

JOZINI LOCAL MUNICIPALITY

ZINESHE AND GUJINI RURAL HOUSING PROJECT

ENVIRONMENTAL REPORT



Prepared for:

TERRAPLAN AND ASSOCIATES
WESTVILLE
Tel 031 266 8188

Prepared by:

NATURE AND DEVELOPMENT GROUP OF AFRICA



NDG - Africa

All correspondence to be directed to: Patrick Addo
Cell 083 555 2288 admin@ndgafrika.co.za ndgafrika@gmail.com
18 Joseph Chamberlain Road, Blackridge
P O Box 1978, Pietermaritzburg, 3200
24th May 2017

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1 INTRODUCTION

Jozini Local Municipality is investigating the feasibility of undertaking a rural housing development in the Zineshe & Gujini area which is within ward 3 and 4 of the Jozini Municipality. This project involves the construction of low income housing for qualifying beneficiaries in the area. In order to ensure a holistic approach to the planning process of the Zineshe & Gujini Rural Housing Project, NDG-Africa was requested by Umpheme Developments to investigate and make environmental management recommendations into the planning process of the proposed project. This report provides basic environmental considerations of the area, and identification of potential issues associated with the proposed development. The following needs to be noted:

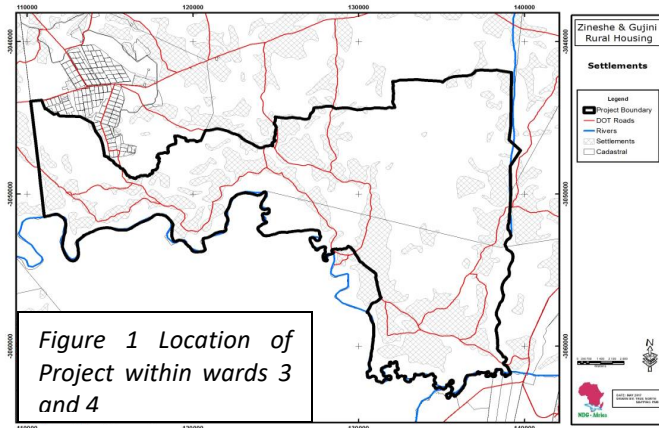
- The project is located within Ngonyama Trust Land
- The activities/building houses will occur within homesteads where the land is already bare
- No new sites will be created for any activity
- infrastructure development will be undertaken
- No environmental triggers are associated with the development, and thus
- No environmental authorization is required

The principal objective of this environmental investigation is to identify any sensitive environments (biophysical, economic or socio-cultural) within the project area and advice on the implications that these may have for the proposed development. The results of this environmental analysis are to include:

- Clear indications of whether or not there are significant physical, socio-cultural and legal barriers that will merit a no development option;
- Clear indications of any significant issues relating to the project and whether or not any further studies are recommended and what such studies should entail;
- Whether any identified environmental limitations can be mitigated and what the mitigation recommendations are.

1.1 Location and Settlement Pattern of Zineshe & Gujini

The project area is located about 20 km south-east of Jozini within the rural environments of the Jozini Local Municipality. The location of this project in relation to its



geographical setting is shown in the locality Map (Map 1). The project area is located within wards 3 and 4. Access to this area is via the Jozini-Mbazwana road branching off on the D1833 from Jozini. Other parts of the area can be accessed through the various road network around the site. The southern boundary of the project area is the Jozini River which extends into the midsection of the area. Map 1 and Figures 1, 2, and 3 show the project area and the general rural and dispersed nature of the settlements. Zineshe & Gujini is a typically rural area characterised by homestead settlement pattern (see Figures 2 and 3). Each homestead consists of a cluster of houses often accommodating more than one family. Homesteads are widely dispersed creating a typically scattered settlement pattern interspersed by large spaces of vegetation. Each homestead is surrounded by agricultural land where crops are cultivated and some domestic animals are kept. The vast expanse of open vegetation between the homesteads is often used for communal grazing.



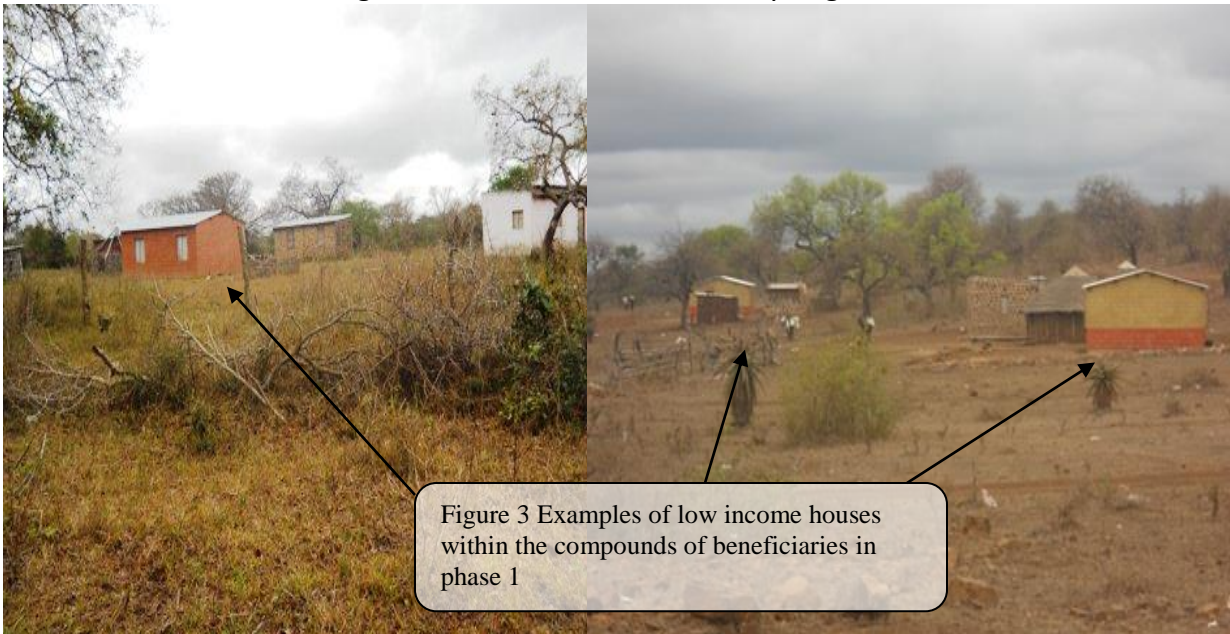
Figure 2 Rural nature of the settlements



Figure 3 Dispersed nature of the project area

1.2 Nature of this Development

Rural housing development is government's housing initiative to provide decent accommodation for needy rural households. All rural housing developments involve low cost structures constructed within the compound of each qualified beneficiary and in some cases, the provision of VIP toilets. Often, one house is built per household (see Figure 2). Rural housing projects do not include any infrastructure development such as road construction. Zineshe & Gujini Housing Project is one of the many rural housing projects described above. In this case, the development involves the construction of low income houses only. At this stage no additional settlement infrastructure such as roads will be developed. Like in all rural housing developments, the Zineshe & Gujini housing project is not expected to follow a formal settlement layout plan. Instead, houses will be constructed within existing homesteads where invariably, significant disturbances to



1.3 Environmental Requirements

Rural Housing Projects by their very nature are low impact projects since they are undertaken within existing homesteads with no infrastructure development. Thus rural housing projects are not listed activities among activities listed in the GNR 38282 of 2014 and the Amended regulations of April 2017 under the National Environmental Management Act 1998 (Act 107 of 1998). Thus, these projects do not require authorisation from the KZN Department of Economic Development Tourism and Environmental Affairs.

Although this piece of legislation does not literally encompass the proposed development, since it involves an 'insitu upgrade' without large scale residential infrastructure development such as roads, consideration of possible adverse impacts and mitigation would be an advantage to both the receiving environment and the beneficiaries. This report has thus been prepared in respect of the principles of due diligence required under the national Environmental Act and the principles of Integrated Environmental management. It is also a requirement of the Department of Human Settlement for this assessment to be undertaken so as to ensure that precautionary measures where necessary, are taken into consideration during the project planning stages to ensure the safety of both the environment and the beneficiaries.

1.4 General Principles Governing the Implementation of Rural Housing Projects

Rural housing projects by their very nature are low impact developments especially on biodiversity and hydrology, for the reasons that they do not involve any other infrastructure development, and that they are undertaken within existing homesteads where land transformation has already largely occurred. The following key development considerations are made in all rural housing planning processes including the development under consideration:

- No development occurs outside of an existing Umuzi (household compound)

- No development occurs on land steeper than the prescribed 1:3 slope
- No development occurs within the 1:100 years floodline
- Most developments already have VIP toilets since the provision of sanitation is a District function. Where VIP is provided as part of a housing project, it is invariably a replacement of an existing pit latrine, with a better sanitation facility, at a more suitable location where necessary;
- No access roads are constructed since each target Umuzi, invariably already has access.

Given these principles, rural housing is largely a low impact development.

2 ENVIRONMENTAL ISSUES ASSOCIATED WITH THE PROPOSED PROJECT

2.1 Topography

Majority of the project site is flattish to gentle sloping, with general slope estimated at between 1:6 and 1:15. This topographical character has resulted in broad valley systems with wet basins. Settlement areas and the general slope character of the project area are shown in Maps 2a and 2b respectively.

Implications for the proposed development

- There are no significant issues regarding topography and slope in the area. Steep slopes are limited in most areas where the settlements are located. However the relatively flat nature of the area has led to the absence of clear drainage lines. This however is compensated for by the sandy nature of the topsoil which is quite permeable, and helping the drainage in the area. Impact of the development on the topography of the area and vice versa are likely to be low.
- Since the homesteads are currently located on relatively gentle slopes, the likelihood of significant earth works is low and therefore the project is not likely to significantly impact on the landscape of the area.

2.3 Drainage Lines and Wetlands and their Proximity to Settlement

The project area is located within the immediate catchment of the Jozini River and its tributaries which form the main drainage system within the development area. (Refer to Map 3 and Figure 4). The flattish and gentle rolling nature of the terrain has resulted in the absence on clear valley systems within the area. As a result, the areas along the basin of the river and its tributaries are quite wet. Also, a few portions of the flatter areas have small dots of wet portions which water may stagnate after heavy downpours. These areas have been identified and shown on Map 3.

The Jozini River and its tributaries leaves large portions of the area to potential flooding. Some of these areas are close to settlements for which reason care must be taken in ensuring that houses are not located in areas that are prone to flood risks. Map 4 shows the areas that are flood prone within the project area.



Figure 4 portions of the broad valley systems and section of the Jozini River.

Implications Relating to Topography for the proposed Development

Given the extensive nature of the wetlands around the river and the flat nature of the terrain it is important that the 1:100 year flood line which is regarded to be the

minimum ecological corridor along rivers and their tributaries (catchments larger than 1km²) be determined.

- Wetlands are major hydrological systems that perform functions of flood attenuation. Appropriate protection is necessary for all major rivers and wetlands in the catchment.
- It is therefore recommended that a buffer of 30m be established along the 1:100 flood lines of the major rivers and along the boundary of all wetlands in the catchment (see Map 3) within which no development should occur.
- Households that may fall within the flood lines should be advised to relocate to safer areas, to avoid the impacts of any future flooding along the surroundings of the main water bodies.

2.2 Level of Sanitation

The provision of sanitation services to municipalities is the function of district municipalities in terms of the Local Government Act. Site inspection of the project area indicates that most households depend on Pit latrines. It was observed that most of these pit latrines are constructed with local materials such as mud and corrugated iron sheets. Some toilets in the area are shown Figure 5.



Figure 5 VIP Sanitation in the area

Domestic waste appears to be generated in very small quantities largely due to the relatively low settlement density (see settlement figures). Heaps of refuse that characterise dense settlements were



not observed in the area. Furthermore, commercial and industrial activities which are major generators of refuse are almost no-existent in the area. The project area is generally a clean environment with no significant issues relating to sanitation and waste.

Implications for the proposed Development

The proposed development involves the construction of houses only and does not include the provision of any sanitation infrastructure. At this stage it does not appear that the proposed development will significantly alter the population density of the area and thus current sanitation and waste situation in the area is not likely to change significantly. The proposed development is therefore not likely to impact significantly on the sanitation and waste condition of the project area. The provision of better sanitation facilities, such as at least VIP toilets need to be considered with future development plans for the area.

2.3 Proximity to Major Hazardous Installation

From visual survey of the area, there is no major hazardous installation currently within or in close proximity to the project area. Furthermore, there are no known current or future programmes aimed at development installations that will constitute major hazards to the communities within or neighbouring the project area.

2.4 Current Zoning of the Land and Landuses

The project area is a typically rural settlement, out-side of the town planning scheme of Jozini Municipality. The main land uses in the area are settlement which occurs in a generally widely dispersed pattern with few clusters of homesteads, and subsistence cropping which occurs in the vicinity of households. Grazing occurs on the extensive open spaces of grassland that separate homesteads and clusters of homesteads. A few

other areas are used for sugar cane plantation (see Map 3). Site assessment of the project area indicates that the transformed land relative to the untransformed is small.

Implications for the Proposed Development

- *The proposed development is a compatible activity with the existing landuse (settlement), and is not likely to significantly alter landuse in the area.*
- *The development is not likely to significantly diminish the current landuse types especially subsistence agriculture and grazing*
- *The proposed development is not likely to impact significantly on the agricultural potential of the area.*

2.5 Ecological Characteristics

2.5.1 Vegetation

The area is characterized by various vegetation types but dominated by Tembe Sandy Bushveld on the eastern segment with small patches of Sand Forest (Figure 8). The mid section to the western half of the site is dominated by two vegetation types namely the Western Maputaland Clay Bushveld and the Makatini Clay Thicket. Small portions along the eastern boundary are covered by the Maputaland Coastal Belt.

Verification of the KZN Wildlife database reveals that almost all these vegetation types though are said to be least threatened, are listed as vulnerable and near endemic. This is probably due to the magnitude of transformation that is currently taking place with the area (see Map 5). Most of the transformations occur around households and a few other areas where agricultural activities are being undertaken. It was observed that vegetation within and around the compounds of the homesteads is either removed completely or significantly degraded (see Figure 6). Vegetation of good nature or of

conservation significance occurs within the open spaces between the settlements mainly in the form of indigenous forests.



Figure 6: Vegetation within the compounds of the households are either degraded or completely removed.

Implications for the Zineshe & Gujini Housing Development

Given the nature of development proposed, it is not expected that there would be significant vegetation removal. This project is expected to follow typical rural housing developments where houses are constructed on the compounds of existing houses. Vegetation within the compounds of the existing houses in most cases has already been removed. The development is thus likely to have less impact on the vegetation character of the areas.

However, the project area has a few critically endangered habitat types and critical biodiversity areas indicated in Maps 6a and 6b. These areas need to be particularly considered during infrastructure planning and implementation. Given that these areas are at the verge of total destruction, no infrastructure must be placed within these areas. Furthermore, a greater management attention should be given to all activities in these areas. It is also important to note that the south western part of the project area adjoins the Isimangaliso Wetland Park (Map 6b) which is a national conservation area and that the development activities in this area must be undertaken with care so that secondary impacts do not extend into the park.

2.6 Existing Significant Archaeological, Historical, and Cultural Sites

Site assessment did not show that there are many materials of archaeological importance in the area. However, it is a known traditional practice that rural communities bury their dead within the confines of the homestead. Given the project will target spaces within the homestead, this development could impact on the cultural resources (graves in the area).

Implications for the proposed development

It is unlikely that the development generally is unlikely to impact on any heritage materials since the development would be confined to the compounds of the existing homesteads only. However, if the development is not undertaken in close participation of the beneficiary households, graves may be disturbed which may cause significant social upheavals. The mitigation for such impact is to undertake the project with the full participation of household heads.

2.7 Existing Infrastructure and Services

2.7.1 Residential structures

The community has poor residential structures some constructed with conventional building materials but the majority with mud bricks and others made of local natural resources such as mud and grass (Figure 7). The poor housing structures emphasize the need for the community to be provided with improved housing.



Figure 7 Low standard residential structure made of mud local wood and corrugated aluminum sheets.

Roads are few and are gravel in nature as shown in Figure 8 below. Most of the roads are very sandy and quite narrow. These roads are linked from the homesteads by footpaths and in some cases vehicular paths. However, it is possible that the road network in the area is currently adequate to meet the transportation needs of the community since majority of households are located along the length of the roads network.



Figure 8 Gravel Roads in the project area

The community has one clinic located at Ophansi a community hall, and a few primary schools. There are also a few secondary schools or any other community facility. Pipe borne water appears not to be available in the community. As a result, residents use drums and wheelbarrows to draw water from the nearby rivers or streams. Others depend on water service trucks. The only pipe infrastructure observed appears not to be functional at the time of site visit. According to some community members they depend on water from the nearby rivers for domestic uses. Although electricity infrastructure traverses some sections of the community, most households are not connected to the national grid (Figure 9, 10, and 11 respectively)



Figure 9 the main Clinic that serves the community within the project area



Figure 10 The community draw water from the rivers and store in various containers.



Figure 11: Schools in the community

2.8 Social and Economic Impact on Community

The project area is an established rural settlement with many of the houses informally constructed. This development is likely to have a positive impact on the community as the provision of houses would improve upon the self esteem and worth of the beneficiary households. Temporary jobs that may be created during implementation could be an economic benefit for the community.

2.9 Risks or hazards to the environment posed by the development

There are no significant environmental impacts that were identified during this assessment. Provided that an environmental management plan is prepared and implemented during construction, the impact of the development on the environmental is expected to be negligible.

2.10 Health and safety of the public

The proposed development is a low impact development which does not involve the establishment of major infrastructure. The development is not located close to any installation that would negatively affect the community. Thus the proposed development is not likely to negatively affect the health and safety of the community.

2.11 Social cost of the development

The social cost of this development is low as the development is likely to improve upon the social conditions of the people. The development would be favoured by the fact that it aims to provide a liveable environment for the beneficiaries.

2.12 Effect of the development on different age groups

This development is likely to be beneficial as children would tend to have a more suitable environment to be nurtured in, the young and economically active group would have temporary employment, and the adults would have a more permanent structure that would not require frequent re-construction as happens with informal structures.

2.13 Medium and long term sustainability of development

This project is likely to be sustainable in the medium to long term as individuals would take ownership of the dwellings, and be responsible for its maintenance and renovations. However, the maintenance of the facilities and services would depend on how affordable the services that are provided are.

3 CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

This environmental analysis is expected to provide the following answers:

- Whether or not there are significant physical, socio-cultural and legal barriers that will merit a no development option;
- Whether there are any significant issues relating to the project
- Whether or not any further studies are recommended and what such studies should entail;
- Whether any identified environmental limitations can be mitigated and what the mitigation recommendations are.

The environmental investigations conclude as follows:

- Are there any significant biophysical, socio-cultural and legal barriers that will merit a no development option;

On the above subject, this environmental assessment concludes that there are no significant biophysical social or cultural issues that would merit a no development option.

- Are there any significant environmental issues relating to the project

On the basis of this investigation, it is concluded that there are no significant environmental issues related to the proposed development. However, the following integral issues need to be considered:

- **Graves are located in households and therefore the location of the new houses should be identified with full participation of delegated households members**

- **The grassland in the area is considered near endemic due to transformation for settlement, agriculture, and other development purposes. The development need to ensure that no grassland is removed at any of the development sites**
- Are there any further studies recommended and what such studies should entail

This assessment did not indicate that any specialist environmental studies are necessary for the area.

- Whether any identified environmental limitations can be mitigated and what the mitigation recommendations are.

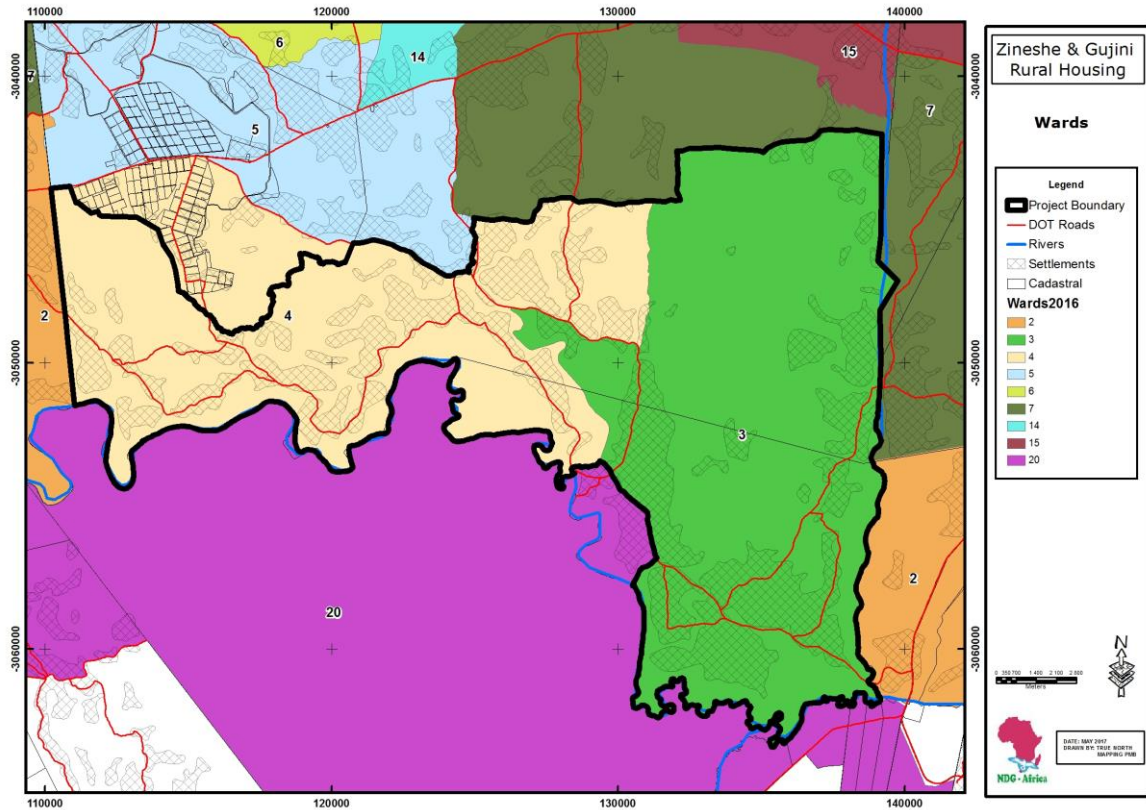
The environmental issues identified relate to cultural effects (graves). However, by the nature of this development the potential impacts are likely to be insignificant. The mitigation proposed for these is sufficient to eliminate the impact totally or reduce them to an insignificant level.

3.2 Recommendations

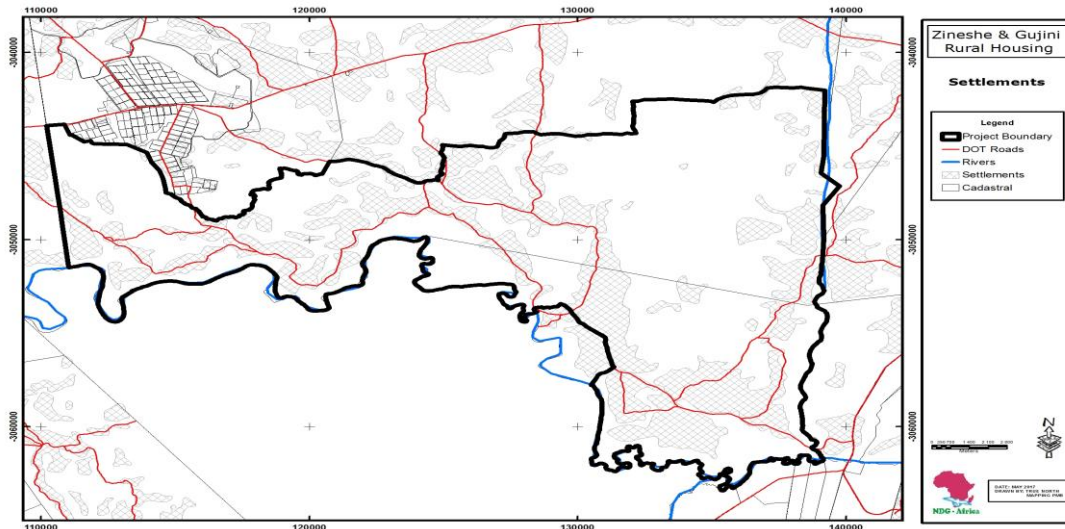
Though houses are located in areas that are a little far from the immediate banks of the river, due to the flat nature of the area, the 1:100 year flood line need to be determined and any households that might fall within these flood lines should be advised to relocated to safer grounds.

It is recommended that the project should be approved and that planning processes should proceed as there are no significant environmental issues relating to the project.

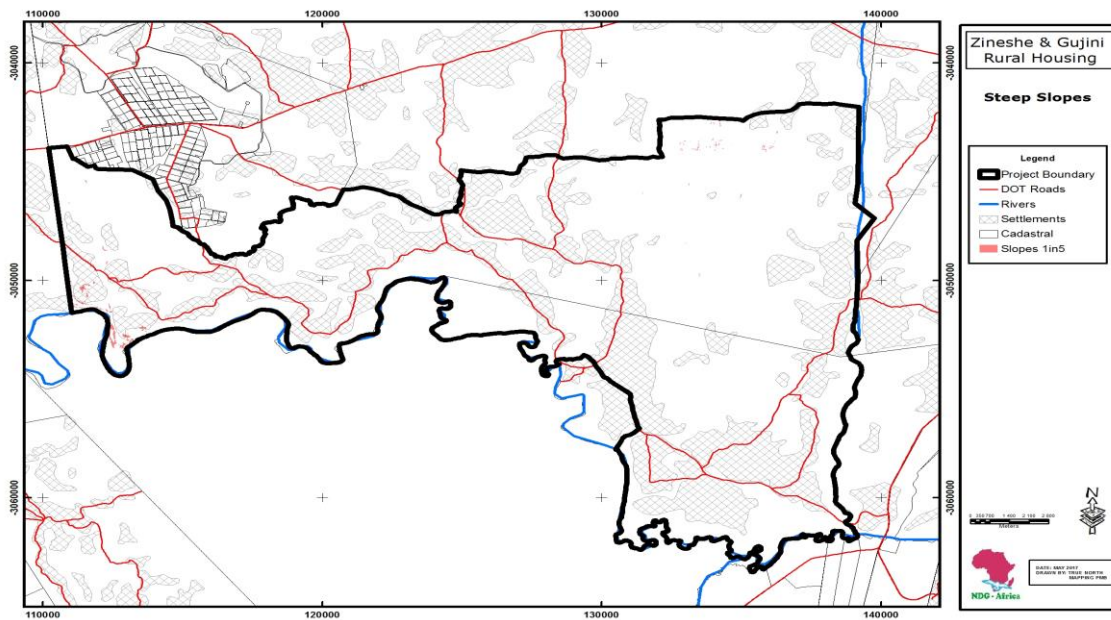
MAP 1: THE PROJECT AREA (WARDS 3&4)



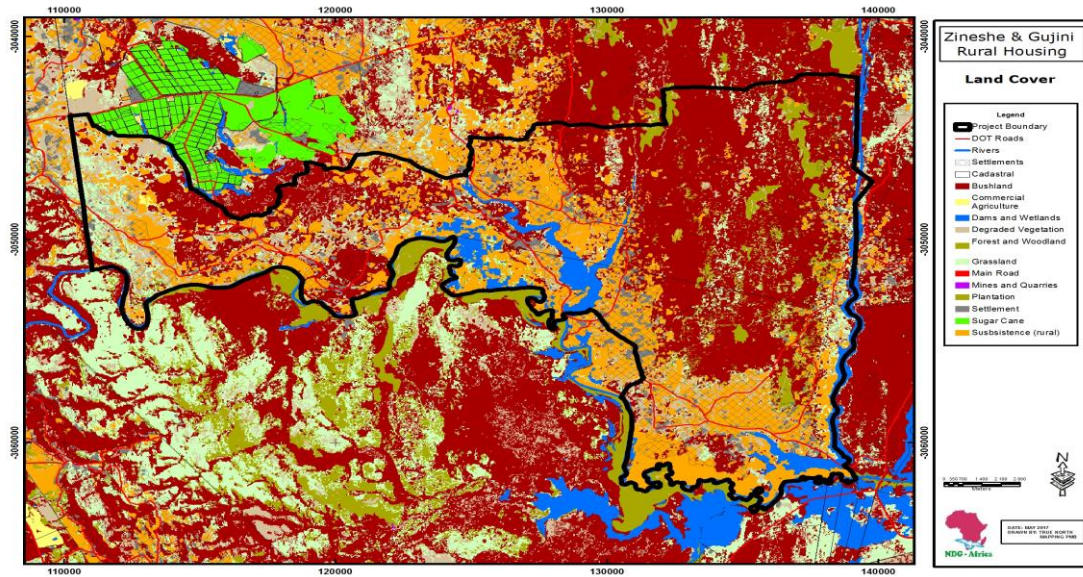
MAP 2a SETTLEMENT AREAS



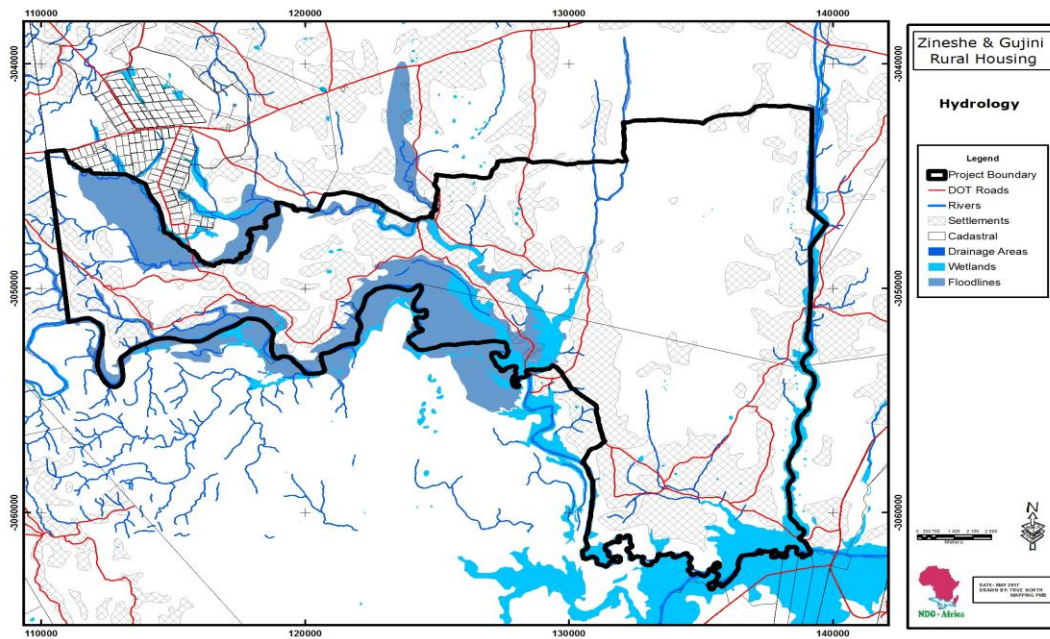
MAP 2b SLOPE CHARACTER OF THE AREA



MAP 3: Drainage lines and wetlands in the project area (Land cover)



MAP 4: FOODLINES WITHIN THE PROJECT AREA



MAP 5: VEGETATION TYPES IN THE PROJECT AREA

