8.8 HERITAGE RESOURCES

Heritage resources may be tangible, such as buildings and archaeological artefacts, or intangible, such as landscapes and living heritage. Their significance is based upon their aesthetic, architectural, historical, scientific, social, spiritual, linguistic, economic or technological values; their representivity of a particular time period; their rarity; and their sphere of influence.

Literature and database reviews, complemented by a field investigation, indicate that the following heritage resource types are present in the study area.

8.8.1 Archaeological sites

All locations in the study area in which archaeological sites might reasonably be expected have been subject to ploughing, thus compromising the integrity of such sites. Furthermore, potential locations of Iron Age archaeological sites remain preferred crop production fields today, and the presence of standing crops hindered the identification of such sites.

One archaeological site of medium significance was identified in the proposed Ntabelanga Dam basin, and another site of medium to high significance was identified in the proposed Lalini Dam basin. These sites will be destroyed by inundation and appropriate mitigation is recommended in that regard.

8.8.2 Places, buildings and structures

Structures associated with unoccupied homesteads are located within the proposed Ntabelanga Dam basin and 12 structures have been located within the Lalini Dam basin. For the purposes of this report all these structures are assumed to be older than sixty years, thus constituting heritage resources. All of these structures have low significance.

8.8.3 Graves and traditional burial places

Numerous traditional burial places are known to occur within and adjacent to the project area. Such burials comprise one or more ancestral graves, typically located within or close to homestead precincts, rather than in formal cemeteries managed by a local authority. Graves usually comprise stone-packed mounds, with or without a headstone, although older graves may be less readily identifiable due to the deflation of the mound and scattering of the stone covering. Numerous abandoned homesteads that probably predate the mid 1960s are present in the study area. These homesteads may well be the locations of ancestral graves.

Ancestral graves were identified in the proposed Ntabelanga Dam basin. There is good reason to believe that there may be graves associated with twelve structures that have been identified as affected by the Lalini Dam . A community cemetery may

also be affected by the Lalini Dam. All human remains have high heritage significance.

8.9 VISUAL ASPECTS

Visual impacts are determined based on a number of factors, namely the topography, vegetation cover, land use, visibility, landscape diversity and landscape character.

The first three elements are described in more detail in sections 8.2, 8.4 and 8.11 respectively and are not further discussed here.

8.9.1 Ntabelanga Dam

Visibility

The visibility is contained within the valleys by the surrounding rising landforms and valley slopes and limits views to approximately 1.5 - 5.0 km. Intermittent views are possible up to 7 km away from the higher landforms (see **Figure 56**).

Critical views are from the surrounding local villages such as Luxeni Bongweni, Komkulu, KuQulungashe and Siqungqwini, as well as from the surrounding access roads.

Visibility is generally uninterrupted throughout the viewshed. None of these views should be negatively impacted as the views will not detract from the existing aesthetic appeal of the area nor will it affect any land-use that relies on the visual environment for it to exist

Landscape Diversity

Landscape diversity within the viewshed is primarily based on the topographical features, as the vegetation, namely grasslands, is relatively uniform in texture and height. The landscape exhibits a great degree of horizontal and vertical scale due to the surrounding hills and ridges that provide a scape in proportion to the scale of the dam.

The study area is already modified by human activity such as the various scattered settlements, roads and ploughed, terraced lands which add to a more diverse landscape.

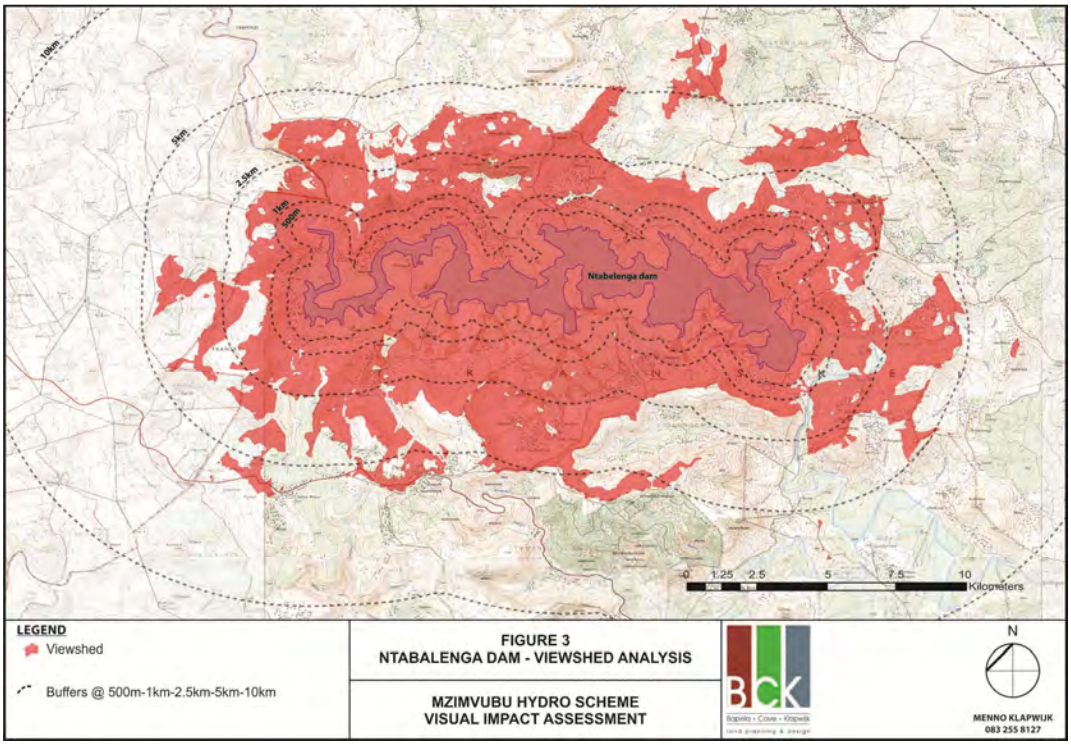

Figure 56: Ntabelanga Dam Viewshed (DWS, 2014f)

The low visual diversity of the open and uniform vegetation together with the diversity of the human activity and the rising landforms adds towards a low to moderate diversity

The lack of visual diversity will result in a low Visual Absorption Capacity (VAC) and will in turn result in any large scale structure to be highly visible due to the lack of screening and the high visual contrast.

Landscape Character

The hills and ridges exhibit a well-defined and vivid sense of spatial definition with a moderate scenic quality due to the combination of low gentle valleys and open grasslands. The character of the landscape can be regarded as rural agriculture predominantly stock grazing and subsistence farming.

The introduction of a dam within this landscape will alter the character considerably due to the size and scale of it. The dam will considerably alter the sense of place and Genius Loci of the study area. However, the change in character is not considered to be significantly negative and aesthetically unpleasing.

The introduction of this element in the landscape has the potential to promote tourist-based enterprises that rely on the high scenic quality as the basis for their business.

8.9.2 Lalini Dam

Visibility

The visibility is contained within the valleys by the surrounding rising landforms and valley slopes and limits views to approximately 1.5 - 5.0 km. Intermittent views are possible up to 8 km away from the higher landforms (**Figure 57**).

Critical views are from the surrounding local villages such as Mhlabathi, Upper Rosa, Shawbury, Mtshazi, Lolana and Mahoyana, as well as from the surrounding access roads.

Visibility is generally uninterrupted throughout the viewshed. None of these views should be negatively impacted as the views will not detract from the existing aesthetic appeal of the area nor will it affect any land-use that relies on the visual environment for it to exist

Landscape Diversity

Landscape diversity within the viewshed is primarily based on the topographical features as the vegetation, namely grasslands, is relatively uniform in texture and height. The landscape exhibits a great degree of horizontal and vertical scale due to the surrounding hills and ridges that provide a scape in proportion to the scale of the dam

The study area is already modified by human activity such as the various scattered settlements, roads and ploughed, terraced lands which add to a more diverse landscape

The low diversity of the open and uniform vegetation together with the diversity of the human activity and the rising landforms adds towards a low to moderate diversity

The lack of visual diversity within this Grassveld landscape biome will result in a low VAC and will in turn result in any large scale structure to be highly visible due to the lack of screening and the high visual contrast. The hills and ridges together with the scattered settlements display a slightly higher visual diversity due to the more diverse topography and the odd patches of trees. However, this still does not provide sufficient diversity to raise the VAC to moderate for this area.

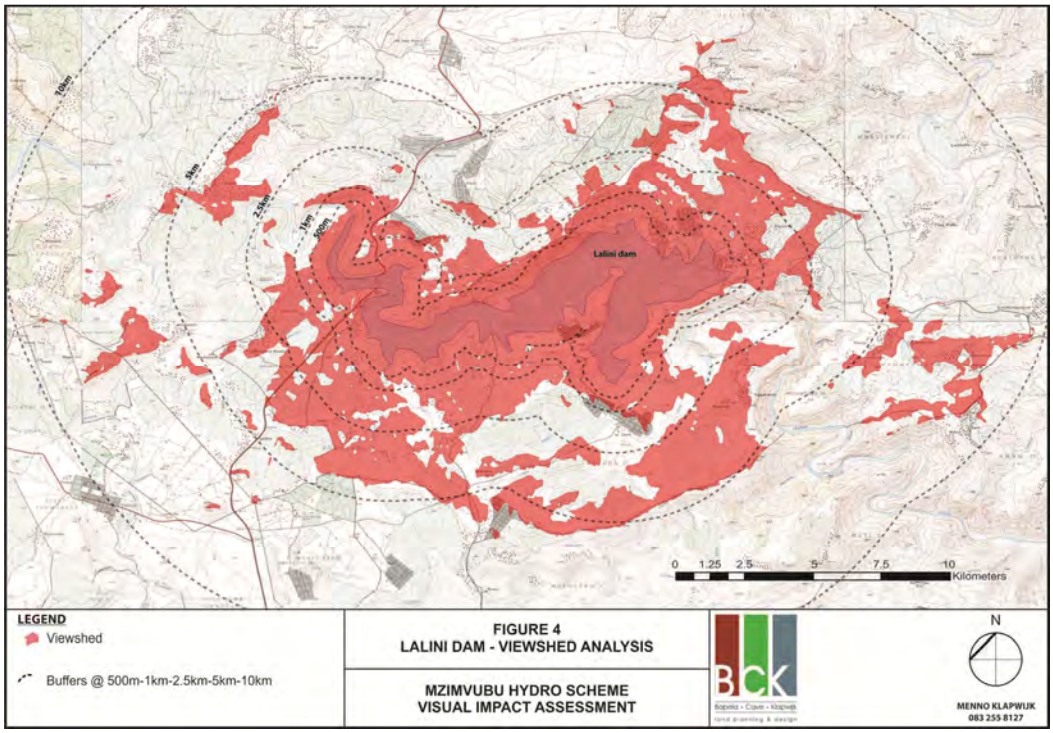

Figure 57: Lalini Dam Viewshed

Landscape Character

The hills and ridges exhibit a well-defined and vivid sense of spatial definition with a moderate scenic quality due to the combination of low gentle valleys, open grasslands and the scattered settlements. The character of the landscape can be regarded as rural agriculture, predominantly stock grazing and subsistence farming.

The introduction of a dam within this landscape will alter the character considerably due to the size and scale of it. The dam will considerably alter the sense of place and Genius Loci of the study area. However, the change in character is not considered to be significantly negative and aesthetically unpleasing.

The introduction of this element in the landscape has the potential to promote tourist-based enterprises that rely on the high scenic quality as the basis for their business, especially with the Tsitsa Falls in close proximity.

8.9.3 Power lines

Visibility

The visibility within the valley is contained by the surrounding rising landforms to approximately 1 km. As the transmission lines rise up out of the valley they become very exposed and are visible for many kilometres (**Figures 58, 59** and **60**).

Power line 1 is the closest to the dam wall and the Tsitsa Falls. Although it is the shortest of the routes the visual exposure extends at least 7.5 km to the north east as

well as to the south east. The hydro-station will be located is a relative unspoilt treed valley where the slopes of the valley limit views to approximately1.5 - 5.0 km. Although the pylons are well screened within the valley the servitude that will need to be cleared for access will greatly contrast with the surrounding vegetation and be visually obvious. Intermittent views are possible up to 8 km away from the higher landforms.

Power line 2 is more contained by the landscape than Power line 3 and is generally limited as a continuous view to approximately 3 km. Views occurred from the higher lying areas to the north are Intermittent and up to a distance of 10km

Power line 3 rises out of the valley further down the river and runs along the edge of the plateau next to a valley where it stands out proud in the open landscape. The visual exposure is uninterruptedly visible northwards for at least 5 km with sporadic views possible up to 10 km. Views to the south are more scattered but also extend to at least 10 km.

Critical views are from the surrounding local villages such as Mhlabathi, Upper Rosa, Shawbury, Mtshazi, Lolana, and Mahoyana. Critical views are also those from the surrounding access roads.

Although the power line routes are very visible and exposed within the open and low vegetation the rolling topography created by the surrounding landscape assists in containing the view impact to generally no more than 5 km.

The valley that runs parallel to Powerline 3 would greatly assist in reducing the visual exposure of the line if places within the valley than rather on top along the edge of the escarpment.

Landscape Diversity

Landscape diversity within the viewshed is similar to the dam study sites and is primarily based on the topographical features and human interventions as the vegetation, namely grasslands, is relatively uniform in texture and height.

The landscape exhibits a great degree of horizontal and vertical scale in the vicinity of the Tsitsa River due to the surrounding hills, ridges and steep-sided valley bottom that provide a scale in proportion to the scale of the pylons. However, once the lines rise out of the valley they traverse an open rolling landscape that is already modified by human activity such as the various scattered rural settlements, roads and ploughed, terraced lands which add to a more diverse landscape.

The low diversity of the open and uniform vegetation together with the diversity of the human activity and the rising landforms adds towards a low to moderate diversity, resulting in a low to moderate VAC. The hills and ridges together with the scattered

settlements display a slightly higher visual diversity due to the more diverse topography and the odd patches of trees. However, this still does not provide sufficient diversity and will still result in any large scale structure to be highly visible due to the lack of screening and the high visual contrast.

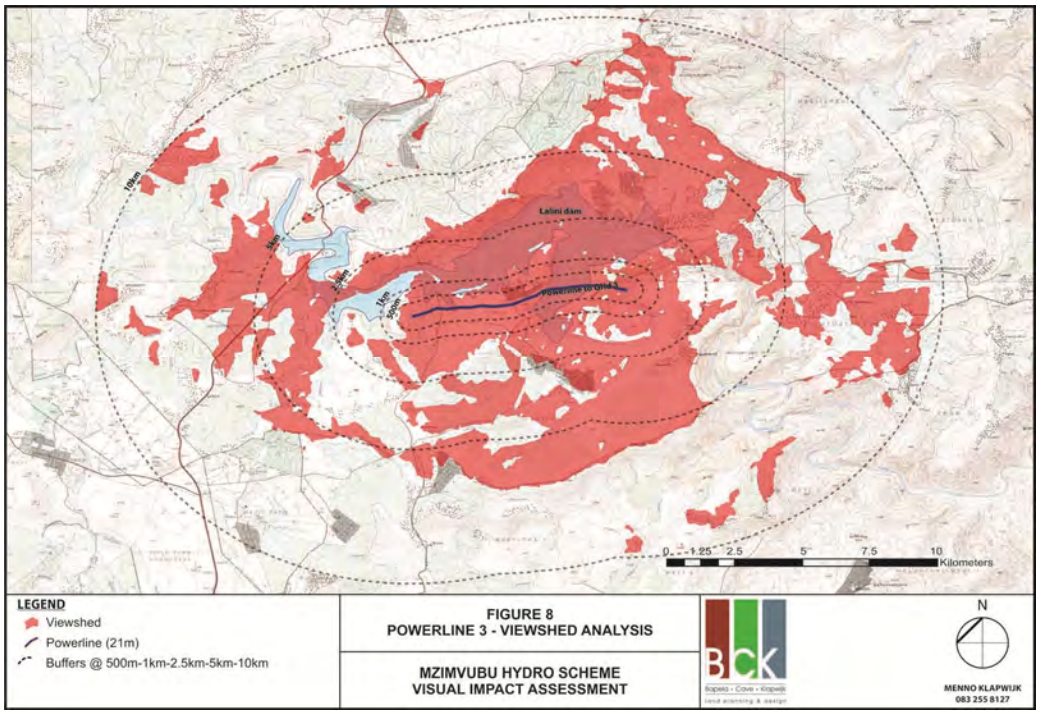

Figure 58: Power line 1 Viewshed

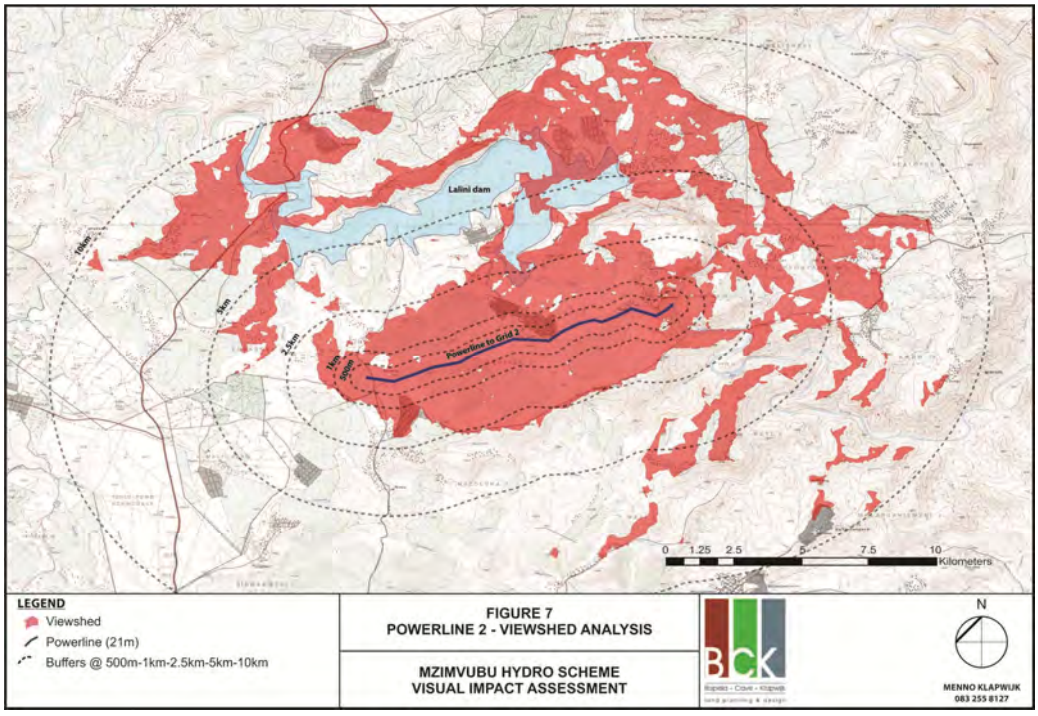

Figure 59: Power line 2 Viewshed

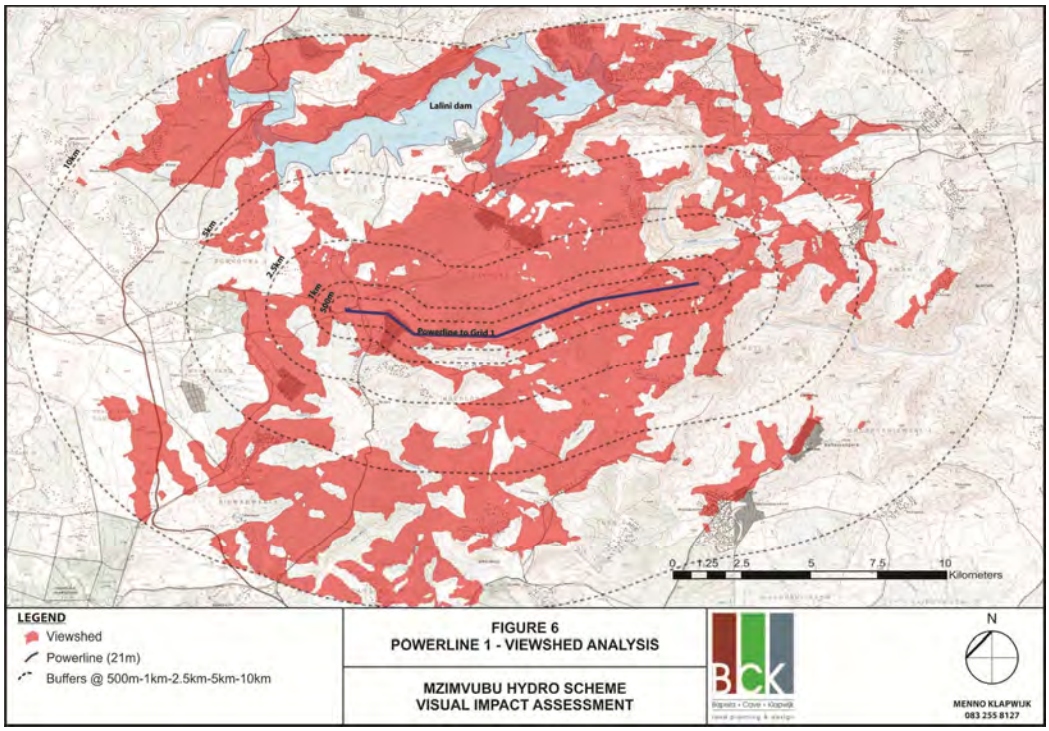

Figure 60: Power line 3 Viewshed

Notwithstanding the low to moderate VAC, the area has already been modified by human interaction in the form of settlements, roads and arable agriculture and is thus able to visually accommodate the industrial nature of the lines.

Landscape Character

The hills and ridges exhibits a well-defined and vivid sense of spatial definition with a moderate scenic quality due to the combination of low gentle valleys, open grasslands and the scattered settlements. The character of the landscape can be regarded as rural agriculture predominantly stock grazing and subsistence farming.

8.9.4 Irrigation Scheme

Visibility

Views in the Tsolo area are limited in the west to between 500 m and 5 km and between 1 km and 8 km in the east. Views along the Tsitsa River area are generally between 1 km and 2.5 km while the area around the Ntabelanga Dam is visible between 2.5 km and 6.5 km (**Figure 61**).

Critical views are from the R 396 that links the N2 with Maclear through Tsolo. Critical views also include the surrounding local villages such as Tsolo, Bantubabi, Prince, Duka, KuGubengxa, St. Cuthberts and Godini in the Tsolo area; the village of Machibini along the Tsitsa River area and the villages of eLugolweni, Coba Vale, Coba, Luxeni and Mpetsheni in the Ntabelanga Dam area.

Although the irrigated areas are close to critical view from the villages and well within the viewsheds the impact is considered low as these area are mostly existing arable lands that are being converted to irrigation and as such the visual image will not significantly change.

Landscape Diversity

Landscape diversity within the viewshed is similar to the dam study sites and is primarily based on the topographical features and human interventions, as the vegetation, namely grasslands, is relatively uniform in texture and height.

Landscape Character

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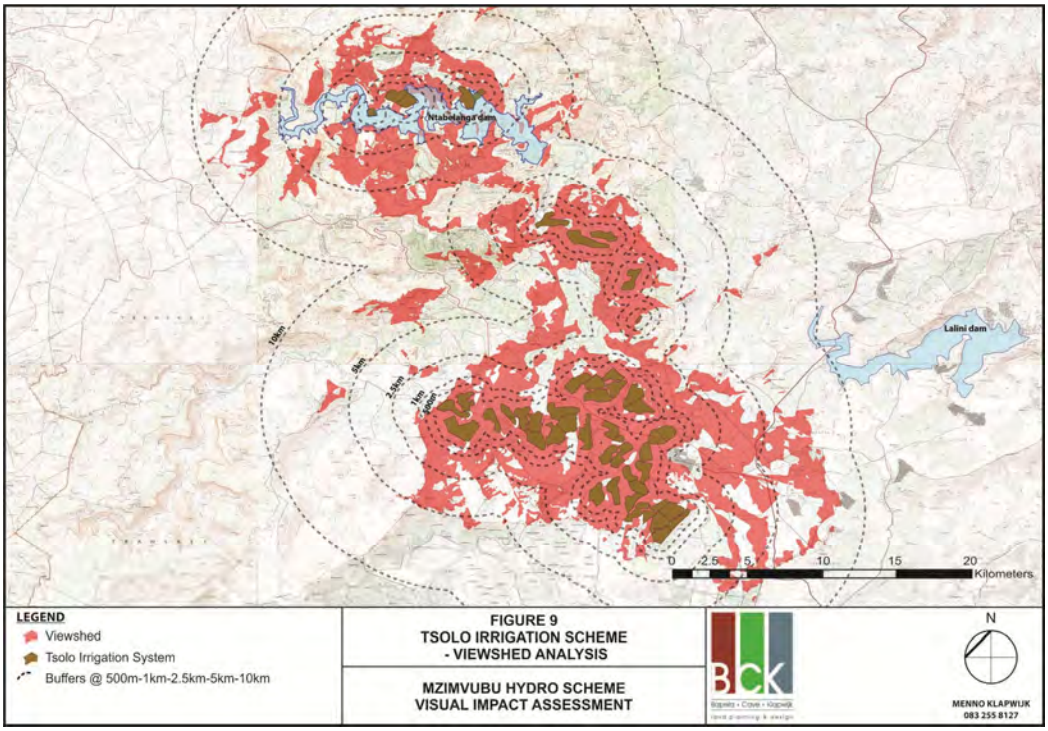

Figure 61: Irrigation scheme

8.9.5 Access roads

Visibility

Critical views are from the R 396 that links the N2 with Maclear through Tsolo. Critical views also include the surrounding local villages such as KwaNogemani, Zilandana, KwaMsobomva, Kombulu, Bongweni, Sinxago, KuQulungashe, Sinqungweni, Sinqungini and Mcedu.

It will not be possible to adequately screen the roads from the surrounding areas due to the short grasslands that do not offer a screening function.

Landscape Diversity
Landscape diversity within the viewsheds is based primarily on the topographical features and human interventions such as rural settlements, ploughed and terraced lands and a network of access roads. This diversity is tempered by the vegetation, namely grasslands that is relatively uniform in texture and height.

The low diversity of the open and uniform vegetation, together with the diversity of the human activity and the rising landforms, adds towards a low to moderate diversity. This diversity does allow some form of visual compatibility which incorporates the roads in the landscape as the introduction of new roads is not visually out of place and in contrast with the existing sense of place.

Landscape Character
The hills and ridges exhibit a well-defined and vivid sense of spatial definition with a moderate scenic quality due to the combination of low gentle valleys, open grasslands and the scattered settlements. The character of the landscape can be regarded as rural agriculture, predominantly stock grazing and subsistence farming.

The introduction of new access roads will not detract from this sense of place as images of roads already exist within this landscape.

8.10 SOCIO-ECONOMICS OF THE EASTERN CAPE PROVINCE

8.10.1 Demography

The Eastern Cape Province covers an area of 168 966 km^2 making it the second largest province by geographical area, covering 13.8% of South Africa's total land mass. This is only surpassed by the Northern Cape which covers an area of 372 889 km^2 accounting for 30.5% of the total land area of the country. The total population of the province stood at 6 562 053 people in 2011 (Statistics South Africa, 2012) and was estimated at 6 620 100 people in June, 2013 (Statistics South Africa, 2013, p. 3). Consequently, the province is ranked third in respect of population size and has a population density of 39/km^2. This makes it the sixth densely populated province in South Africa. In respect of age structure, 33.0% of the population is under 15 years of age, while 60.2% is between 15 and 64 years with 6.7% being over the age of 65 years. The population pyramid of the province is illustrated in **Figure 62.**

It will not be possible to adequately screen the roads from the surrounding areas due to the short grasslands that do not offer a screening function.

Landscape Diversity
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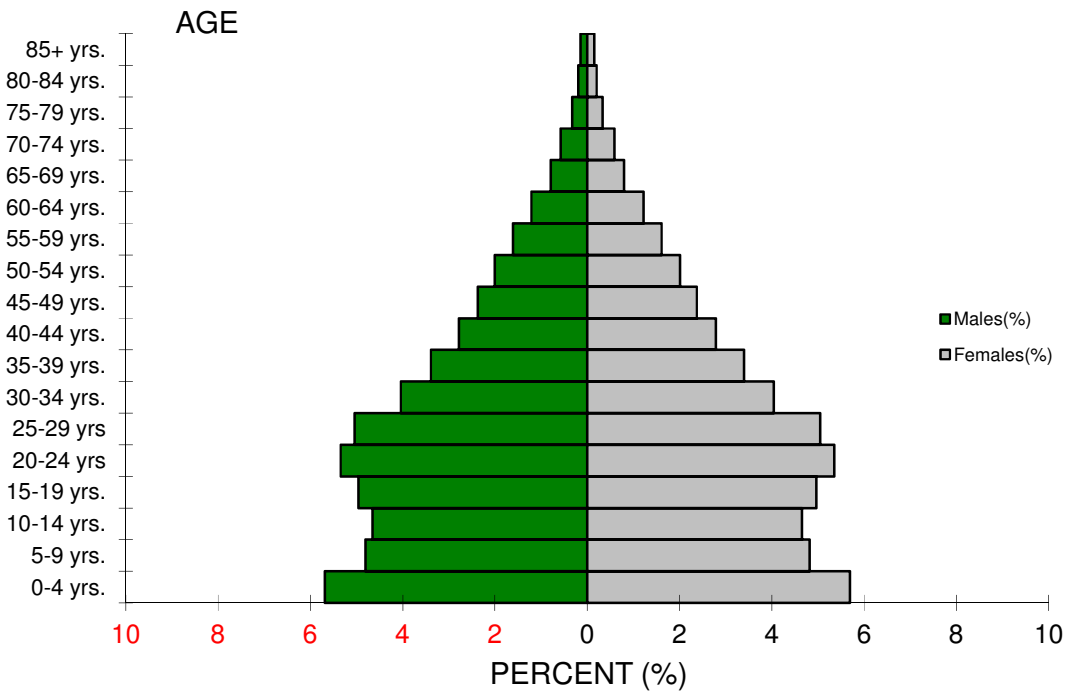

Data source: (Statistics South Africa, 2012)

Figure 62: Population pyramid Eastern Cape Province

In the Eastern Cape Province, 86.3% of the population are black African, 8.3% are coloured, 4.7% are white and 0.4% are Indian or Asian people. IsiXhosa is spoken by 78.8% of the population, followed by Afrikaans (10.6%), English (5.6%), and Sesotho (2.5%).

The 2011 Census indicated that there were 1,687,385 households in the province with an average household size of 3.9. Of these households, 49.6% were female headed, 63.2% lived in formal dwellings and 59.6% either owned or were paying off their dwelling.

The 2011 Census also indicated that 40.4% of households in the province had flush toilets connected to the sewerage system, while 41% had their refuse removed on a weekly basis. Piped water was delivered to 32.8% of households and 75% of Eastern Cape households used electricity as a means of energy for lighting.

The sex ratio across the study area indicates a higher number of females compared to males.

8.10.2 Unemployment

In the 4th quarter of 2013 the official unemployment rate in the province was 27.8%, the second highest rate of unemployment in the country (after the Free State). It increased to 30.4% in the 2nd quarter of 2014.

The expanded unemployment rate (which includes disillusioned work seekers) in the 4th quarter of 2013 was however 43.3%, and increased to 44.4% in the 2nd quarter of 2014, thus giving the province the highest expanded rate of unemployment in the country. The LMs in the study area have unemployment rates of between 40 and 50% (*The Local Government Handbook*, 2014).

8.10.3 Poverty

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

The proportion of households owning household goods across the area is lower than that of the province.

The study area is characterised by a high dependency ratio which indicates the burden of supporting children under 15 years and people over 65 years placed on the working population aged 15–64 years.

8.10.4 Health

In addition to HIV AIDS, a further issue concerning health in the province relates to cancer. It is indicated that "[t]*he rate of the cancer in the Eastern Cape is six times the national average*" (Stassen, 2011) and new research is linking this with the processing of home-grown maize and the silica from the grid stones that may cause throat irritations (Sewram, 2011).

8.10.5 Education

The situation regarding schooling in the area improved somewhat between 2001 and 2011. Notwithstanding this, all the district and local municipalities within the study area (with the exception of uMzimvubu LM) are above the provincial level (10.5%) in terms of the percentage of the population with no education.

8.11 MUNICIPAL DESCRIPTION

The project impacts the three district municipalities of Joe Gqabi, O. R. Tambo and Alfred Nzo. Of these districts Joe Gqabi covers the greatest land area and has the lowest population density across the region at 14 people/km^2 while O. R. Tambo has the largest population and the highest population density at 110 people/km^2. With regard to population group, black African people are the dominant group across all districts at over 90%. Xhosa is the dominant language spoken in the area ranging between 70.5 and 94.2 percent. This data is represented below in **Table 20**.