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Natural resources & land use

[Ga-Mametja village in Olifants catchment]

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USAID: RESILIENCE IN THE LIMPOPO BASIN PROGRAM (RESILIM) – OLIFANTS

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Aim of report

This report provides a first update on the progress made so far on the Mametja Case study falling within the larger Natural Resource Management Case study under the Biodiversity theme within the RESILIM-O programme. The report synthesises the current available information on land use and natural resource use, and governance arrangements around natural resources in the Ga-Mametja area and its potential implications for environmental degradation and change, as well as the relation between these uses and the livelihoods of people living within the area. Further plans to address information needs in line with the aims of the case study are outlined. As such one of the main aims of the case study is to inform and assist the recently started land restoration project (LUI project) in the Ga-Mametja area.

Contents

List of acronyms

BR	Biosphere Reserve
BSP	Biodiversity Social Projects
DEA	Department of Environmental Affairs
DRDLR	Department of Rural Development and Land Reform
EPWP	Expanded Public Works Programmes
IAS	Invasive Alien Species
IDP	Integrated Development Plan
Ito	In terms of
IWRM	Integrated Water Resources Management
K2C	Kruger to Canyons
LUI	Land Users Incentive
NRMPs	Natural Resource Management Programmes
PA	Protected Areas
RESILIM-O	Resilience in the Limpopo River Basin-Olifants
SANParks	South African National Parks
SDF	Spatial Development Framework
WfW	Working for Water
WoF	Working on Fire
WfWet	Working for Wetlands
MDGs	Millennium Development Goals

Introduction

General RESILIM-O introduction

RESILIM-O (Resilience in the Limpopo Basin-Olifants) is a 5 year USAID funded project which seeks to reduce vulnerability to environmental change through building improved water and biodiversity governance and management of the Olifants Basin through the adoption of science-based strategies that enhance the resilience of its people and ecosystems through systemic and social learning approaches. The project is structured in two phases: phase 1 (2014-2015) and phase 2 (2015-2017). Phase 1 comprises contextual understanding, synthesis, research, etc. This phase is intended to aid in understanding the multiple drivers of environmental (climate) change within the Olifants catchment. Whilst phase 2 comprises innovation, testing, embedding and institutionalizing of resilience-based practices for systemic management and governance (taking the outputs from phase 1 into action through testing, reflection, and hence institutionalisation).

The project comprises of four themes (Systemic resilience approach, integration and coherency, support for Integrated Water Resource Management (IWRM), support for Biodiversity (BD) conservation in high priority areas, and support for capacity development through social learning). The different themes are designed to work together towards attaining the overarching RESILIM-O goal which is to reduce vulnerability to environmental change (as described above). The overarching objective of the Biodiversity theme of the programme is to conserve biodiversity and sustainably manage high priority ecosystems in the Olifants catchment. The theme has to date focussed mainly on three practices (case studies) in the environmental and biodiversity sector which are restoration as carried out by the DEA Natural Resource Management Programmes (NRMPs), Protected Areas (PA) management and expansion and Biodiversity stewardship, and local level land use planning and decision making (Spatial Development Frameworks (SDF) and Integrated Development Plans (IDP)).
The NRMP case study is focusing on two aspects, namely the DEA *Working for* suite of programmes (Working for Water (WfW), Working for Land (WfL), Working on Fire (WoF), etc.) at a broader scale, and at a smaller scale a Land User Incentive (LUI) project in the Mametja area which is embarking on land restoration.

DEA NRMP land user incentives

General overview & aims of the LUI programme

The LUI programme is a NRM programme under the Natural Resource Management Directorate, Environmental Programmes Branch within the Department of Environmental Affairs (DEA). This programme is funded though the Expanded Public Works Programme (EPWP) within the Environment and Culture sector. The main objective of the projects under this programme is to reduce degradation and restoration of natural resources whilst addressing the prevalent issue of unemployment in South Africa. Additionally, they are also designed towards training and skills transfer of the beneficiaries in order to increase their chance of finding better or permanent employment after the project life cycle.

Through the LUI programme DEA is aiming to address many of the issues prevalent in the *Working for* suite programmes, these include among others working towards shifting the management burden of land to the land users/owners (advocate for biodiversity stewardship), cutting down on bureaucracy within DEA, and involve stakeholders/land users in these project more strongly at the outset of these projects. Furthermore, the LUIs aim is to unlock private sector resources, these resources can be through providing technical support, financial support, etc. Moreover, LUIs seek to contribute to biodiversity stewardship objectives which is that land users become custodians of the land that they live on and use for their livelihoods.

Aims & objectives of the Mametja LUI project

In 2013, an LUI project was approved by the DEA for the Ga-Mametja area to be implemented by SANParks Biodiversity Social Projects (BSP) through the K2C Biosphere in The Oaks, The Willows, Finale & Mabins A villages. A set of criteria (prioritisation) for selecting this area was completed for the area which includes among others the extent of land degradation (soil erosion and dongas in the area), the lack of proper waste management services in the area resulting in wastes being dumped in water ways and dongas, and high unemployment in the area. As such the DEA granted a tender to SANParks (BSP) to implement this project in this area with the aim as well of contributing to the Man and Biosphere objective. Consequently, the Ga-Mametja LUI project seeks to take a holistic approach to combating environmental degradation (soil erosion and donga formation) in the area, this includes attempting to bring all the parties that should be involved to realise this involved that is the department of Agriculture, Maruleng Municipality, the civil society etc.

The main objective of the Ga-Mametja LUI is stated as “to restore and maintain degraded land resulting in improved water quality, reduced erosion and the impact this has on the water quantity and quality as well as carbon sequestration (linked to climate change considerations), improved biodiversity and the sustainable consumptive harvesting of natural resources”. Additional to this is the requirement to improve the livelihoods of beneficiaries through providing decent employment opportunities, supporting a safe and healthy work environment, providing skills and education programs and supporting the establishment of accessible and effective governance and local support systems. To date the project has about 44 beneficiaries within the four villages in Mametja.

Mametja Case study: Aims & Objectives

The aim of this case study is to synthesise the currently available information on the use of land and natural resources in this area and how these are linked to the livelihoods of residents in the area. We also hope to derive a better understanding of how current land use and natural resource patterns may or may not contribute to land degradation, and the implications this might have for ecosystem restoration in degraded areas within Mametja.

Background to Mametja area

The Ga-Mametja area is located in Maruleng Local Municipality (Ward 3), Mopani District Municipality, Limpopo province (24°23'S, 30°33'E), and comprises nine villages namely The Oaks, The Willows (Dingapong), Finale A & B (Mabilaose), Mabins A & B (Ga-Mametja & Bochabelo), Santeng, Sedawa, London (Kgapamadi) and Molalane. The Mametja Traditional Authority is the local traditional authority overseeing these villages.

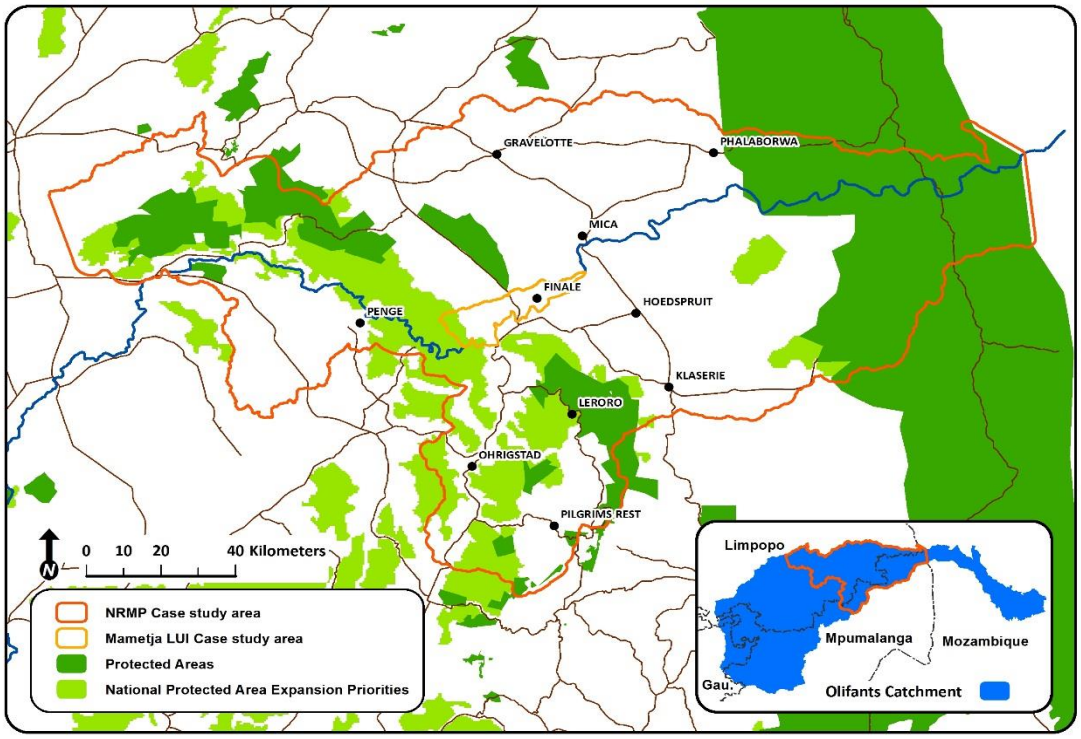

Figure 1: Map showing NRMP programme focus areas (in red) and the Mametja case study area (in yellow) within the Olifants catchment.

The area is located at the base of the northern Drakensberg escarpment adjoining the northern banks of the Olifants River. This area used to form part of the former homeland of Lebowa under the apartheid government. A dialect of SePedi in the Sotho language group is the main language of the local inhabitants, who are the Bakoni ba Mametja. The area falls within the K2C Biosphere Reserve (BR) and within the lower section of the Olifants catchment (Figure 1).

To the north-west the Mametja area is bordered by further communal land in the Sekororo area, which falls under the Sekororo Traditional Authority. To the north-east, east and south it is bordered by a number of commercial game farms, private nature reserves (including the Blyde Olifants Conservancy) and wildlife estates. A number of commercial farms practicing irrigated agriculture (mainly citrus and mango) are also located on the southern bank of the river adjacent to the Mametja area. The Lepelle village on the southern bank of the Olifants River is located to the south west of the Mametja area.

Socio-economic description of Mametja area

In 2011, approximately 39.9 % of the population within the Maruleng municipality were recorded to be unemployed (Census, 2011), with the majority of this percentage residing in the "rural-urban" communities in the municipality (which includes the Mametja area). Previous surveys in the area have indicated very high unemployment rates in the area (Twine *et al*. 2003, Malepe 2013). In 2000, Twine *et al*. found an average of 0.8 formal jobs per household and an average of 22.9% of households with no formal income for Mabins B, Finale A and The Willows villages. Malepe (2013) also found an average of 75.3% of unemployment amongst women in the four villages Finale, Mabins, Oaks and The Willows.

With such unemployment records in the area, it is not surprising that large numbers of households are dependent on various social grants and pension grants for their livelihoods. Malepe recorded an average of 61.3% of women receiving social grants across the four villages, while Twine *et al*. reported an average of 0.6 old-age pensions per households and an average 1.5 migrant residents per household were documented for Finale, Mabins and The Willows in the three study villages (Finale, Mabins and The Willows) (Twine *et al,* 2003 and Malepe, 2013).

In 2001, approximately 67% of households had access to electricity in Mabins and The Willows, while Finale had no electricity. However, majority of households (90%) indicated use of fuelwood for cooking across all the villages, with about 35% increase during winter months. Of interest is the perceived decrease by the local inhabitants of natural resources and land productivity due to inappropriate land use and overharvesting of natural resources. Residents furthermore articulated that this has resulted in longer distanced travelled and additional time in obtaining these resources (Twine & Moshe 2003, Twine *et al*. 2003).

Main land & natural resource uses

Settlements, subsistence cultivation & rangelands

The Ga-Mametja area is mainly characterised by vast areas characterised as being in a natural state in concurrence with other land uses (man-made features) as indicated in figure 2 below. Since, most of the land cover in the area remains in the natural state, it is therefore imperative to ensure that that is maintained and mitigate other problem areas like erosion and dongas for long term sustainability.

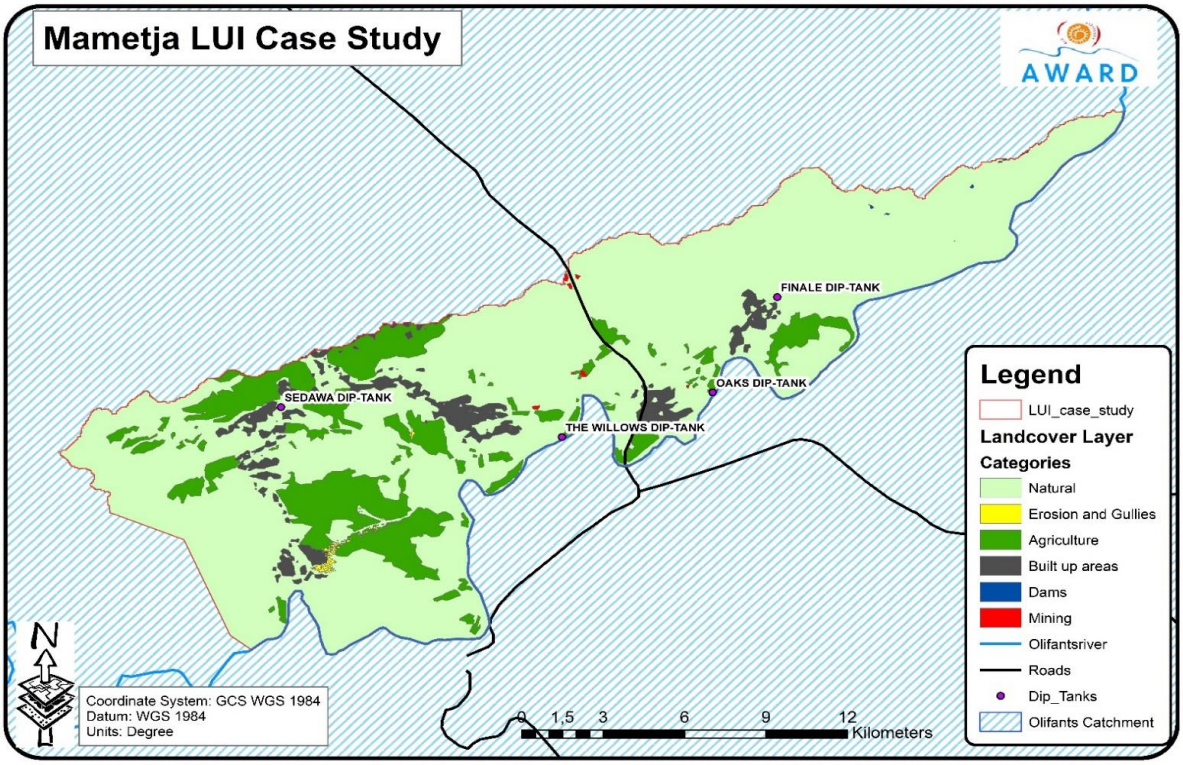

Figure 2: Landcover/use in the Mametja LUI case study area

Two of the major land cover/uses in the Ga-Mametja LUI case study area for agricultural and cultivation purposes and urban built up respectively (Table 1). There exists some pockets of small water bodies (dams) on the north eastern side of the case study. Mining (quarry) sites are also seen and are mainly located along main/secondary roads. The land cover/use in the area can be summarised as follows. The total area surface of the LUI Mametja area measures to 24 284.26 ha.

TABLE 1: SUMMARY OF LAND COVER/USE IN MAMETJA

Landcover/use category	Area covered (ha)	Area (%)
Natural	19 473,98	80,19
Cultivation and agriculture	3 572,87	14,71
Urban built up	1 173,05	4,83
Erosion and gullies	43,69	0,18
Dams	3,92	0,02
Mining	16,76	0,07

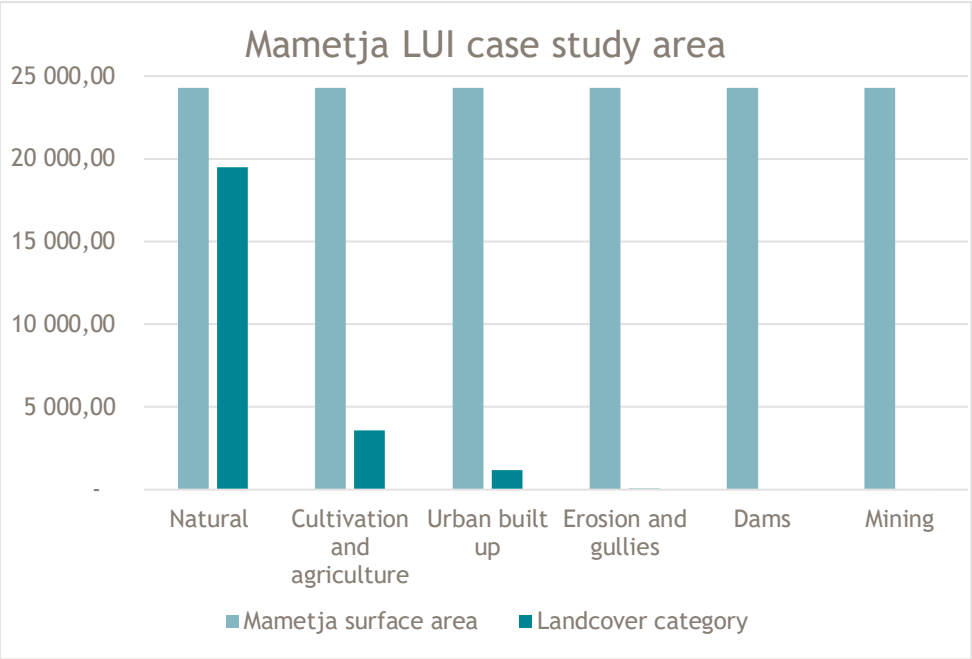

Figure 3: Graphical illustration of Mametja landover/use

Settlement Expansion

Observed trends of settlement expansion in the area has been noted over the years, between 1993 and 2006 an increase of approximately 40% in the extent of settlements was recorded within the K2C Biosphere Reserve. Most of this expansion is detailed to have occurred within the rural-urban, former-homeland areas which are situated at the base of the escarpment in the eastern portion of Maruleng municipality (including Mametja) and across the Bushbuckridge municipality. This settlement expansion occurred mostly through transformation of rangelands, with the rangelands forced to expanded outward and further away from settlements (Coetzer *et al*. 2010, 2013). However, the rate of settlement increase exceeded the rate at which rangelands increased, suggesting that spatial limits may have been imposed on such rangeland expansion by neighbouring land use types (Coetzer *et al*. 2010). Field visits to the area, and discussions with the K2C Environmental Monitors (EMs) in the Ga-Mametja area also concurred that a pattern of settlements expanding outward into cultivation plots and rangelands, pushing both cultivation plots and rangelands further out and away from settlements.

Although cultivation and agriculture remains the biggest land use in the area, there have likewise been observed trends over the years in Ga-Mametja of abandonment of old fields (deagrianisation), this has been more evident along the big gully and erosion area (Figure 2 in yellow)). From 2010 to present, satellite imagery shows that some old fields have had some re vegetation and are slowly becoming more dense and similar to undisturbed natural vegetation. From a study conducted in the wildcoast of South Africa, Shackleton *et al*. (2013) alluded that drivers such as migrant labour in households, state social grant and pension funds are some of the bases for abandonment of fields. Nevertheless, a large number of active cultivation plots are visible within the area, however, to this end it is currently unclear as to how many households engage in subsistence / small scale commercial agriculture. Furthermore, the EMs also indicated that a few farmers planting crops for commercial purposes did operate within the area and that the Limpopo Department of Agriculture extension service also has a tractor that comes in the area helping residents with ploughing of their plots.

Whilst crop fields have been slowly declining over the years, whether these are substituted for rangelands is unclear at this point. Additionally, livestock ownership, and grazing patterns are to this end not known as well. However, Twine *et al*. 2003 reports that livestock ownership varied substantially across villages in Ga-Mametja, an average of about 33% of the households in the three villages were recorded to own cattle, 56% owned goats, and 4.6% owned donkeys. Furthermore, it is of great importance to have a clear understanding of the grazing patterns and the governance thereof in order to combat potential impacts of unsustainable and uncontrolled grazing patterns on the environment. The following is a summary obtained from the various dip-tanks in the area indicating the number of cattle in the area of interest.

TABLE 2: NUMBER OF CATTLES AS RECORDED AS DIFFERENT DIPTANKS ACROSS MAMETJA

Diptanks	Current total cattle	Number
Finale	1229	123
Oaks	1295	118
Willows	1437	184
Mabins/Bochabelo	2015	155
Sedawa a	1509	267
Sedawa b	1861	26

It appears that there is large numbers of cattle ownership across the four villages in Ga-mametja. It is therefore of utmost importance that in the quest of combating soil erosion in the area, knowledge of grazing patterns are known and monitored for long term sustainability of rangelands. Additionally, as soil erosion is of a result of multiple drivers, it is therefore important that livestock owners are engaged and educated as to how inappropriate rangelands management inconjuction with inappropriate agricultural practices, overharvesting and land use planning favours soil erosion and the formation of dongas in the area.

Main natural resource use in Mametja

It is widely known around the world that societies depend heavily on natural resources provided by their immediate environment as these resources play a major role in people's livelihoods (food security, secure income etc.), more especially in rural communities. It is no different in the South African context, with heavy dependence on natural resources experienced in poverty and poor serviced rural communities. Majority of the Ga-Mametja inhabitants depended on natural resources for their well-being, this including both for consumption purposes, security purposes and cultural/recreational purposes as the area is predominantly characterised by high unemployment rates, and poverty.

This has also been confirmed by previous studies in the area which have indicated extensive use of a range of natural resources by residents (Table 2 as from Twine *et al*. 2003). In 2000 fuelwood use was recorded to have been utilised on average in 97% of households across the three abovementioned villages, with an average of 4510 kg of fuelwood used per household per year (Twine *et al*. 2003). Even though 67% of households had access to electricity, only 13% used this as an energy source for cooking (Twine & Moshe 2003).

TABLE 3: PERCENTAGE OF HOUSEHOLDS (AVERAGE ACROSS MABINS, FINALE & THE WILLOWS VILLAGES) USING VARIOUS RESOURCES IN MAMETJA IN 2000 (FROM TWINE ET AL. 2003).

Resource	Percentage households	Amount	Value
Wooden utensils	100	8.1	R29.30
Grass handbrooms	100	4.1	R24.60
Twig handbrooms	100	3.7	R17.80
Fuelwood	97	4510 kg	R587
Wild herbs	97	68.9 kg	R1544
Wild fruit	95	128.2 kg	R1026
Edible insects	93	72.2 l	R565
Fencing poles	83	8.5	R47.40
Weaving reeds	82	1.5	R70.10
Fish	60	N/A	N/A
Bushmeat	56	2.9 kg	R35.20
Housing poles	54	0.4	R3.90
Medicinal plants	52	N/A	N/A
Thatching grass	47	10.4 bungles	R8.70

Twine *et al*, 2003 reports that the total direct-use value for the 110 households interviewed across the three Mametja villages in 2000 amounted to an average of R3959 per household per annum with the greatest value coming from Wild herbs and fruits, fuelwood, and edible insects. It is for these reasons that concern are raised against unsustainable harvesting of natural resources as it poses a threat to the livelihood options for the residents in rural communities. Impacts of unsustainable harvesting of natural resources in the Mametja area on people's livelihoods includes the need to purchase resources or alternatives and increase time and distance travelled to get the resources amongst others whilst environmentally will be increased soil erosion due to poor vegetation cover, loss of biodiversity etc.

Governance & management re natural resources & land uses

Before 1994 in South Africa, tribal institutions were recognised as the principal form of local government in the former homelands overseeing the use and management of natural resources. During the apartheid era, a lot of close, corrupt ties were perceived to have transpired by local communities between traditional leaders and the government and thus has led to a widespread of mistrust in the traditional authority (Sarah ed. King, 2005). It is also well documented that the change in socio-economic characterised that accompanied democracy in south Africa has led to the poor widespread notion of traditional authorities as legitimate institutions to oversee/regulate resource and land use access and utilisation which has led somewhat to the rapid decline in ecological integrity (through unsustainable harvesting and use of resources) over the years. Furthermore, to this end, it is unclear in most South African rural communities as to who is the rightful custodian overseeing natural resources and landuse. The Department of Rural Development and Land Reform (DRDLR) has recently developed a framework which seeks to clear governance issues in communal lands. This is a window of opportunity where RESILIM-O can help facilitate and interrogate the applicability of framework process going forward.

Twine and Moshe, 2003 points out that even though majority (83%) of the respondents in Mametja area had a general consent that natural resources and land uses should be governed through the traditional authority independently or in partnership with other institution. Furthermore, Twine reports that a sense of entitlement to the environmental resources existed among some interviewees i.e. about 14% of the respondents. With the growing unemployment rates, hunger, freedom and democracy, and lack of respect and policing by the traditional authority were are some of the main reasons for disobeying the rules set out by traditional institutions in the areas, (Twine and Moshe, 2003). The EMs also indicated that different governance arrangements exists under the Ga-Mametja traditional authority e.g. People living in The Oaks buy their farming fields whereas people in other villages don't pay anything and therefore choose the area to plough. Therefore, clarity ito governance is a matter of urgency in order to achieve sustainable natural resource and land use management in rural communities.

Lack of proper land use planning and clear governance arrangements and thus allocation of landuse in the majority of the former homelands plays a vital role in the mismanagement of such uses. In the Ga-Mametja area, similarly lack of proper spatial land use planning exists and thus has led to improper land uses and unsustainable harvesting of natural resources. With the SDF and IDP acting as vehicles to ensuring appropriate spatial land use planning, sustainable use and management of natural resources (mainly water and biodiversity) in the area. It is therefore important that an integrated approach is developed for the Ga-Mametja area in conjunction with Maruleng Municipality and the local stakeholders as to inform SDF and IDP process. It is therefore worth noting that RESILIM-O has been involved in the process of informing the SDF and IDP processes for the Maruleng municipality in order to inform some of the issue mentioned above.

Potential impacts of various land uses & natural resource use on land

Natural resources harvesting

Literature supports the notion that the majority of rural communities in South Africa depend heavily on natural resources for their livelihoods (Twine *et* al, 2003, Matsila *et al*, 2012 and Twine and Moshe, 2003). Post 1994, the government of south Africa embarked on an electrification program to ensure that citizens have access to electricity for basic daily uses (cooking, heating and lighting etc.). However, still to date rural communities still harvest wood for fuelwood as a source of energy, this mainly because of the high costs associated with alternative energy sources. Natural resources offers communities cheap, free, and reliable sources and supply of energy to meet their daily essentials and hence majority of these communities still depend heavily on natural resources. Example: In comparison with electricity, fuelwood offers the cheapest, free and reliable source of energy to the majority of rural communities in South Africa. Based on the important role that fuelwood plays in people's livelihoods, it is therefore imperative to ensure sustainable utilisation of such a natural resource for long term sustainability.

Overharvesting of natural resources particularly fuelwood as a source of energy potentially exposes the ground to water and wind soil erosion and thus affecting the productivity of land which the inhabitants depend on primarily. In Ga-Mametja , most of the residents indicated that one of the contributing factors to soil erosion was overharvesting of trees for housing poles, fencing and fuelwood, moreover that excessive soil erosion aids in the formation of dongas in the area (Twine and Moshe, 2001, unpublished) as there is little ground cover left. In Ga-Mametja, a number of dongas or eroded areas are evident, hence the LUI project being implemented in the area, these can be seen from aerial photography and maps produced for the area (Figure 2 and 4). When overharvesting occurs, it is most likely that people move to other areas where there still exists abundance of resources and thus degrading our environment even further. Matsika *et al*, 2012 points out that overharvesting may take place due to selective harvesting of natural resources, mainly tree species.

Figure 4: Google imagery of some eroded and gully areas in Mametja

Settlement expansion & impact on surrounding area including rangelands & cultivated fields

During the apartheid regime, only 13% of the country was delineated as land for occupation by blacks yet expected to accommodate 85% of the population. Hence most former homelands are characterised by high population density, poverty which acts a primary driver for significant exploitation of natural resources and land cover transformation (settlement areas expansion). Settlement expansion especially in rural areas (predominantly at the base of the escarpment in Maruleng municipality) has increased by 39.7% within the K2C BR. Furthermore, individual settlements areas have become denser suggesting more utilisation of the settlement space (Coetzer *et al*, 2010).

According to Twine and Moshe, 2003, the majority of the inhabitants in the Mametja area recognised that population growth was a driving force behind resource depletion and land transformation, about 70% of the respondents mentioned this link of population growth and resource depletion and that this has led to more clearing for settlement space. Likewise degraded areas occur mainly adjacent settlement areas, (as more clearing occurs for building spaces, thus exposing more ground making it more susceptible to soil erosion and degrading the productivity of land). A lot of degraded areas (dongas) occur in the Mametja area and are mainly occurring within the vicinity of settlement areas and around crop fields suggesting that the dongas are human induced.

Waste disposal (including nappies) into donga/drainage lines

Waste is a major problem throughout South Africa and has been recognised for years, however, little is done to address this rampant problem explicitly in rural communities. South Africa generates roughly over 42 million m^3 of solid waste annually (Malepe ed DEAT, 1999), this is envisaged to increase annually with the population growth. The four villages in Mametja which are Finale, The Oaks, The Willows and Mabins are poorly serviced with no proper waste disposal and collection system in place. Malepe 2013 argues that socio-economic characteristics such as income, occupation, age, level of education and type of household plays a role in the manner the residents (with emphasis on women) dispose their wastes. Hence a need for environmental awareness and education in the villages to ensure that the residents have the ability to identify environmental issues, their impacts on the environment and livelihoods and possibly come up with mitigation measures within the respective villages.

Poor disposal of wastes persists in the villages due to lack of essential waste disposal services. Consequently, residents have resorted to dumping their waste in dongas, rivers, veld or burn them. Majority of the inhabitants mentioned that unrestrained waste disposal in the villages makes the environment untidy (Aesthetic value) and can potentially be harmful and dangerous to people's health (Malepe, 2013). Furthermore, waste disposal particularly disposable nappies in water ways or in dongas poses a major health risk to aquatic biota and people's health who are dependent on the nearby rivers water for domestic purposes.

Figure 5: Waste disposal in waterways and nappies disposed on an open space in the Mametja are (Photo by K2C BR)

Cultivation practices: contouring, etc.

Literature suggests that former homelands are characterised by high human and livestock densities, overgrazing, soil erosion and the loss of palatable grazing species and persistent bush encroachment as people were previously confined to these areas under the apartheid regime (South African Review).It is no different in this former Lebowa homeland. Same patterns as describe above exists in the area. It is for this reason that Mametja area was identified as one of the areas for the implementation of the LUI project to combat soil erosion and the interlinked impacts this might have on the environment, people's health and livelihoods.

In order to inform a more integrated approach and long-term outcome, it is of outmost importance that the project takes an integrative approach. This will include among others issues described above, cultivation practices in the area etc. RESILIM-O plans to take this forward and have a clear picture of all the cultivation practices in the area.

Potential methodology for further survey

Participatory Learning & Action (PLA)

Recognising that the local inhabitants are more knowledgeable and more likely to accept findings of work conducted in their area if they are from the beginning of the process involved. RESILIM-O proposes the participatory learning and action (PLA) approach to get an in-depth, well informed understanding of the Mametja area. This approach allows active participation of members engaged with, analyse and propose realistic interventions that shape communities livelihoods. This methodology evolved from rapid rural appraisal (RRA) and participatory rural appraisal (PRA), it was developed as an alternative method of data collective in communities as opposed to extractive research (Appel *et al*, 2012). PLA comprises a range of approaches (tools) used when engaging with communities to facilitate a collective learning and analysis through visual methods, however, for the Mametja LUI case study area, the proposed methodology is participatory mapping and/or timelines.

Participatory mapping

Involves capturing the information about a community in a pictorial representation. This tool allows maximum capturing and understanding of a community on a local perspective and reality. It is mainly used as a baseline assessment of a community, enabling the members to share their experience of their space in an informal manner while exploring community needs and helping inform proper interventions (Appel *et al*, 2012).

Timelines

Timelines are a type of diagram that help to record changes in a community or environment over time. This allows community members to note important historical events and potentially these events might have helped shaped how the community or environment is in a current state (Thomas).

Describe system of how all above elements are related

Various human activities on the environment have been associated with land degradation/ transformation over the years. Literature shows that land use practices and natural resources harvesting play a major role in the major environmental problems (more especially soil erosion) facing the country to date (Coetzer 2010, Twine *et al*, 2003). Moreover, with rapid population growth in South Africa and rural settlements growing, more land is being cleared for development purposes, thus transforming the land cover from a natural state into an impacted one which impacts on local biological biodiversity and land productivity. Likewise, with high poverty rates that South African rural communities are faced with, in order to supplement income and food security they are thus heavily dependent on harvesting natural resources(fuelwood, grass species, medicinal plants etc.) and land uses (crop farming, garden plots etc.). However, harvesting and land use practices should be practiced sustainably so as to maintain the benefits derived from them and preserve it for future generations.

Additionally, different governance arrangements around natural resource use and land uses also play a vital role in the way natural resources and land uses are governed i.e. access and control and ultimately the overexploitation and degradation of the land. Additionally, Malepe 2013 notes that socio-economic factors similarly play a vital role in how communities interact with the environment and concludes that environmental awareness and education is required to ensure that communities become aware of the impacts that their practices pose on the environment.

Further information needed

- More detail on main land uses (livestock grazing on rangelands and subsistence cultivation) and natural resource uses and how these impact on landscape, especially soil erosion and related forms of degradation.
- More information on natural resource use specially focusing on fuelwood harvesting and use
- Current governance mechanisms (control of access, etc.) in relation to the land and natural resource uses. Potential ways of addressing these impacts and the drivers behind these.
- Livestock: the number, area used, number households with livestock (cattle, goats), how are these managed especially ito ranging
- Cultivation: number of households with cultivation fields, number of fields, field size, how are fields used/planted/maintained

RES-O involvement & roles so far

Advisory committee

RESILIM-O has been involved with the LUI project in Mametja acting as an advisory committee together with Maruleng municipality and the Department of Agriculture Forestry and Fisheries (DAFF). Our role involves providing input and guidance concerning some aspects of the project (been involved in putting together the proposal for the project in Mametja and providing input on technical interventions required, assessing the degraded extend of the dongas in the area and possible interventions to combat the dongas in the area).

Contractor interview and selection (related issues)

RESILIM-O together with Maruleng municipality and DAFF have also been actively involved in the process of selection and shortlisting of contractor candidates. Following these, we conducted interviews for the respective four villages (Mabins, The Willows, Finale and The oaks). Selection and interviews were conducted in the month of July 2014. The interviews were conducted fairly and successfully which after consultation by the K2C with the traditional authority of the four villages to check whether the top candidates met the EPWP criteria, contractors were selected and notified of the outcome. There were minor issues raised by dissatisfied complaints who brought forward letters requesting clarity on the criteria used to select the contractors. The advisory committee together with the K2C responded to the letters of the complainants clearly stating all the steps followed and the criteria used for the appointment of the candidates.

Further LUI projects in the catchment

The LUI in the Mametja area is one of the many that are currently running within the Olifants catchment. Currently to our knowledge there are about two LUI's that are within the Olifants: one is the HADEF (FRoHG) is Hannesburg which will be working in the Wolkberg nature reserve and Mokganyaka around flagbushilo dam? Both these two LUI projects will be embarking on invasive alien plants (IAP). These two LUI projects are falling under DEA (WfW)

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The Association for Water and Rural Development

AWARD is a non-profit organisation specialising in participatory, research-based project implementation. Their work addresses issues of sustainability, inequity and poverty by building natural-resource management competence and supporting sustainable livelihoods. One of their current projects, supported by USAID, focuses on the Olifants River and the way in which people living in South Africa and Mozambique depend on the Olifants and its contributing waterways. It aims to improve water security and resource management in support of the healthy ecosystems to sustain livelihoods and resilient economic development in the catchment.

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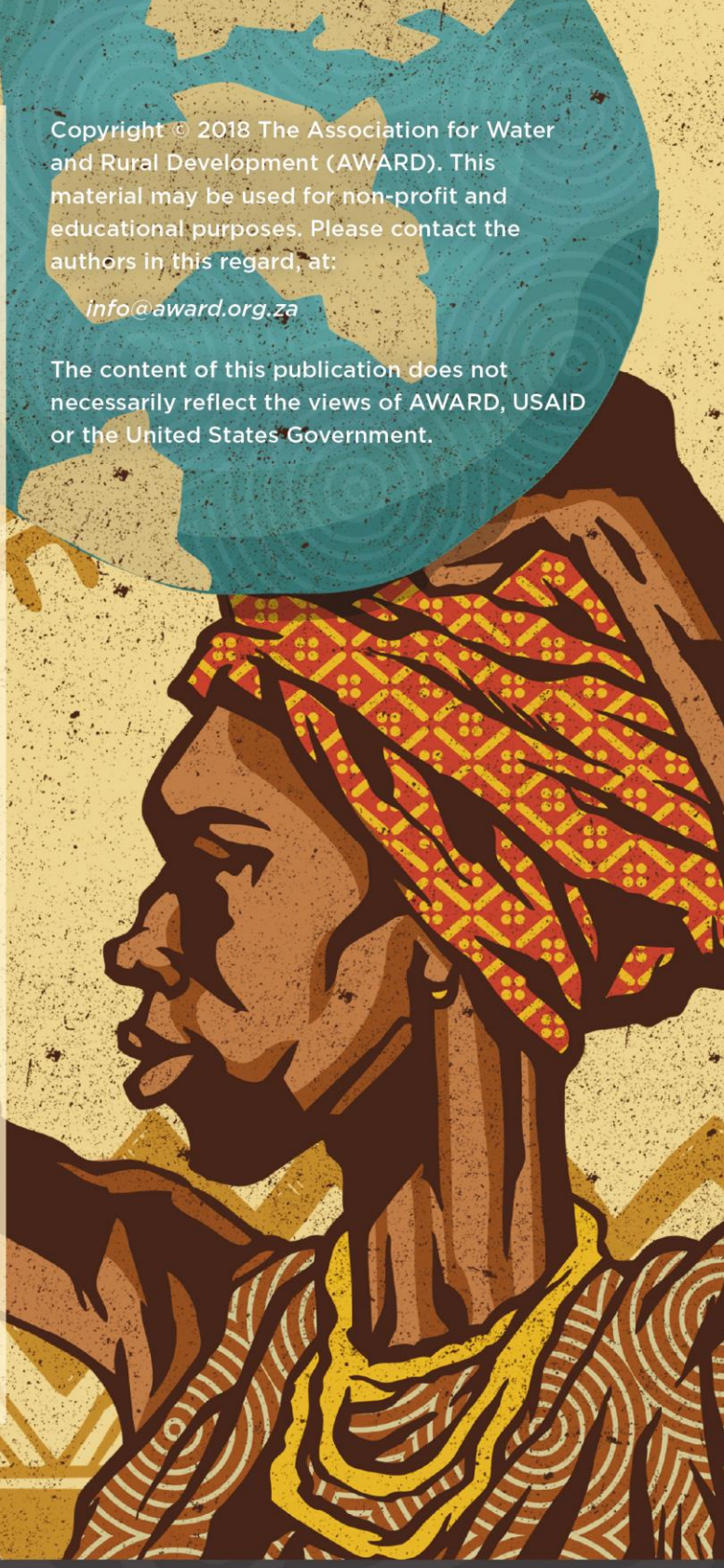
About USAID: RESILIM-O

USAID: RESILIM-O focuses on the Olifants River Basin and the way in which people living in South Africa and Mozambique depend on the Olifants and its contributing waterways. It aims to improve water security and resource management in support of the healthy ecosystems that support livelihoods and resilient economic development in the catchment. The 5-year programme, involving the South African and Mozambican portions of the Olifants catchment, is being implemented by the Association for Water and Rural Development (AWARD) and is funded by USAID Southern Africa.



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