of Administrative Justice Act (PAJA).

---

## TRADITIONAL LEADERSHIP

- ❖ Recognition
  - a) The institution, status and role of traditional leadership, according to customary law, are recognised, subject to the Constitution.

- b) A traditional authority that observes a system of customary law may function subject to any applicable legislation and customs, which includes amendments to, or repeal of, that legislation or those customs.
  - c) The courts must apply customary law when that law is applicable, subject to the Constitution and any legislation that specifically deals with customary law.
- ❖ Role of traditional leaders
- a) National legislation may provide for a role for traditional leadership as an institution at local level on matters affecting local communities.
  - b) To deal with matters relating to traditional leadership, the role of traditional leaders, customary law and the customs of communities observing a system of customary law
    1. National or provincial legislation may provide for the establishment of houses of traditional leaders; and
    2. National legislation may establish a council of

## NATIONAL ENVIRONMENTAL MANAGEMENT (ACT 107 OF 1998)

The National Environmental Management Act (NEMA) and the principles contained therein have a significant influence on the need to identify and assess socio-economic impacts. The NEMA principles are based on the basic rights as set out in Chapter 2 (Bill of Rights) of the Constitution.

According to Barber (2007:16) the following NEMA principles have an important impact on social issues:

- ❖ Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably;
- ❖ Development must be socially, environmentally and economically sustainable;
- ❖ Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option;
- ❖ Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons;
- ❖ Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination;
- ❖ The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured;

- ❖ Decisions must take into account the interests, needs and values of all interested
- ❖ and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge;
- ❖ Community well-being and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means;
- ❖ The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in light of such consideration and assessment;
- ❖ The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected;
- ❖ Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law;
- ❖ The environment is held in public trust for the people. The beneficial use of environmental resources must serve the public interest and the environment must be protected as the peoples' common heritage; and,
- ❖ The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.

#### PROMOTION OF ADMINISTRATIVE JUSTICE ACT (ACT 3 OF 2000)

As stated in the Guideline Document for involving Socio-Economic Impacts Assessment Specialists in the EIA process which was prepared in February, 2007, by Tony Barbour for the Department of Environmental Affairs and Development Planning, Western Cape Province, in terms of the Bill of Rights everyone has the right to administrative action that is lawful, reasonable and procedurally fair. This right has been given effect via the Promotion of Administrative Justice Act (PAJA).

Barbour further contends that provisions of the PAJA apply to all decisions of all organs of state exercising public power or performing a public function in terms of any legislation that adversely affects the rights of any person. The Act also prescribes the procedure that must be followed by an organ of state when it takes decisions.

If an organ of state implements a decision that impacts on an individual or community without granting them an opportunity to comment, the ultimate decision will be unlawful and may be set aside. The Act also imposes a duty on organs of state to explain and justify the manner in which they have reached their decisions and, in the case of social issues, how these issues were considered in the decision-making process.

#### DEVELOPMENT FACILITATION ACT (ACT 67 OF 1995)

Concerning land development various principles are set out in Section 3 of the DFA. A few of these principles are briefly highlighted below, as contained in the Guideline Document for involving Socio-Economic Impacts Assessment Specialists in the EIA process which was

prepared in February, 2007, by Tony Barbour for the Department of Environmental Affairs and Development Planning, Western Cape Province (Barbour, 2007):

- ❖ Promoting the integration of the social, economic, institutional and physical aspects of land development;
- ❖ Promoting integrated land development in rural and urban areas in support of each other;
- ❖ Promoting the availability of residential and employment opportunities in close proximity to or integrated with each other;
- ❖ Optimising the use of existing resources including such resources relating to agriculture, land, minerals, bulk infrastructure, roads, transportation and social facilities;
- ❖ Promoting a diverse combination of land uses, also at the level of individual erven or subdivisions of land
- ❖ Discouraging the phenomenon of "urban sprawl" in urban areas and contributing to the development of more compact towns and cities;
- ❖ Contributing to the correction of the historically distorted spatial patterns of settlement in the Republic and to the optimum use of existing infrastructure in excess of current needs;
- ❖ Encouraging environmentally sustainable land development practices and processes;
- ❖ Promoting land development which is within the fiscal, institutional and administrative means of the Republic;
- ❖ Promoting the establishment of viable communities; and,
- ❖ Promoting sustained protection of the environment.

#### KWAZULU-NATAL TRADITIONAL LEADERSHIP AND GOVERNANCE ACT (ACT 5 OF 2005)

The KwaZulu-Natal Provincial Government recognises traditional communities if it is subject to the system of traditional leadership in terms of that community's customs and observes a system of customary law.

#### Partnership between traditional councils and municipalities

- ❖ The Provincial Government must promote partnerships between municipalities and traditional councils through legislative and other measures.
- ❖ The partnership envisaged in subsection (1) must be based on the principle of mutual respect and recognition of the status and roles of the parties.
- ❖ Without derogating from the generality of subsection (1), a traditional council may submit a proposal to the municipal council to adopt a by-law, which the traditional council may consider to be necessary in respect of any matter directly affecting the area of its jurisdiction.

- ❖ The proposal envisaged in subsection (3), may be accompanied by a draft of the proposed by-law and must be motivated in writing
- ❖ The municipal council must consider the proposed by-law at its next meeting and may request comments from its municipal manager.
- ❖ In the event that the municipal council does not accept the proposed by-law, the municipal council must, in writing, inform the traditional council of its decision and must give reasons for its decision.

#### Support to traditional councils

- ❖ The Provincial Government or the relevant municipal council may adopt such legislative or other measures as may be necessary to support and strengthen the capacity of traditional councils to fulfill their functions.
- ❖ The Provincial Government or the relevant municipal council may, within that sphere of government's means, give traditional councils support to enable the traditional councils to perform their functions.
- ❖ The support envisaged in this section may include transport assistance where it is feasible taking into consideration budgetary constraints.

#### Functions of traditional councils

- ❖ to administer the affairs of the traditional community in accordance with customs and tradition;
- ❖ to assist, support and guide traditional leaders in the performance of their functions;
- ❖ to work together with municipalities in the identification of community needs;
- ❖ to facilitate the involvement of the traditional community in the development or amendment of the integrated development plan of a municipality in whose areas that community resides;
- ❖ to recommend, after consultation with the relevant Local House and the Provincial House of Traditional Leaders, appropriate interventions to government that will contribute to development and service delivery within the area of jurisdiction of the traditional council;
- ❖ to participate in the development of policy and legislation at local level;
- ❖ to participate in the development programmes of municipalities and of the provincial and national spheres of government;
- ❖ to promote the ideals of co-operative governance, integrated development planning, sustainable development and service delivery;
- ❖ to promote indigenous knowledge systems for sustainable development and disaster management;
- ❖ to alert any relevant municipality to any hazard or calamity that threatens the area of jurisdiction of the traditional council in question, or the well-being of people living in such area of jurisdiction, and to contribute to disaster management in general;
- ❖ to share information and co-operate with other traditional councils;
- ❖ to perform the functions conferred by customary law, customs and statutory law consistent with the Constitution.
- ❖ (m) to uphold the values of the traditional community;
- ❖ (n) to reject and proscribe such practices as the sowing of divisions based on tribalism;
- ❖ (o) to promote peace and stability amongst members of traditional communities; and

- ❖ (p) to promote social cohesion within the traditional community.

#### INGONYAMA TRUST ACT (ACT 3 OF 1994)

The Ingonyama Trust was established by the KZN-Ingonyama Trust Act. This legislation Transferred land under jurisdiction of the former KwaZulu Government to the Ingonyama Trust.

The Ingonyama Trust was established in terms of the KwaZuluNatal Ingonyama Trust Act, (Act 3 of 1994). This Act was amended by National Act 9 of 1997. Among other things, the KwaZulu-Natal Ingonyama Trust Amendment Act provided for the establishment of the Ingonyama Trust Board. The primary objective of the Board is to function as landowner-in-law of Ingonyama Trust land, which is in extent of some 2.7 million hectares spread throughout KwaZulu-Natal.

This legislation provides for His Majesty the King to be the sole trustee but in terms of the 1997 amendments the Board came into operation on the 2 October 1998 to actually administer the affairs of the Trust. The Chairperson of the Board is His Majesty the King or his nominee. The members are appointed by the Minister, subject to consultative procedures laid down in the Act.

The core business of the Trust is to manage the land for the “material benefit and social well being of the individual members of the tribes”. However, no alienation or burdening of the land may occur without the written permission of the relevant traditional or community authority.

#### FREE BASIC WATER POLICY

The Free Basic Water Policy was introduced in 2000 recognising the importance of having a clean and adequate water supply. The policy allows that every household to get 6 000 litres of water per month at no cost within a 200 metre distance from a household (Hall, Leatt, & Monson, 2006).

It is up to municipalities to ensure that the policy is implemented, as three targeting options are provided:

1. Rising Block Tariff: with access to taps and meters, the free 6 000 litres (block) is provided to water users and there after subsequent usage (or block) is billed at increasing rates for increasing consumption.
2. Targeted Credits or Subsidies: where people are considered “indigent” a subsidies amount is credited to their bill monthly.
3. Service Level Targeting: this option limits access of water to the minimum 6 000 litres per month. This is provided for either through a communal tap system which is within the 200 meter service level.

#### COMMUNAL LAND RIGHTS ACT 11 OF 2004

The Communal Land Act serves to provide legal security of tenure by transferring communal land to communities. It also aims to transfer old order rights to new order rights.

Old order rights are defined as tenure or other right in or to communal land which

- ❖ is formal or informal;
- ❖ is registered or unregistered;
- ❖ derives from or is recognised by law, including customary law, practice or usage; and
- ❖ exists immediately prior to a determination by the Minister in terms of section 18, but does not include–
  - any right or interest of a tenant, labour tenant, sharecropper or employee if such right or interest is purely of a contractual nature; and
  - any right or interest based purely on temporary permission granted by the owner or lawful occupier of the land in question, on the basis that such permission may at any time be withdrawn by such owner or lawful occupier.

The Act also provides guidelines on the transfer of communal land which would take place, which would include compensation for transfer of land rights.

## NATIONAL HERITAGE RESOURCES ACT, NUMBER 25 OF 1999

The National Heritage Resources Act has listed the South African Heritage Resources Agency (SAHRA) the responsibility to conserve and care for burial grounds and graves. Without the permission and permit provided by SAHRA, there can be no removal of graves. The Act also provides guidelines should graves require removal. These include consultation with communities and individuals who have an interest in the graves as well as an agreement on the future of the graves after removal.

## OVERVIEW OF THE OPERATION

*The operation of either OCS dam option as part of the greater supply system will be essentially the same. Water will be abstracted from the Mzimkhulu River at St Helen's Rock for treatment and supply as is currently done. The OCS dam, to be orientated approximately 26 to 28km upstream, will be filled by water abstracted from a new abstraction weir on the Mzimkhulu River during the high flow months. Water will then be released during the low flow months to augment the volume that can be abstracted at St Helens Rock. Water will only be released from the OCS dam for abstraction at St Helen's Rock.*

*Although no direct releases will be made for the downstream ecological water requirements and the estuary of the Mzimkhulu River, they will benefit indirectly from the scheme, and have been taken into account. By supplying water for abstraction at St Helen's Rock, the OCS dam will reduce the reliance on, and abstraction of, run-of-river flows, particularly during the low flow months. River flows can then firstly be available for the reserve, and the OCS dam will then augment the volume of water to be abstracted at St Helen's Rock if the balance of the flow in the river is insufficient.*

## LOCATION OF THE OPERATION

The proposed project is located in KwaZulu-Natal Province in the Ugu District Municipality. There are six local municipalities, namely uMuziwabantu LM, Umzumbe LM, Ezingoleni LM, Hibiscus Coast LM, Umdoni LM and uMuziwabantu LM. Both project alternatives will take place in Umzumbe Local Municipality.



Umzumbe Municipality (KZ213) is the largest municipality within the district with a geographic coverage of 1260 square kilometers with approximately 1% being built up/ semi-urban area. The municipal boundary runs along the coast for a short strip between Mthwalume and Hibberdene and then balloons out into the hinterland for approximately 60km.

There are seventeen Traditional Authorities in Umzumbe, spread over 19 municipal wards. The main Traditional Authority is Nyamande which is a registered authority with the Ingonyama Trust Board.

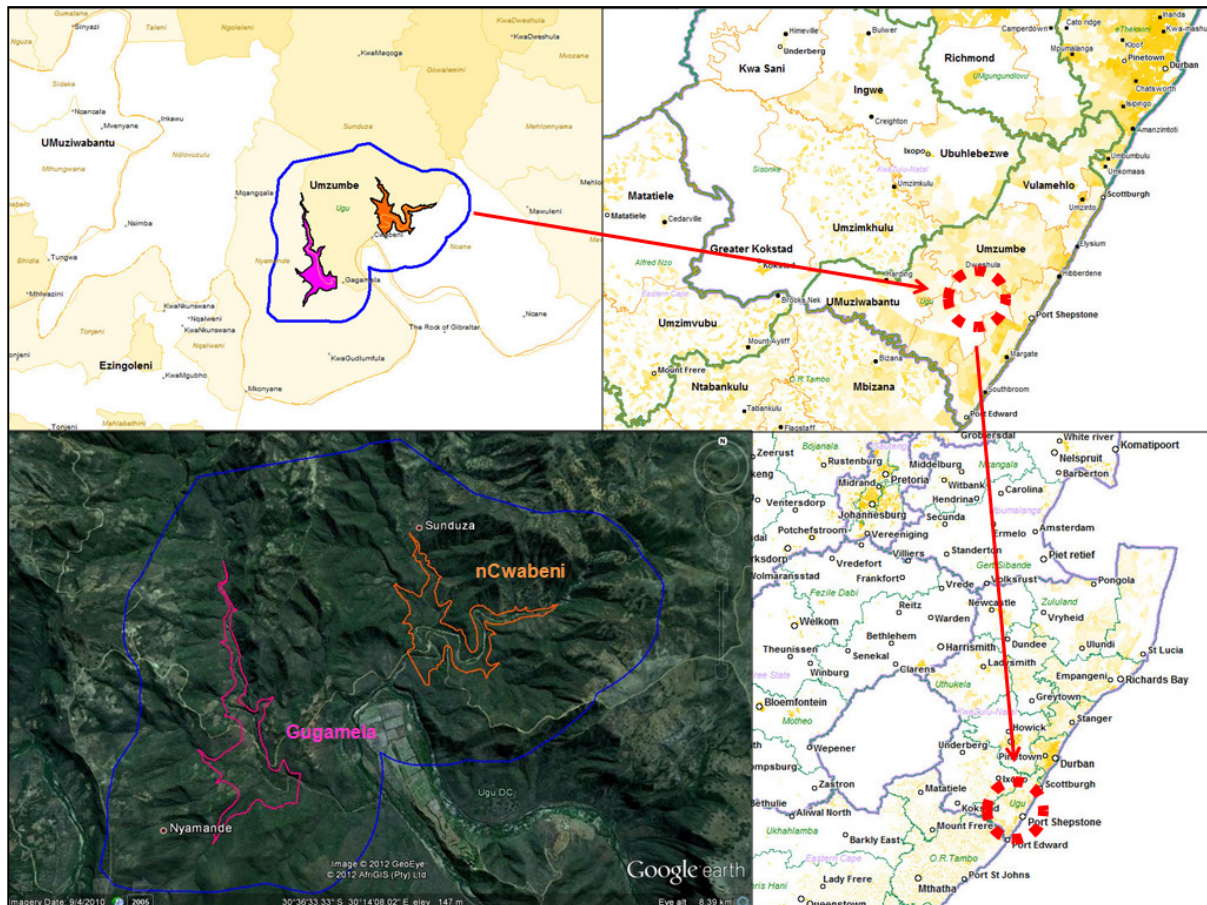


Figure 1: Locality Map

## ALTERNATIVES

There are two preferred sites for the dam. These are described in detail below and can be seen on the map below. They are in less than two km of each other. For the socio-economic analysis, each site will be separated by alternative for the discussion and impacts.



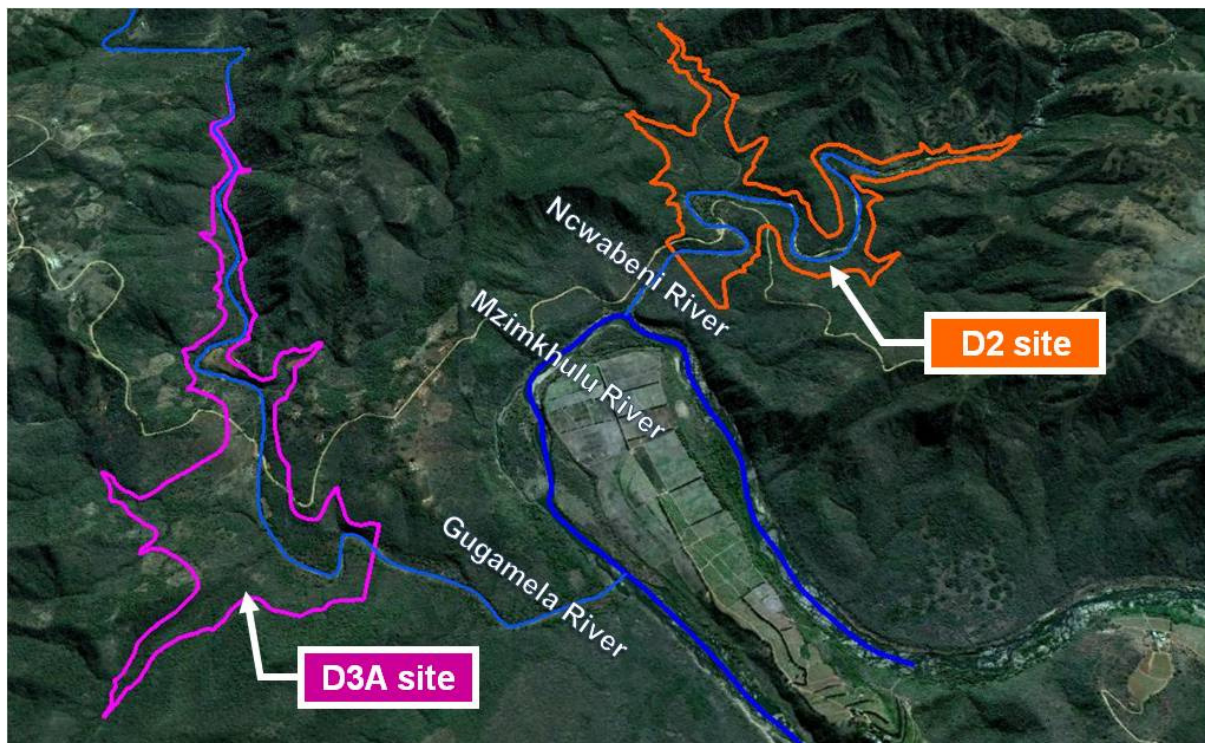


Figure 2: Two Alternative Sites

#### SITE D2: NCWABENI

The Ncwabeni scheme option consists of the following:

- ❖ 45 meter high dam from river bed level on the Ncwabeni River, with associated reservoir storage of approximately 15 million m<sup>3</sup>. The dam will have a multiple level off-take tower to ensure good quality water is release to the downstream environment. Two main dam types are being considered:
  - A rockfill dam with either a concrete face, asphalt core or a bentonite/sand core. This dam type will have a spillway, weir and chute that is routed directly to the Mzimkhulu River from the left flank of the dam; or
  - A roller compacted concrete dam with a central spillway.
- ❖ An abstraction weir on the main Mzimkhulu River approximately 2m high from river bed level. Of the various weir positions considered (see Section 11.3.3), the lower weir position has been selected as the preferred option. The abstraction weir will also be fitted with a gauging facility in order to monitor flow rates in the Mzimkhulu River.
- ❖ An abstraction works to remove silt and sand from the water diverted by the weir. This reduces the quantity of silt pumped into the dam and extends the dam's lifespan. The abstraction works consists of a gravel trap and a stilling basin. The delivery of water through the abstraction and de-silting works will be between 1 and 2 m<sup>3</sup>/s.
- ❖ A pump station located on the left-hand bank (northern bank) of the abstraction weir. Water will be pumped from the abstraction works to the dam via a rising main pipeline. The pump station will deliver up to 1 m<sup>3</sup>/s of water.
- ❖ The pipeline will be routed alongside the slipway chute of the dam (should the rockfill dam be constructed) to reduce impacts on the surrounding landscape. The pipeline

will be approximately 600m long and 900m in diameter. The pipeline will spill the water into the dam approximately 200m upstream of the dam wall to avoid interfering with the dam wall.

- ❖ A re-alignment of the existing district gravel road. 1000m of new road to divert the existing district road around the downstream side of the dam embankment. A further additional 800m of road to provide access to the abstraction works and pumpstation.
- ❖ Three borrow areas:
  - A borrow area inside the proposed dam basin (quarry) to provide 800 000m<sup>3</sup> of rock material for a rockfill embankment as well as aggregate and sand for concrete;
  - A borrow area outside of the dam basin to provide sandy material; and
  - A possible borrow area in the Gugamela basin, however, initial indications are that the required material is not available in sufficient quantity for the particular dam type. This site is still under consideration until the geotechnical and materials investigation has been concluded.
- ❖ A new high voltage power line to bring electrical power to the site. The closest existing power line is the Qwabeni 11 kV line approximately 8km away, north east of the dam site. An alternative option of utilising hydropower already being generated at the Camro Estates farm for pumping has been identified and the feasibility of this is being assessed.

---

#### SITE D3A: GUGAMELA

The alternative scheme, namely the Gugamela scheme option consists of:

1. A 46 meter high dam from river bed level on the Gugamela River, with associated reservoir storage of approximately 17 million m<sup>3</sup>. The dam will have a multiple level off-take tower to ensure good quality water is released to the downstream environment. The same dam type options are being considered for the Gugamela dam as for the Ncwabeni Dam. The spillway of an embankment dam would be a side channel spillway delivering water back into the Gugamela River and not directly into the Mzimkhulu River.
2. An abstraction weir on the main Mzimkhulu River approximately 2m high from river bed level. The uppermost abstraction weir (labelled pre-feasibility site) is the preferred site for the Gugamela scheme option (see Section 11.3.3). The abstraction weir will also be fitted with a gauging facility in order to monitor flow rates in the Mzimkhulu.
3. An abstraction works to remove silt and sand from the water diverted by the weir. This reduces the quantity of silt pumped into the dam and extends the dam's lifespan. The abstraction works consists of a gavel trap and a stilling basin. The delivery of water through the abstraction and de-silting works will be between 1 and 2 m<sup>3</sup>/s.
4. A pump station located on the left-hand bank (northern bank) of the abstraction weir. Water will be pumped from the abstraction works to the dam via a rising main pipeline. The pump station will deliver up to 1 m<sup>3</sup>/s of water.
5. The pipeline will be approximately 1600m long and 900m in diameter. The pipeline will spill the water into the dam approximately 1500m upstream of the dam wall to avoid interfering with the dam wall.

6. A re-alignment of the existing district gravel road. 5000m of new road to divert the existing district road around the downstream side of the dam embankment. A further additional 400m of road to provide access to the abstraction works and pumpstation.
7. Three borrow areas: one inside the proposed dam basin to provide semi-permeable and impermeable material and two outside of the basin to provide 800 000m<sup>3</sup> of rock material for a rock-fill embankment as well as aggregate and sand for concrete, and a second outside of the dam basin to provide sandy material.
8. A new high voltage power line to bring electrical power to the site. The closest existing power line is the Qwabeni 11 kV line approximately 11km away, north east of the dam site. As per the Ncwabeni option, hydropower is being assessed as an option.

Of the final two alternative OCS dam scheme options, the benefits associated with the Ncwabeni OCSS (site D2) include:

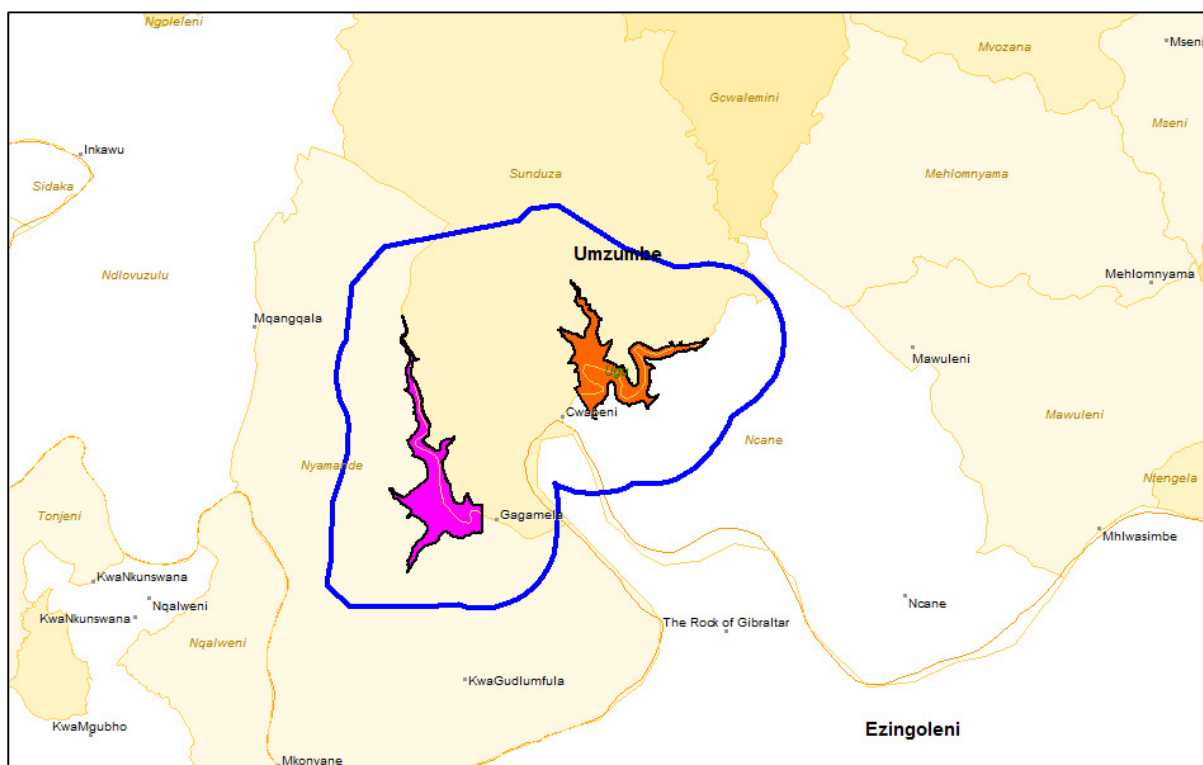
- ❖ Less displacement and relocation of human dwellings and subsistence farmland;
- ❖ Slightly larger incremental catchment;
- ❖ Shorter pipeline and lower pumping head;
- ❖ Less relocation of existing roads;
- ❖ Less likelihood of needing to make releases for ecological water requirements on the short stretches of the tributary rivers below the dams before their confluences with the Mzimkhulu River (200m for the Ncwabeni River vs. 2000m for the Gugamela River).

The dam basin of the proposed D2 on the Ncwabeni River is in a more natural state than that of the proposed D3A site on the Gugamela River, due to some human settlement in the Gugamela dam basin.

## OVERVIEW OF AFFECTED COMMUNITIES

The study area is located in ward 1 of Umzumbe LM. For this study, there will be three subplaces used to conduct the socio-economic analysis. All three sub places namely, Sunduza, Ncane and Nyamande fall within Umzumbe LM.

The map below shows the three study areas that are included in the analysis.



**Figure 3: Locality Map of the Study Area**

This section will serve to provide a status quo analysis on the demographic, economic and infrastructure conditions of the areas. Furthermore each section will also be divided by alternative so that the overview of D2 Ncwabeni and D3A Gugumela are understood separately.

The Department of Co-operative Governance has developed a Municipal Spatial Classification System for local municipalities based on the indicators of functionality, socio-economic profile and backlog status. Its purpose is to inform a differentiated approach to municipalities. The four municipal classifications are (Business Trust, 2007):

1. Class 1: Most vulnerable
2. Class 2: Second most vulnerable
3. Class 3: Second highest performing
4. Class 4: Highest performing

The five local municipalities in the uMkhanyakude District can be classified as follows in Table 6:

**Table 1: Municipal Spatial Classification System (Business Trust, 2007)**

Local Municipality	Classification
Ezinqoleni	Most vulnerable
Hibiscus Coast	Second highest performing
Umdoni	Second highest performing
uMuziwabantu	Most vulnerable
Umzumbe	Most vulnerable

Umzumbe is classified as a “most vulnerable” local municipality which is thus characterised by a weak economy, with high unemployment rates, a vast backlog in the provision of basic services, high poverty rates and high grant dependency rates all of which will be explained below.

## DEMOGRAPHICS

Depending on the demographics of the population in the area, the impact of any activity, commercial, social or other can differ greatly. Demographic analysis aims to understand the community, the population dynamics and the living conditions. Data from Community Survey 2007, Census 2001 and Quantec Research will be used to develop this understanding.

### POPULATION

The study is a portion of one ward hence is rather small in relation to Umzumbe Local Municipality which has a population of 176 918. The population of the site around Ncwabeni is 3 457 while the Gugamela site is slightly higher at 3 986.

**Table 2: Population Statistics (Statistics South Africa, 2001)**

Area	Population
KwaZulu-Natal (CS 2007)	10 259 230
Ugu District Municipality (CS 2007)	709 918
Umzumbe Local Municipality (CS 2007)	176 287
Ncane (Census 2001)	311
Nyamande (Census 2001)	840
Sunduza (Census 2001)	3146
<b>D2: Ncwabeni (Sunduza + Ncane)</b>	<b>3457</b>
<b>D3A: Gugamela (Sunduza + Nyamande)</b>	<b>3986</b>

Umzumbe LM is currently facing a negative population growth rate, which is explained by rapid migration in the municipal IDP. People are moving out of the municipality in search for jobs and better living standards (Umzumbe Local Municipality, 2011).

### AGE AND GENDER

Age and Gender are important to understand the level of economic activity that is likely to occur, as well as aspects of migration and gender-headed households. For both alternatives the percentage age grouping is identical.

The gender ratio is almost the same and both close to that of South Africa on average. In Ncwabeni, the study area is 57 percent female and 43 percent male. In Gugamela the ratio is 56 percent female and 44 percent male.

There is an uneven high population of children and youth in the area. 42 percent of the population are between 0-14 years of age, and 31 percent of the population are 15-34 years of age.



Table 3: Age and Gender Profile (Statistics South Africa, 2001)

Age	Male	Female	Total	Percentage
<b>D2: Ncwabeni</b>				
Children (0-14)	707	735	<b>1442</b>	<b>42%</b>
Youth (15-34)	466	606	<b>1072</b>	<b>31%</b>
Older (35-64)	267	456	<b>723</b>	<b>21%</b>
Retired (65+)	58	164	<b>222</b>	<b>6%</b>
<b>Total</b>	<b>1498</b>	<b>1961</b>	<b>3459</b>	<b>100%</b>
<b>Percentage</b>	<b>43%</b>	<b>57%</b>	<b>100%</b>	
<b>D3A: Gugamela</b>				
Children (0-14)	854	831	<b>1685</b>	<b>42%</b>
Youth (15-34)	524	693	<b>1217</b>	<b>31%</b>
Older (35-64)	300	528	<b>828</b>	<b>21%</b>
Retired (65+)	67	190	<b>257</b>	<b>6%</b>
<b>Total</b>	<b>1745</b>	<b>2242</b>	<b>3987</b>	<b>100%</b>
<b>Percentage</b>	<b>44%</b>	<b>56%</b>	<b>100%</b>	

The difference in male and female population in the area can be explained by migration of males to urban areas in seek of employment. Umzumbe LM on a whole is experiencing negative population growth, particularly among males. The gender gap is most noticeable with among the working population. Of the 15-35 year population only 43 percent are males while this decreases significantly to 36 percent of the age group 35-64.

## DWELLING TYPE

The type of households in the area can be classified into formal or informal housing from Census 2001 data.

Formal housing is classified as (Statistics South Africa, 2001):

- ❖ House or brick structure on a separate stand or yard
- ❖ Flat in block of flats
- ❖ Town/cluster/semi-detached house (simplex; duplex; triplex)
- ❖ House/flat/room in back yard
- ❖ Traditional dwelling/hut/structure made of traditional materials
- ❖ Room/flatlet not in back yard but on shared property
- ❖ Private ship/boat

Informal Dwelling is defined as “a makeshift structure not erected according to approved architectural plans” (Statistics South Africa, 2001):

- ❖ Informal dwelling/shack in back yard
- ❖ Informal dwelling/shack NOT in back yard

The type of dwelling can indicate the type of living conditions and the standard of living of a community. In the study area houses are either formal housing on a separate stand or are traditional housing.

Ncwabeni area has three informal houses and 847 formal houses. Gugamela area has 521 traditional houses and 222 formal houses. There ratio is slightly more even in Ncwabeni which has more formal houses per household than Gugamela.

In the study area, most households have over six occupants in one household. In the Ncwabeni area there are 648 households in total of which 252 households with six or more occupants followed by 124 households with 5 occupants. Only 45 households have just one occupant.

Gugamela has a similar situation, from a total of 749 households, 295 have six or more occupants and 132 have 5 occupants. This number steadily decreases reaching 54 households with just one occupant.

**Table 4: Type of dwelling and the number of occupants per household (Statistics South Africa, 2001)**

Area	Ncane	Nyamande	Sunduza	D2: Ncwabeni	D3A: Gugamela
<b>Type of dwelling</b>					
House on separate stand	62	3	207	<b>269</b>	<b>210</b>
Flat in block of flats	0	3	3	<b>3</b>	<b>6</b>
Town /cluster/	0	0	0	<b>0</b>	<b>0</b>
House/flat/room in back yard	0	0	0	<b>0</b>	<b>0</b>
Traditional dwelling	4	158	363	<b>367</b>	<b>521</b>
Informal dwelling in back yard	0	0	0	<b>0</b>	<b>0</b>
Informal dwelling NOT in back yard	0	3	3	<b>3</b>	<b>6</b>
Room on shared property	0	0	3	<b>3</b>	<b>3</b>
Private ship/boat	0	0	3	<b>3</b>	<b>3</b>
<b>Total</b>	<b>66</b>	<b>167</b>	<b>582</b>	<b>648</b>	<b>749</b>
<b>Number of persons in a household</b>					
1	5	14	40	<b>45</b>	<b>54</b>
2	12	20	41	<b>53</b>	<b>61</b>
3	11	27	56	<b>67</b>	<b>83</b>
4	7	23	96	<b>103</b>	<b>119</b>
5	8	16	116	<b>124</b>	<b>132</b>
6+	22	65	230	<b>252</b>	<b>295</b>
<b>Total</b>	<b>65</b>	<b>165</b>	<b>579</b>	<b>644</b>	<b>744</b>

## ECONOMY AND LIVELIHOODS

This section aims to highlight the economic conditions of the Umzumbe LM population, the economic drivers of the area, what the top sectors are and the challenges faced by the district.

---

## EMPLOYMENT

In South Africa, one cannot ignore the significance of the informal sector which accounted for 20 percent of the countries employment (Quantec Research (Pty) Ltd, 2012).

The informal economy can be defined as “Unorganised, unregulated and mostly legal but unregistered economic activities that are individually or family owned and use simple, labour intensive technology” (Barker, 2003) in (Blaauw, 2005).

The table below describes the employment in Umzumbe LM over 2007 – 2010. Highly skilled and skilled employment increased over the period while semi and unskilled employment decreased. Informal employment in the region also increased.

The current unemployment rate in the municipality, using the “strict” Statistics South Africa definition, is 46.56 percent (Quantec Research (Pty) Ltd, 2012). Thus there is a very high rate of unemployment in the area and there is a need for sustainable employment.

**Table 5: Employment data for Umzumbe LM (Quantec Research (Pty) Ltd, 2012)**

Year	2007	2008	2009	2010
Employed - Formal - Highly skilled	1216.90	1269.03	1270.06	1302.53
Employed - Formal - Skilled	4671.94	4769.57	4680.20	4777.68
Employed - Formal - Semi- and unskilled	6552.42	6431.42	6004.32	5837.37
Employed - Informal	2806.52	2896.65	3105.37	2930.81
Unemployed	17999.45	15526.41	12904.30	12936.72
Unemployment rate	54.14	50.26	46.15	46.56

The current status of employment in the area is low. According to census 2001 data there are only 79 people employed out of a total working age population (aged 20 – 64) of 1 334 males and females. The proposed project is likely to create a significant number of jobs for a period not longer than two years during the construction of the dam.

In the study area, majority of employment occurs in Sunduza, in community, social and personal services. This sector is made up of services such as teaching, defence and nursing. Manufacturing is also a bigger employer in the area.

Census 2001 has recorded that only three people in Nyamande work, all of them in community, social and personal services. In Ncane, again there are three people recorded who work, but in an undetermined sector. The low levels of employment shown in the table above are a clear indication that little of the economic activity of Umzumbe LM comes from the study area.

---

## INDUSTRY

The gross geographic product (GGP) of a particular area amounts to the total income or payment received by the production factors – (land, labour, capital, and entrepreneurship) – for their participation in the production within that area.



Gross Value Added (GVA) is defined as the value of goods and services produced in an geographic area. The relationship between GVA and Gross Domestic Product (GDP) is GVA plus taxes on products minus subsidies on products.

According to the Quantec Research, the percentage contribution of Umzumbe LM to National Value Added has risen over the period 1995 -2010 from 0.06 percent to 0.08 percent.

The Figure below taken from Quantec Research shows the Gross Value Added of Umzumbe LM for the period 1995 - 2010 per industry at constant prices.

The total GVA for Umzumbe Local Municipality for 2010 was R 1 387 million while the GVA for KwaZulu-Natal was R 382 024 million. South Africa's 2010 GVA was R 2 406 935 million (Quantec Research (Pty) Ltd, 2012).

The following sectors contribute the most to Umzumbe's GVA

- ❖ Agriculture, forestry and fishing – R 261.88 million.  
Commercial agriculture in Umzumbe LM is highly developed and competitive consisting of sugar cane, bananas and macadamias and to a lesser extent timber, coffee, cut flowers, livestock, poultry, game farming, mangoes, and other fruit and vegetables. Subsistence farming is also big in the area and comprises mostly of livestock, dry land cropping and homestead gardening (Umzumbe Local Municipality, 2011).
- ❖ Finance, insurance, real estate and financial services – R 246.78 million  
Finance is a growing sector in the municipality despite not having any formalise towns.
- ❖ Manufacturing – R 229.52 million  
Manufacturing has grown in the area, with the district facilitating a number of the manufacturing schemes according to the IDP. However these schemes are not mentioned in detail, save for a few community projects.

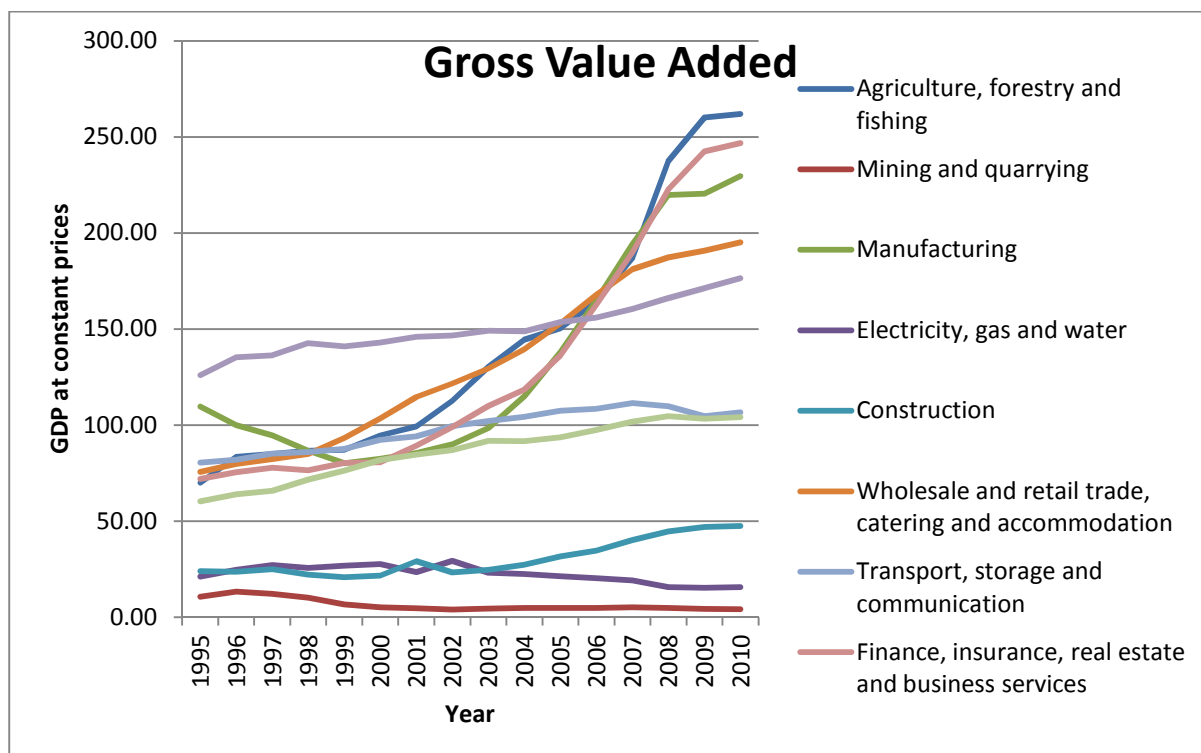


Figure 4: Gross Value Added of Umzumbe Local Municipality (Quantec Research (Pty) Ltd, 2012)

The table below shows the employment per sector for the study area alone. It is important to look at the employment levels per sector as it highlights the most labour absorptive sectors.

In the study area, majority of employment occurs in Sunduza, in community, social and personal services. This sector is made up of services such as teaching, defence and nursing. Manufacturing is also a bigger employer in the area.

Census 2001 has recorded that only three people in Nyamnade work, all of them in community, social and personal services. In Ncane, again there are three people recorded who work, but in an undetermined sector. The low levels of employment shown in the table above are a clear indication that little of the economic activity of Umzumbe LM comes from the study area.

Table 6: Employment per Industry (Statistics South Africa, 2001)

Area	Ncane	Nyamande	Sunduza	D2: Ncwabeni	D3A: Gugamela
<b>Industry</b>					
Agriculture; hunting; forestry and fishing	0	0	3	3	3
Mining and quarrying	0	0	0	0	0
Manufacturing	0	0	11	11	11
Electricity; gas and water supply	0	0	0	0	0
Construction	0	0	7	7	7
Wholesale and retail trade	0	0	6	6	6

Transport; storage and communication	0	0	5	<b>5</b>	<b>5</b>
Financial; insurance; real estate and business services	0	0	3	<b>3</b>	<b>3</b>
Community; social and personal services	0	3	22	<b>22</b>	<b>25</b>
Other and not adequately defined	0	0	0	<b>0</b>	<b>0</b>
Private Households	0	0	4	<b>4</b>	<b>4</b>
Undetermined	3	0	12	<b>15</b>	<b>12</b>

## HEALTH AND HEALTH INFRASTRUCTURE

Umzumbe LM has the following health care provisions:

- ❖ One regional hospital: Port Shepstone
- ❖ One TB hospital: Dunstan Farrell
- ❖ Fifteen clinics
- ❖ Three mobiles

The Ugu District disease profile, as reported by the KZN Department of Health is as follows:

- ❖ Worms
- ❖ STI (new cases)
- ❖ Diabetes
- ❖ Scabies
- ❖ Diarrhoea <5yrs (no dehya)
- ❖ Bilharzia
- ❖ Hypertension (new)
- ❖ Chicken Pox
- ❖ Diarrhoea > 5yrs (+ dehya)
- ❖ Asthma visits <18 yrs

The district HIV rate is 41.3 percent, making it one of the highest rates in KwaZulu-Natal. In Umzumbe LM there are 20 610 persons living with the disease. High HIV/AIDS rates in the area result in reduces population growth, reduced life expectancy in the area as well as lower levels of productivity.

## EDUCATION

Education levels indicate the level of welfare, living standard, capacity and employability of a population. The education levels in the study area are provided for in the table below for persons over the age of 20. Education levels, with a total of 827 persons who have received no schooling.

In Ncwabeni, there are 653 persons without schooling while in the Gugamela area there are 777 persons over 20 who have not received any schooling. Primary school levels are at 442 for Ncwabeni and 499 for Gugamela.

**Table 7: Education for persons over age 20 (Statistics South Africa, 2001)**

Area	Ncane	Nyamande	Sunduzi	D2: Ncwabeni	D3A: Gugamela
No schooling	50	174	603	<b>653</b>	<b>777</b>
Some primary	57	114	385	<b>442</b>	<b>499</b>
Complete primary	11	20	63	<b>74</b>	<b>83</b>
Some secondary	25	44	255	<b>280</b>	<b>299</b>
Std 10/Grade 12	6	16	85	<b>91</b>	<b>101</b>
Higher	3	0	15	<b>18</b>	<b>15</b>

Low education levels reflect a high level of illiteracy among the population and high levels of functional illiteracy. Functional illiteracy is defined as a person who has received education on how to read and write but they are not fully capable of doing so. Thus they are able to read but have difficulty comprehending the material.

Economic theory suggests that education improves the level and quality of human capital, in turn increasing the productivity of individuals, but increasing the output generated per worker. Education facilitates long term growth and is often described as a tool to escape the poverty trap (Bagheri, 2009).

## UTILITIES, INFRASTRUCTURE AND SERVICES

### WATER AND SANITATION

Access to water and sanitation facilities provide an indication of the health status and the level of development and infrastructure in a community. Inadequate access to water contributes to disease and sickness thus weakening the population and reducing productivity. Similarly inadequate sanitation facilities contribute to health and the spread of disease in the area.

In the area immediately surrounding the dam, water is delivered by municipal workers to the access road where women and children fill their buckets and carry water back to their houses, travelling further than one kilometre. Thus the district is providing water below the Free Basic Water level of 6000 litres from a stand pipe no more than 200 meters from the home.

Census 2001 data for the study area confirm that most households access water by a community stand more than 200 meters from the home. In Sunduzi 419 households, 152 households in Nyamande and 24 households in Ncane use the Umzimkhulu River for water.

Table 8: Household access to water and sanitation (Statistics South Africa, 2001)

Area	Ncane	Nyamande	Sunduza	D2: Ncwabeni	D3A: Gugamela
<b>Access to Water</b>					
Piped water inside dwelling	0	3	3	3	6
Piped water inside yard	0	3	6	6	9
Piped water on community stand < 200m	0	0	4	4	4
Piped water on community stand > 200m	0	0	25	25	25
Borehole	3	3	39	42	42
Spring	35	0	26	61	26
Rain-water tank	3	0	9	12	9
Dam/pool/stagnant water	0	0	38	38	38
River/stream	24	152	419	443	571
Water vendor	0	0	5	5	5
Other	0	4	6	6	10
<b>Total</b>	<b>65</b>	<b>165</b>	<b>580</b>	<b>645</b>	<b>745</b>
<b>Access to Sanitation facilities</b>					
Flush toilet – sewerage system	0	4	11	11	15
Flush toilet - septic tank	0	0	4	4	4
Chemical toilet	0	5	7	7	12
Pit latrine with ventilation	0	0	35	35	35
Pit latrine without ventilation	63	0	417	480	417
Bucket latrine	0	0	7	7	7
None	0	156	98	98	254
<b>Total</b>	<b>63</b>	<b>165</b>	<b>579</b>	<b>642</b>	<b>744</b>

## SECURITY

The Mehlomyama Policing Precinct covers the policing of the study area and in total covers a population of 40 053 persons.

Assault with intent to do grievous bodily harm occurred 20 times in the study area per 10 000 persons in 2011 while it occurs 397.3 times nationally. Residential burglary occurred 18.7 times in the study area but 495.3 times in South Africa, per 10 000 persons.

Crime	2009	2010	2011
Assault GBH	17.7	16	20
Burglary Residential	13.2	14.7	18.7
Drug-related crime	7.5	14	14.7
Assault Common	16.2	17	13.7

Total Sexual Crimes	7.2	11.5	10.2
General Theft	10.7	9.2	10.2
Robbery Aggravated Total	5.5	7.2	7.7
Malicious damage to property	6.2	6	7.7
Burglary Business	5.5	4.7	4.7
Robbery Common	5.2	2.7	4.5

Compared to South African crime rates, crime in the Mehlomyama Policing Precinct is relatively low. This is despite the fact that there has been an increase in crime in the study area, while nationally; crime has decreased over the 2010-2011 period.

## TRANSPORT

Currently the only access to the study area is from the P68-2 Main Road (St Faiths Road) and then turning southwards on the D859 District Road, which leads to the two sites. The D859 is a gravel road that continues through the site. Homesteads are for the most part strategically located close to the road for better access to facilities.

There is a bridge in the proposed dam basin of both sites that will need to be removed resulting in disturbance and access problems. The bridge can be seen in the Figure 5 below.

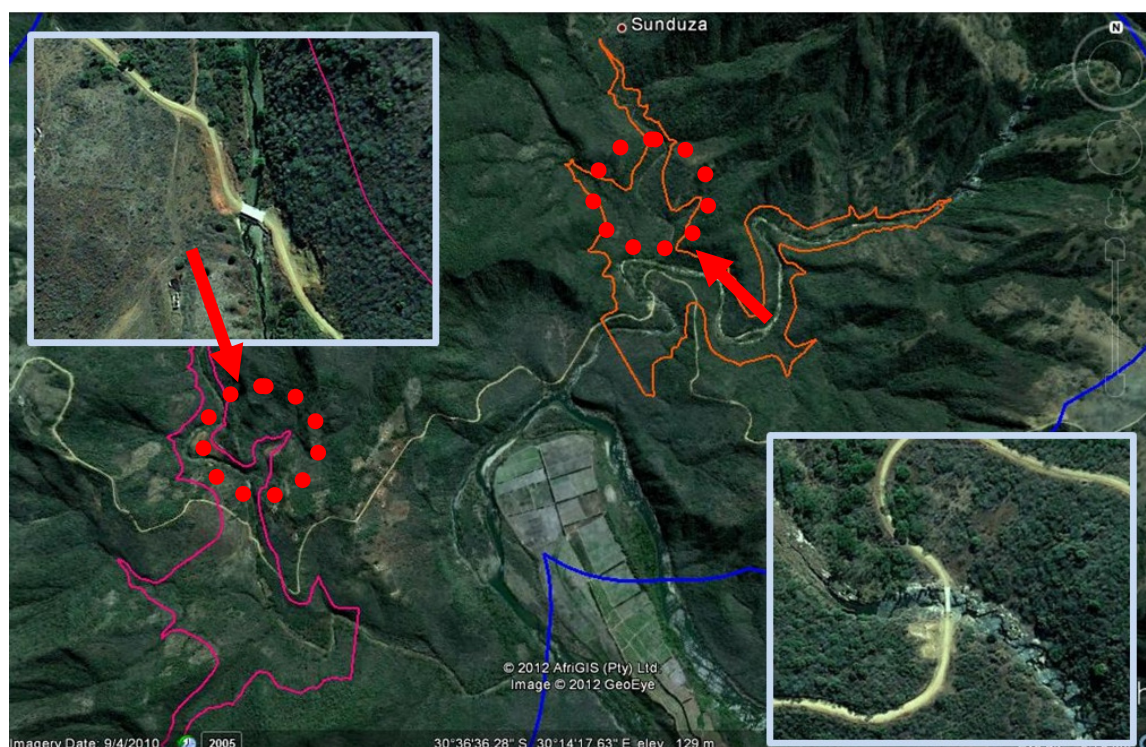


Figure 5: Google Earth image of the D859

## RELOCATION AND RESETTLEMENT

The study area, specifically in close vicinity to the dam, is characterised by homesteads or traditional houses. The maps shown below are Google Earth images of the study area that highlights all the houses identified.

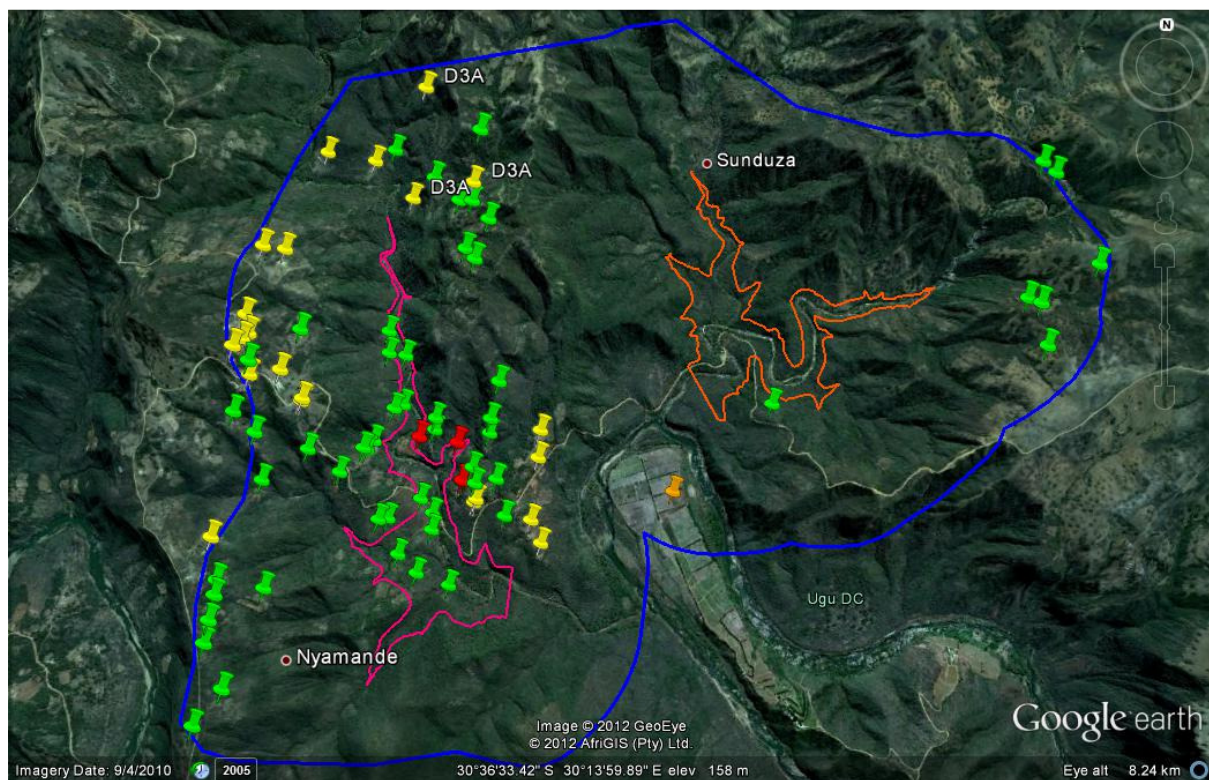


While a large number of these homesteads are broken or abandoned, they have nonetheless been shown in the map so that one may gain an understanding into the settlement activity. The demarcations are as follows

- ❖ Red – inhabited houses in that need to be relocated
- ❖ Yellow – inhabited houses
- ❖ Green – uninhabited houses
- ❖ Orange – Commercial Farm

The map below is shows all the homesteads within the one kilometre buffer region, it is clear that from a settlement point of view, Nyamande is preferred to Ncane. Thus site D3A Gugamela is significantly more populated than site D2 Ncwabeni.

The face that site D3A has occupied homesteads that require relocation and resettlement of people, immediately makes it the least preferred option from a social and economic view. Relocation has a number of social impacts which relate to the disturbance of people and community as well as requires time, consultation and cost. Thus site D2 Ncwabeni would be the preferred option.



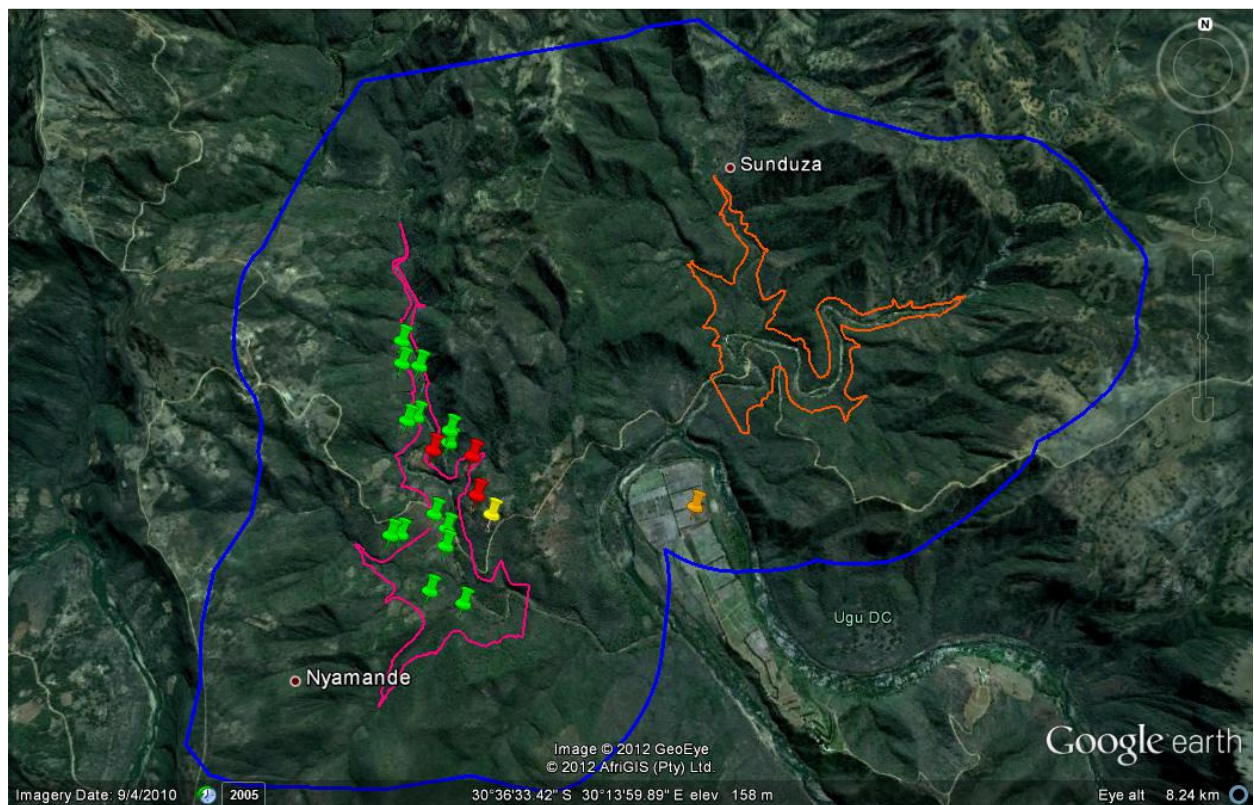
**Figure 6: Google Earth Image of all homesteads in the study area**

The map on site below shows the homesteads that are in the area in the immediate vicinity of the proposed site D3A. There are a large number of abandoned homesteads in the site while three homesteads require relocation.

According to the Ingonyama Trust Board, the Inkosi or Induna allocates and grant indigenous titles of residential and agricultural land in accordance with provisions of indigenous law and custom. These titles are not registered in any formal deeds registry. It is assumed that the title deeds are classified as “old order rights” under the Communal Land Rights Act.

The Act provides guidelines on the transfer of communal land as well as the process by which it should be conducted, in order to provide security to communities. Transfer and formal ownership of the land will need be done in accordance to the Act.

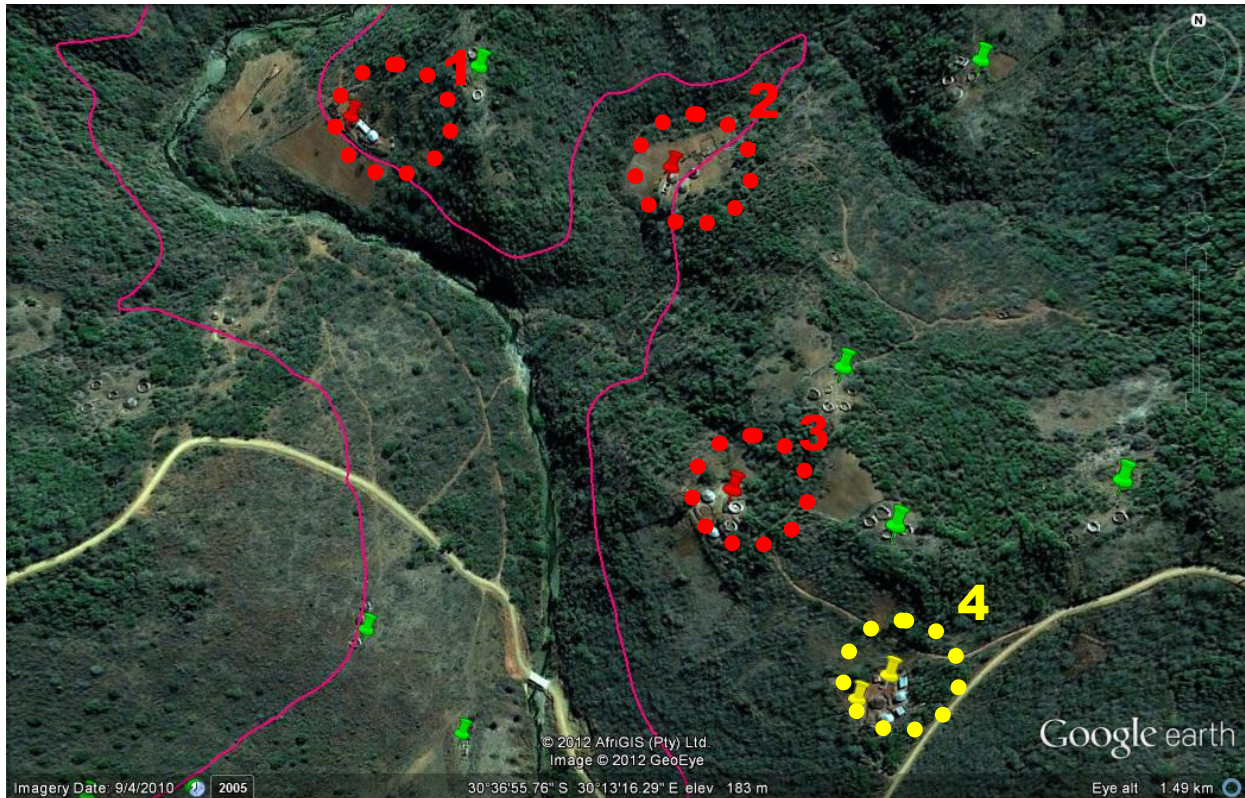
The owners of the abandoned homesteads that lie within the dam basin and require removal will need to be consulted. While the land may not be in current use, the owner of the land will still need to be contacted. Furthermore, while the owners may have relocated, the land is still visited as there are graves in each of the homesteads. Before there can be any removal of the graves, the owner of the land and the families of the deceased will need to be consulted.



**Figure 7: Google Earth Image of all homesteads in the proposed dam basins**

The image below shows the three occupied homesteads can be seen. These homesteads either lie on the within the site D3A or within 100 meters of the site thus requiring relocation.









**Figure 8: Google Earth Image of the homesteads requiring relocation**

The table below provides a description of the homesteads that will be affected. Nema Consulting conducted a site visit to identify the homesteads that are in and around the proposed dam basin. With the assistance of Ugu District Municipality, Sizwe Malinga and Noncedo Gidimisani, and iNduna of Nyamande, Mr Ngwazi, three houses were identified as occupied homesteads that would require resettlement and relocation. The fourth homestead identified would not need relocation and is the closest occupied homestead identified.

During the visit residents were made aware of a possible relocation. The main concern about relocation was that they be resettled within the Nyamande area and all expenses are covered. There were also concerns raised about removal of the deceased.

**Table 9: Inhabitants of fours houses visited**

No	Inhabitant	Co-ordinates of Dwelling	Photograph
1	Ngwazi Agnes, her husband and children. Husband works at a local school.	S 30°36'48.1" E 030°13'06.6" Elevation: 183m	

2	Ngwazi Ngwazi Mantombi	S 30°36'49.1" E 030°13'18.4" Elevation: 183m	
3	Ngwazi Ntombenhle has stroke and live with her son (young adult). Husband past away.	S 30°36'58.6" E 030°13'19.0" Elevation: 220m	
4	Ngwazi MaKhwela, Husband & children. Husband works in the municipality	S 30°37'02.4" E 030°13'23.5" Elevation: 228m	

## SOCIAL AND ECONOMIC IMPACTS

This section is divided into major impacts and other impacts. Major impacts as a result of the proposed dam will be discussed in detail. Mitigation measure and a qualitative impacts analysis will be provided. Major impacts include:

- ❖ Influx of workers;
- ❖ Relocation and Resettlement;
- ❖ SMME opportunities;
- ❖ Employment; and
- ❖ Access.

Other impacts of the dam are smaller impacts that are largely based on assumption of the proposed dam and the possible outcome. These impacts will be discussed however no mitigation or impact table will be provided.

All major impacts are analysed in the section to follow with regard to their nature, extent, magnitude, duration, probability and significance. The following definitions apply:

### **Nature (Status)**

The project impact on the environment can be either

- ❖ Positive (+);
- ❖ Negative (-); or
- ❖ Neutral (0)

### **Extent**

- ❖ Local – extends to the site and its immediate surroundings.
- ❖ Regional – impact on the region but within the province.
- ❖ National – impact on an interprovincial scale.
- ❖ International – impact outside of South Africa.

### **Magnitude**

Degree to which impact may cause irreplaceable loss of resources.

- ❖ Low – natural and social functions and processes are not affected or minimally affected.
- ❖ Medium – affected environment is notably altered; natural and social functions and processes continue albeit in a modified way.
- ❖ High – natural or social functions or processes could be substantially affected or altered to the extent that they could temporarily or permanently cease.

### **Duration**

- ❖ Short term – 1-2 years. (ST)
- ❖ Medium term – 2-5 years. (LT)
- ❖ Long term – impact ceases after the operational life cycle of the activity either because of natural processes or by human intervention. (LT)
- ❖ Permanent – mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient. (P)

### **Probability**

- ❖ Certain – the event is expected to occur in most circumstances.
- ❖ Likely – the event will probably occur in most circumstances.
- ❖ Moderate – the event should occur at some time.
- ❖ Unlikely – the event could occur at some time.
- ❖ Rare/Remote – the event may occur only in exceptional circumstances.

### **Significance**

Provides an overall impression of an impact's importance. The range for significance ratings is as follows-

- ❖ 0 – Impact will not affect the environment.

- ❖ 1 – Low Impact.
- ❖ 2 – Medium Impact.
- ❖ 3 – High Impact.

## INFLUX OF WORKERS

Migration in the area, caused by a males leaving in search of jobs and better living standards has resulted in a negative population growth rate and an imbalance in the number of men compared to the number of women in the area. Migration has also caused an uneven and high population of children and youth in the area resulting in youth dependency and the risk of a large number of social ills.

High dependency on youth is caused by migration of the working age population. Given that there are a large number of youth in the area as well as more women; youth are given more responsibility in the household. There chores include fetching water, wood or looking after younger siblings.

There is an expected increase in the number of people that will enter the area as a result of the project. This increase in workers is expected to be limited to the construction phase of the proposed project. This will most likely be an increase in male job seekers who will settle in the area, causing a number of impacts.

There are 618 men in the study area that are between the ages of 20 - 64 according to census 2001 data, while there are 79 workers in the area. This leaves a population of roughly 540 persons. Of these 540 men of working age population, there will be a percentage of men who are unemployable for reasons such as health, students or people who may choose not to work. Furthermore, the population characterised by low education levels and skills levels. This decreases the employability of the male population. Thus it will be necessary to rely on imported labour to fill the employment gap.

Due the need of imported labour, there is expected to be influx of workers in the study area. This influx of male workers in the area is likely to increase the population and cause a number of social issues in the community.

Not all job seekers entering the area will be employed, leaving a new population of idle workers in the area. Idleness and frustration of not finding work can result in a large number of social ills included crime; alcohol abuse and disturbance to the local community and community structure.

Furthermore an influx of male workers is often characterised by higher health risks and social issues. These include a higher disease burden and rise in HIV/AIDS rates, pressures on food and water security.

---

## MITIGATION AND IMPACT TABLE

To mitigate the low numbers of available male workers, the proposed project should try increase the local workforce through employing women. This would lead to increases in the number of women working, which is low in the area. Also this will affect the gender power distribution, providing women with more bargaining power in the households due to the reliance on their income.



In terms of social insecurity, the increase in the local population may require an increase in policing. There should also be awareness and education campaigns on health and social risks such as HIV/AIDs and crime prevention. These programs should aim to gather support from the traditional authorities and local government to ensure that social problems that could arise can be resolved as early as possible.

The livelihood of workers into the area should be monitored. Hostels and ghetto-like areas should be avoided and where possible, there should be provision made for families of employed workers during the construction phase.

D2: Ncwabeni							
Influx of workers	Without Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	-	Local	High	LT	Certain	3
	Operational Phase	-	Local	Low	LT	Unlikely	3
	With Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	-	Local	High	LT	Certain	2
	Operational Phase	-	Local	Low	LT	Unlikely	2

D3A: Gugamela							
Influx of workers	Without Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	-	Local	High	LT	Certain	3
	Operational Phase	-	Local	Low	LT	Unlikely	3
	With Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	-	Local	High	LT	Certain	2
	Operational Phase	-	Local	Low	LT	Unlikely	2

## RELOCATION AND RESETTLEMENT

There are three occupied homesteads that will require relocation and resettlement on site D3A. These homesteads either fall within the dam basin or within 100 metres from the dam basin. In order to relocate and resettle the homesteads, there are a number of consultation process and arrangements that need to be undertaken.

Relocation of persons will need to take the following into account:

- ❖ Individual vulnerability, resilience and coping capacity/strategies;
- ❖ The context of individuals removed including but not limited to access to work, social services and social networks.

Furthermore there are a number of unoccupied homesteads which will require relocation. These homesteads belong to people who have migrated to other areas in search of work, improved living conditions or other. As land and home owners, there will still be a need to consult with them before the removal.

The relocation of homesteads, occupied (house 1 and 3) and unoccupied, will need to be accompanied with the removal of graves. Most of the unoccupied homesteads have graves sites hence the land is still visited by the land owners. Graves will need to be relocated in accordance to National Heritage Resources Act, Number 25 of 1999. According the Act, no

permit for removal will be granted without consultation and agreement for the removal and relocation of the graves.

## MITIGATION AND IMPACT TABLE

Relocation and resettlement does not necessarily bring about a negative effect on livelihood and communities. There are three homesteads that require resettlement of persons, who will be moved closer to the surrounding community. Furthermore, the benefits of improved water services may actually improve the living conditions of those persons resettled and homesteads that are relocated. Much of the impact is dependent on how the process of relocation and resettlement is conducted. For this reason it is suggested that the relocation and resettlement be based on principals enshrined in Extension of Security of Tenure Act 62 of 1997. Furthermore the nature of the relocation and resettlement will classified as neutral.

In order to achieve a smooth relocation process of all homesteads, there should be consistent communication with affected individuals and the community.

The relocating and resettling the homesteads should be conducted in a manner that ensures those that are resettled are not left in worse conditions than before relocation. There should be the same or improved access to services, employment and income generation opportunities present. There should be no loss of security or sense of place in resettlement.

D2: Ncwabeni							
Relocation and Resettlement	Without Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	0	Local	Low	LT	Certain	1
	Operational Phase	0	Local	Low	LT	Certain	1
	With Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	0	Local	Low	LT	Certain	1
	Operational Phase	0	Local	Low	LT	Certain	1

D3A: Gugamela							
Relocation and Resettlement	Without Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	0	Local	High	LT	Certain	3
	Operational Phase	0	Local	High	LT	Certain	3
	With Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	0	Local	High	LT	Certain	2
	Operational Phase	0	Local	High	LT	Certain	2

## SMME OPPORTUNITIES

The proposed dam has the potential to create a number of job opportunities for existing and new local SMMEs. These range from site clearing, to fencing and construction, as well the supply of materials. There are also opportunities existing for community members to provide catering, accommodation and other services to the new workers.

Should these opportunities be realised the impact will be quite significant. Since these are local SMMEs, the profits generated will stay in the area raising the economic activity and increasing welfare. There is also potential for skills upgrade and further employment. In

South Africa, most employment is generated through small and medium business. Given the size of the proposed project, should contracts between with local SMMEs occur, it is likely that there will be an increase in employment by SMMEs for the duration of the contracts.

Furthermore, through the increase in employment by SMMEs, more skills are developed thus the community is more employable and better off.

## MITIGATION AND IMPACT TABLE

SMME opportunities should be provided to everyone on an equal basis. Where possible, Ugu DM should support and encourage the development of SMMEs and local or regional suppliers. Where possible, procurement should come from local or regional business so that the profits stay in the area, increasing economic activity.

D2: Ncwabeni							
SMMEs	Without Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	+	Regional	High	ST	Probable	2
	Operational Phase	+	Regional	Low	LT	Probable	2
	With Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	+	Regional	High	ST	Probable	2
	Operational Phase	+	Regional	Low	LT	Probable	2

D3A: Gugamela							
SMMEs	Without Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	+	Regional	High	ST	Probable	3
	Operational Phase	+	Regional	Low	LT	Probable	2
	With Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	+	Regional	High	ST	Probable	3
	Operational Phase	+	Regional	Low	LT	Probable	2

## EMPLOYMENT

During the construction phase of the dam, there will be a large number of short term jobs created. This will be for a period not longer than two years, after which there will be a maximum of ten operational jobs created. There may however be spill over job opportunities created, and opportunities for SMMEs. There include landscaping, route clearing and grubbing, excavation and brickwork.

While the benefits of an increase in number of employment opportunities may benefit the local community, there may be a mismatch between the required skill level needed and the skill level of the labour offered, resulting in imported labour.

Imported labour is both beneficial and negative. The fact that persons with new skills are entering an area is beneficial to the economy and for community learning. However it does create further strain on the infrastructure in the area and create competition between community members and imported workers.

Given that there will be guaranteed job creation in the area and an influx of job seekers, tensions may arise between potential job seekers and the local community as they compete for the same jobs. Given the low skill level and lack of training, there may be a bias to employ people who have moved to the area seeking work on the dam.

## MITIGATION AND IMPACT TABLE

Mitigation measures for employment involve preferential treatment to local job seekers before employing labour from outside. There should be training of the local community ensuring that they are up skilled as best as possible for employment.

In order to increase the size of local employment, women should also be employed in the construction of the dam.

Where possible, labour intensive methods should be used for the construction the proposed dam.

D2: Ncwabeni							
Employment	Without Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	-	Local	Medium	ST	Certain	2
	Operational Phase	-	Local	Low	LT	Unlikely	1
	With Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	+	Regional	High	ST	Certain	3
	Operational Phase	+	Regional	Low	LT	Certain	3

D3A: Gugamela							
Employment	Without Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	+	Regional	High	ST	Certain	2
	Operational Phase	+	Regional	Low	LT	Certain	1
	With Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	+	Regional	High	ST	Certain	3
	Operational Phase	+	Regional	Low	LT	Certain	3

## ACCESS

Current access to the area site D2 and D3A is via a single dirt road that links Nyamande to Ncane. From this single road, one has to walk to the actual household which is not accessible by a vehicle. The impact of the dam has negative consequences on access to roads for both sites. In order to construct the dam there will be a required removal of a portion of this gravel road, as well as the bridge that runs across the dam.

According the Environmental Screening Investigation conducted by BKS (Pty) Ltd, the removal and reconstruction of the road on site D3A Gugamela will be more costly and require more maintenance than the removal of the road at site D2 Ncwabeni.

Furthermore, the magnitude of relocation and removal of the road at site D3A Gugamela will be greater on the surrounding community that it will be on site D2 Ncwabeni given the number of settlements surround the Gugamela site.



## MITIGATION AND IMPACT TABLE

Alternative access points will need to be constructed so that people can access facilities and roads. There will need to be consultation process informing the community of the removal of the road.

The access road should be re-established after construction to enable economic and social contact in the areas. Thus there should be minimal long term constraints on access to services.

D2: Ncwabeni							
Access	Without Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	-	Local	Medium	ST	Certain	2
	Operational Phase	-	Local	Low	LT	Unlikely	1
	With Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	-	Local	Medium	ST	Certain	2
	Operational Phase	-	Local	Low	LT	Unlikely	1

D3A: Gugamela							
Access	Without Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	-	Local	High	ST	Certain	3
	Operational Phase	-	Local	Medium	LT	Unlikely	2
	With Mitigation	+/-/0	Extent	Magnitude	Duration	Probability	Significance
	Construction Phase	-	Local	High	ST	Certain	2
	Operational Phase	-	Local	Medium	LT	Unlikely	1

## OTHER IMPACTS

This section describes other probable impacts of the dam. These impacts are not significant impacts thus while they will be discussed, no impact table or mitigation measure will be provided.

## INDUSTRY

Agriculture, Business and financial services and Manufacturing are the three largest sectors in Umzumbe LM. Should the dam affect any of these three sectors negatively the effect will be quite significant given that these size of the sectors and the small economy of Umzumbe LM.

However the impact on industry is more likely to be positive than negative as the dam will provide a number of opportunities for economic activity, such as tourism, agriculture and recreation. There is also potential for the dam to impact favourably on manufacturing.

## ACCESS TO WATER AND HEALTH

Ugu DM is currently proposing that the dam be used to provide water to the local community. An intake tower and water reticulation system will be in constructed. Should water provision

methods improve; women and children will spend less time fetching water, being more productive and improving gender equality.

The impact of health in the area is likely to be negatively affected by the expected influx of workers in the area. It is expected that there will be more men entering the area which could possibly cause a rise in the level of disease in the area.

However, an improvement of the population health on the whole is expected should the volume of water provided to the community increase. This benefits of water supply on health will be enhanced further if water is supplied through piped systems. The quality of water is also likely to improve through the proposed water reticulation system.

As a result of improved water provision, there is likely to be an improvement in sanitation in the area. Improved sanitation leads to better health and reduced the spread of disease.

Water supply has the ability to increase the health and sanitation in the area. A healthy community allows for more productivity and an improved workforce. It also contributes to improved standards of living and fighting poverty.

The availability of water reduces physical stress and improves health status of pregnant women, reducing miscarriages, maternal deaths, and harm to the baby.

The impacts on health and access to water are based on assumption that there will be an improvement on the access to water and an increase in water supply. As mere assumptions they cannot be regarded as major impacts of the dam and fall beyond the scope of this document.

---

## AGRICULTURE

There is potential for further agricultural activity in the area given the proposed dam, but it is limited to irrigation farming. As a result of the proposed dam, there will be a constant flow of water such that farmers will now be able to farm all year round. Thus farmers are able to implement more efficient farming methods and produce more crops annually. The dam will also provide incentive for further agricultural activity in the area given the constant water flow as well as water security for sustainable long term farming.

Flood farming as opposed to irrigation farming will be negatively affected as the dam will result in no floods thus farmers cannot flood farm. Rather farmers will have to invest in expensive irrigation farming materials and equipment to continue farming. No flood farming was found to occur in the study area or further downstream hence the impact on the dam is viewed positively on irrigation farming methods.

Another negative impact of the dam is that it eats into land that can be used for agriculture. Currently on site D3A there is subsistence agricultural activity that is taking place.

The commercial farm will also be affected especially during the construction phase of the dam as the water flow will be affected.

The impact on agriculture is a direct impact that is positive for normal irrigation farming methods. As a result of the there will be an increase in crops produces, reduced seasonal fluctuations and a reduction income fluctuations for farm owners and farm workers.

Agricultural mitigation measures would include liaising with subsistence farmers on site D3A to ensure that farmers are adequately compensated or provided with alternated farming land. The owners of the commercial farm should also be consulted to mitigate the effects of the proposed project.

## TOURISM AND RECREATION

There are a number of tourism opportunities created by having the proposed dam. These include accommodation, fishing and recreational activity. A dam can attract people to the area which can increase the economic activity in the region and increase welfare. Depending on the type of tourism activity, there can be a number of sustainable jobs that will be created through the sector. The tourism sector is also a sector that can be extremely inclusive of the community and that can contribute directly to community empowerment.

On the other hand, the dam can impact negatively on existing tourism, should there be any tourism activity occurring downstream. Should any tourism activity take place in the estuary in Port Shepstone, this will be negatively affected as the water supply will be lower causing strain on existing tourism infrastructure.

## PROPERTY VALUE

Both alternate sites, as well as the surrounding land are currently occupied by the Ingonyama Trust Board (ITB), as the land falls under the Nyamande Traditional Authority. Thus there is no property market identified. While land may be valued for agricultural purposes, land is rarely sold by the ITB but rather leased. For this reason, it is assumed that there will be no property value effect. However, would there have been a market for property in the area; the overall effect would be assumed positive.

It is assumed that the value of tourism and agricultural opportunities as well as the impacts of water supply on health amongst other benefits would outweigh the impact of job seekers entering the area, leading to an overall increase in property values.

## EDUCATION

Access to water improves health allowing for better concentration levels of learners at school. It also provides better sanitation levels at school. The impact on education as a result of the proposed project will be through improved learner concentration levels and capability to function at school.

## COMPARITIVE ANALYSIS OF ALTERNATIVES

The table below is a summary of the impact and the preferred alternative. It was found that construction on site D2 will cause the least social and economic disturbance to the area.

Aspect	D2: Ncwabeni	D3A: Gugamela
Influx of workers	✓ No Preference	✓ No Preference
Relocation and resettlement	✓ Preferred Site	× Not preferred
SMME Opportunities	✓ No Preference	✓ No Preference
Employment	✓ No Preference	✓ No Preference

<b>Access</b>	✓ <b>Preferred Site</b>	✗ <b>Not preferred</b>
Industry	✓ No Preference	✓ No Preference
Access to water and Health	✓ No Preference	✓ No Preference
Agriculture	✓ Preferred Site	✗ Not preferred
Tourism and Recreation	✓ No Preference	✓ No Preference
Property Values	✓ No Preference	✓ No Preference
Education	✓ No Preference	✓ No Preference
<b>Preferred</b>	✓ <b>Preferred Site</b>	✗ <b>Not the Preferred Site</b>