INSTITUTIONAL DIMENSIONS OF WATER RESOURCE MANAGEMENT IN SOUTH AFRICA: SOCIO-CULTURAL PERSPECTIVES

Report to the
Water Research Commission

by

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WRC Report No. 1698/1/09
ISBN 978-1-77005-912-2

November 2009

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EXECUTIVE SUMMARY

Background

Water is an essential resource in the lives of all South Africans and South Africa is a water-poor country. Hence it is essential that South Africa's limited water resources should be managed with great care in order to sustain people's lives, including those of the poorest living in rural areas. The transition to democracy in 1994 in South Africa paved the way for a law reform process, which resulted in new legislation that encapsulates the principles of equity, sustainability and efficiency as enshrined in the Constitution. This law reform process saw the repeal of old Acts such as the 1913 Land Act and the 1956 Water Act, to make way for new Acts such as the National Water Act (NWA), no. 36 of 1998, and the National Environmental Management Act (NEMA), no. 107 of 1998. The NWA developed strategies such as the National Water Research Strategy (NWRS) (2004) to ensure equitable and sustainable water resource management (WRM) through the establishment of new water management areas (WMAs) and new water management institutions (WMIs).

An important feature of these WMIs, namely the Catchment Management Agencies (CMAs) and Water User Associations (WUAs), is to ensure an integrated approach to WRM by devolving power to manage water resources to relevant stakeholders at the local level. The new structures in the NWA make provision for newly elected local officials within the water management structures. One of the main challenges of these structures is to integrate informal rules and cultural practices that govern water access and use and to define the roles and responsibilities of traditional authorities. Therefore, the rationale for this study was to understand the relevance of socio-cultural issues in the new WMIs in South Africa, with special focus on the WUAs.

Objectives

The following were the main objectives of the study:

- Investigate and understand the effectiveness of new WMIs, with special focus on the WUAs.
- Assess the relevance of socio-cultural issues (traditional governance systems, cultural and religious practices) in the new WMIs in South Africa.
- Identify typical WRM problems that arise as a result of lack of understanding of the socio-cultural dimensions of WRM.
- Propose recommendations on the role of traditional leadership and cultural practices in the management of water resources and on mechanisms for strengthening institutional arrangements at the local level.

Approach

This research utilised methodological and investigator triangulation and employed various methods including workshops, transect walks, interviews, review of relevant documents and archival materials, as well as field observations. The use of multiple data sources to examine the same dimension of a research problem enhanced the validation process, by ensuring that weaknesses inherent in one approach were counterbalanced by strengths in another. Multiple observers in the research process also enhanced the reliability of the data by comparing data from different individuals for consistency.

The Mzimvubu to Keiskamma WMA no. 12, in the Eastern Cape, was selected as a research site as it illustrates typical WRM challenges in rural South Africa. Within this WMA the jurisdiction areas of two adjoining WUAs, namely Masikhanye and eDikeni, were designated as the study area. At the outset of the research, participatory workshops were held with members of these WUAs in order to gain information and insights on cultural and religious practices associated with water use, as well as the role of traditional governance systems in WRM in the area. A secondary purpose of the workshops was to identify and discuss issues and challenges regarding the process of establishing the WUAs.

In the study area, transect walks were undertaken with members of the WUAs, in order to identify areas and sites, in or adjacent to water courses, that were considered important in terms of religious and cultural practices. These transect walks were also important in validating the data from the workshops. Following these walks, important sites where cultural practices and religious ceremonies were practised, were demarcated on a map. This information was then discussed and verified with a broader group of WUA participants, including interim WUA committee members, at workshops held in both WUAs.

Semi-structured interviews were also conducted with key stakeholders involved in water provision and management in the study area. The interviews focused largely on investigating the role played by traditional leaders and other functionaries, customary rules and cultural practices in historic and existing WMIs in the study area.

Conclusions

Role of traditional governance systems and customary practices in water management

The findings from this research reveal that the authority of traditional leaders in terms of water management since the pre-colonial era has been eroded. More than 75% of the representatives of the Eastern Cape House of Traditional Leaders acknowledged that they were not well informed about the current developments in WRM in South Africa. State governance systems through State agencies such as the Department of Water Affairs and Forestry (DWAF), the Department of Agriculture (DoA) and water service authorities have now assumed authority for water provision and management in the Eastern Cape Province.

In terms of the policy framework and legislation concerning WRM in South Africa, the new institutional dispensation which involves devolution of power to CMAs and WUAs is mainly focused on water provision and demand management. On the other hand, the traditional governance system in many rural areas has a common pool resource management function with regard to ownership, access to and use of water, which involves decision making influenced by informal rules and customary practices. Even though the CMAs and WUAs seek to integrate local stakeholders, the overriding purpose of these new WMIs is to implement State policy and laws. Hence, there is no explicit requirement for traditional governance systems to be incorporated into the formulation of new local water management systems. Thus, the extent to which these traditional governance systems can be integrated into new water management structures and systems is dependent on the individuals driving these processes.

However, many rural areas in South Africa have plural legal systems and customary rules. Land and water resources are thus regulated by different legal provisions and institutions, including statutory and customary law. Moreover, as a common pool resource, water requires joint management and decision making as neither State nor the local communities can effectively manage water alone. Nevertheless, integrating the dominant State driven and the community based common pool system will definitely present challenges to policy makers as the systems could potentially clash.

Therefore, this research suggests that there seems to be limited space in these new WMIs at the local level for the application of customary rules, because most of the individuals who are responsible for the implementation of the WUAs are answerable to the State institutions such as DWAF and district municipalities. Hence, if new WMIs do not engage with traditional governance systems, these new institutions are likely to marginalise and replace these customary systems which contribute to WRM objectives. The repercussions of this could be negative for marginalised villagers who are more acquainted with indigenous knowledge systems and customary laws found within traditional governance systems.

This research also indicates that remnants of traditional governance systems concerning water management still play an important part in the way people think and act in regard to the use of water resources. Moreover, traditional leaders still play an important role in their communities mainly with respect to conflict resolution and land allocation. Given that decisions regarding use of land are integrally linked to water allocation systems, an understanding of these traditional systems should contribute to a more integrated and relevant management system. Traditional management systems may also be effectively used for water management because they are localised (e.g. chiefs and headmen), as compared to conventional systems which require many more resources to penetrate to the local level.

Common pool management versus demand driven management

The new governance framework for WRM is underpinned by principles of integration, equity, efficiency, participation, devolution and sustainable use. The framework seeks to address past inequities and to ensure access to water resources for all, especially the marginalised sectors of society. The new WMIs encompass the government's intention to devolve certain management responsibilities and decision-making powers to local water users through the CMAs and WUAs. However, the research indicates that these WUAs have a dual function. They nurture a common pool regime for resource management at a local level, but also provide a mechanism for water demand management. These are potentially conflicting aims and consequently tension is created between promoting a community based approach to managing local water resources and imposing a State-driven agenda to achieve efficient WRM, which is based on rules and systems developed by the government. Consequently, there is confusion amongst stakeholders, particularly at the local level, regarding the exact objectives, functions and powers of the WUA.

The current approach employed by DWAF to establish WUAs is not achieving common pool management outcomes, as it is State-driven. Such State-driven initiatives have in-built problems because they are not local initiatives. Local stakeholders do not fully understand the State's agenda with respect to devolving aspects of decision-making to the local level. Power relationships are unequal, both within the local community and between it and other institutions at local, provincial and national level (traditional leaders, municipalities, water service providers, DWAF, etc.). For example, communities have to deal with government departments and negotiate with local political entities and so certain groups and individuals are likely to dominate. Also, the local communities are not actively participating in the process and creating their own rules regarding resource use and management.

Institutional dimensions

One of the objectives and challenges of the NWRS is to devolve certain management functions and decision making powers to the community level so that water resources can be managed by the community through the WUA. The WUAs aim to become self-sustaining institutions that are community driven and can perform all the intended functions delegated to them. However, the study revealed that these WMIs in resource-poor areas such as Eastern Cape lack capacity, skills and resources to fulfil their functions. To assist the WUAs in achieving their objectives and functions, there is a need for a type of co-management partnership between the State institutions such as DWAF, and agencies such as WUAs and other stakeholders. If this collaboration occurs, these new local level WMIs can benefit from State input with its knowledge, technical expertise, experience and resources, as well as the skills and input from other stakeholders involved in WRM.

Local resource users also have an intimate knowledge of the local area and conditions within

which water resources should be managed, but lack staff and technical and administrative skills to manage them. Over time, as their capacity is developed and new skills are acquired, the WUAs can take on more management responsibilities and decision-making functions, and move towards obtaining greater powers within local institutions. Therefore, as the process develops and capacity is developed, there will be movement from a State-driven to a user-group-driven co-management arrangement. The unequal power relations that are evident between the WUAs and other institutions need to be recognised within this co-management arrangement.

Although the NWA and associated policies and guidelines emphasise the need for co-operative governance, in practice this is not occurring in the study area. There is a need for both horizontal and vertical co-operative governance in order to build capacity of the WUAs and enhance WRM. Also, due to the fact that water is so fundamental to economic and social development in rural areas, there is a need to strengthen linkages with other relevant government departments and institutions which have an influence on WRM at the local level.

Despite the existence of policies and guidelines on public participation, it appears that the current procedures and criteria for selecting participants to attend workshops, to serve on committees or represent the needs and interests of a particular community are inadequate. Furthermore, the current opportunities for public participation are limited and the methods employed do not facilitate active engagement of all groupings, especially marginalised groups. If the capacity building and public participation processes do not empower stakeholders and the marginalised sectors of society, they remain passive observers in a State-driven process.

Recommendations

Based on the findings of this research the following recommendations are made:

- *Clarify the role of traditional leaders in the new water governance framework*

Although there may be conflicting agendas between the traditional leaders and the State driven strategies, the traditional leaders need to be informed about the new WMIs. Empowerment of traditional leaders can also assist in the establishment and efficient functioning of WUAs, as they can help to inform their communities of the government's rationale for and approach to WRM.

Traditional leaders have an important role to play in WRM in South Africa and should be involved in development of national water policies and strategies. Although their status varies from area to area, they still play an important role in land allocation and consequently the management of natural resources, including water. Therefore, their involvement in the new

WMIs is desirable and necessary. Ongoing research into their roles and responsibilities in these WMIs is required.

- *Integrate cultural norms and practices into WRM regimes*

Policy makers should investigate and better understand cultural practices and informal rules related to water management in rural communities where they are still practised. Although traditional norms and practices surrounding water management may conflict with State initiatives, they need to be recognised by the State so that the communities feel their values are being incorporated into WRM systems.

- *Clarify and communicate the functions of WUAs*

This research indicates that WUAs have a conflicting dual function, namely to maintain a common pool regime for resource management at the local level, but also to provide a mechanism for water demand management. Local stakeholder meetings should therefore discuss the precise mandate, roles and responsibilities of WUAs and their limitations. The local stakeholder meetings need to discuss who are the dominant players in the WUAs, how local views will be incorporated and how the WUAs will relate to other institutions at local, provincial and national level.

- *Strengthen relationship between CMAs and WUAs*

The purpose and functions of WUAs need to be seen within the greater context of the WMA which is managed by the CMA. It is at this catchment level that all stakeholders can be represented and be involved in integrated planning and decision-making. It would therefore assist these WUAs to have the CMA set up as a parallel process to the establishment of the WUAs. In this way, local representatives from the WUAs could be elected to serve on the CMA at the same time as working with stakeholders at the local level. This would ensure that the stakeholders' needs at a local level are incorporated at the catchment level.

- Promotion of co-operative governance and co-management

There is a need to strengthen co-operative governance both vertically and horizontally. This will improve coordination between DWAF regional and national levels and also within different divisions of DWAF charged with WRM. Due to the fact that water is so fundamental to economic and social development in rural areas, there is a need to strengthen linkages with other relevant government departments and institutions whose activities rely on, or may affect, WRM at the local level. There is a need for DWAF, water users and other stakeholders to work in partnership to manage water resources. Such partnerships need to recognise the respective knowledge systems, capacity, skills and resources of the different

stakeholders and develop management arrangements that reflect the different strengths and weaknesses of these groupings.

- *Enhance links between research and practice*

Various national policies and strategies relevant to WRM are not being considered and implemented at a regional level. Therefore, a research and development unit should be created within the regional offices to monitor and integrate relevant information on WRM. DWAF should collaborate with universities and other research institutions in the study area so that research findings and other useful resources can be fully utilised.

- *Enhance public participation and strengthen capacity building efforts*

There is lack of capacity at the local level to manage water resources effectively through WUAs, as required by the NWRS. The use of stakeholder analyses, community needs assessments and skills audits could assist in determining the skills requirements of resource users and inform the capacity development programme required for a given area. An evaluation strategy to monitor the progress of the WUAs is also required.

ACKNOWLEDGEMENTS

We would like to gratefully acknowledge the financial assistance of the Water Research Commission (WRC) in South Africa which provided funds to conduct the research. We are also grateful to the Department of Water Affairs and Forestry (DWAF) and to staff members of the Department of Agriculture (DoA) in the Eastern Cape Province who assisted in co-ordinating the field-work in the case study areas. We also extend thanks to the following groups and individuals for their useful information and insights: Members of the House of Traditional Leaders (HOTLs) in the Eastern Cape, traditional leaders in the study area, members of the eDikeni and Masikhanye Water User Associations and local communities in the study areas.

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ABBREVIATIONS

CMA	Catchment Management Association
CPR	Common Pool Resource or Common Property Resource
DLG	Dept. Local Government, Housing and Traditional Affairs
DoA	Dept. of Agriculture
DWAF	Dept. of Water Affairs and Forestry
HOTL	House of Traditional Leaders
IKS	Indigenous Knowledge Systems
IWRM	Integrated Water Resource Management
MEC	Member of Executive Council
NEMA	National Environmental Management Act
NGO	Non Government Organization
NWA	National Water Act
NWRS	National Water Research Strategy
PRA	Participatory Rural Appraisal
RSS	Rural Support Services
SANCO	South African National Civic Association
WC	Water Conservation
WDM	Water Demand Management
WMA	Water Management Area
WMI	Water Management Institution
WRM	Water Resource Management
WSA	Water Services Act
WSAU	Water Services Authority
WSP	Water Services Provider
WUA	Water User Association

1. INTRODUCTION

1.1 Background to study

South Africa has made rapid progress since the election of the first democratic government in 1994, but the inequity, poverty and deprivation inherited from Apartheid South Africa is still widespread and remains a focus of the government's plan to improve the livelihoods of all its citizens. Water is an essential resource in everyday life and if managed properly it can help alleviate the day-to-day struggles faced by many South Africans. The transition to democracy required a process of law reform that saw Acts such as the 1913 Land Act and the Water Act of 1956 repealed, to make way for new Acts such as the National Water Act (NWA), no. 36 of 1998 and the National Environmental Management Act (NEMA), no. 107 of 1998 that encapsulate principles of equity, sustainability and efficiency. The NWA developed strategies to facilitate the proper management of water resources, one of which was the National Water Research Strategy (NWRS) of 2004. The strategy aims to manage water resources to ensure that water is utilised to support equitable and sustainable social and economic transformation and development (DWAF, 2004b). South Africa has been divided into 19 water catchment management areas (WMAs) identified in the strategy, and new Water Management Institutions (WMIs) have been designed to help address the problems of water provision, management, conservation and participation by stakeholders (DWAF, 2004b). The WMIs include catchment management associations (CMAs) and water user associations (WUAs), which are still in the process of being set up across the country.

This project seeks to analyse and evaluate these new water resource management (WRM) institutional arrangements, especially related to the WUA. A key focus will be on the role that socio-cultural issues, particularly the role of traditional leadership and cultural and religious practices, play in determining WRM outcomes.

1.2 Rationale for research

The NWA is progressive legislation that seeks to address inequities of the past, and can be regarded as a tool to move society towards social and environmental justice and poverty eradication (Van Koppen *et al.*, 2002), which can be achieved by ensuring water resources are shared with historically disadvantaged individuals. This is a movement towards integrated WRM. Another important aspect of the Act is the requirement to establish WMIs such as CMAs and WUAs, which aim to devolve power to the water users. A general concern that the DWAF Regional Office identified after the establishment of the country's first CMA (in the Olifants WMA) was that small-scale irrigators risked being overlooked. Hence, the 'bottom-up' approach of WRM was adopted by DWAF so that management of resources could occur at the community level (Van Koppen *et al.*, 2002). The integrated approach to WRM as outlined in the NWA, also focuses on ways of increasing the involvement of women

in water management. There is also emphasis on the empowerment of black resource-poor farmers and on the better management and conservation of domestic water supply to prevent illegal exploitation of water (Van Koppen *et al.*, 2002).

As the new approach in the NWA focuses on the provision of water by newly elected local government structures, these structures need also to consider the roles of the traditional authorities that govern these areas. The challenge is not only the empowerment of the traditional authorities, but also definition of the roles and responsibilities of local government with emphasis on transparency and accountability (Van Koppen *et al.*, 2002).

The rationale behind the research was to gain an understanding of how traditional systems manage water resources as a common pool resource (or common property resource, CPR). The research also seeks to understand the informal rules and cultural practices that govern water access and use, so that they can be considered with the rules of the State-driven WMIs. Institutional arrangements of WUAs have been identified in order to gain insight into the issues surrounding the establishment and operation of these institutions. These arrangements of WUAs and the role that traditional leadership and cultural practices play in WRM have been analysed through information gathered from WUA meetings, interviews, workshops and fieldwork where day-to-day activities associated with the use of water were observed and discussed. The research identifies practical examples of how these factors influence WRM. Recommendations for the protection and conservation of water resources and for sustainable WRM and development in these rural areas, including the role of traditional leadership and cultural practices in WRM, are given.

1.3 Aims

The aims of this project are:

1. To assess the role that socio-cultural issues (including the roles of customary tenure, of informal and traditional leadership, of cultural and religious practices), play in new WMIs.
2. To identify typical WRM problems in rural South Africa, drawing on insights from the two case studies in the Eastern Cape Province, which arise as a result of lack of understanding of the socio-cultural dimensions of WRM.
3. To investigate and assess the effectiveness of new WMIs and their arrangements, with a particular focus on the WUAs being established at the local level within the context of rural South Africa.
4. To propose recommendations on the role of traditional leadership and cultural practices in the management of water resources, and on mechanisms for strengthening institutional arrangements at the local level. In addition, to influence policy relevant to

water management in South Africa.

1.4 Study area

The Mzimvubu to Keiskamma WMA no. 12 was selected as a research site as it illustrates typical WRM challenges in rural South Africa. These challenges arise from a lack of resources in these areas and a lack of understanding of the socio-cultural perspectives of traditional systems governing CPRs such as water. The need for improved water resource access and management was expressed by farmers in the study area. Accordingly DWAF initiated the two WUAs, which are still in the process of being established.

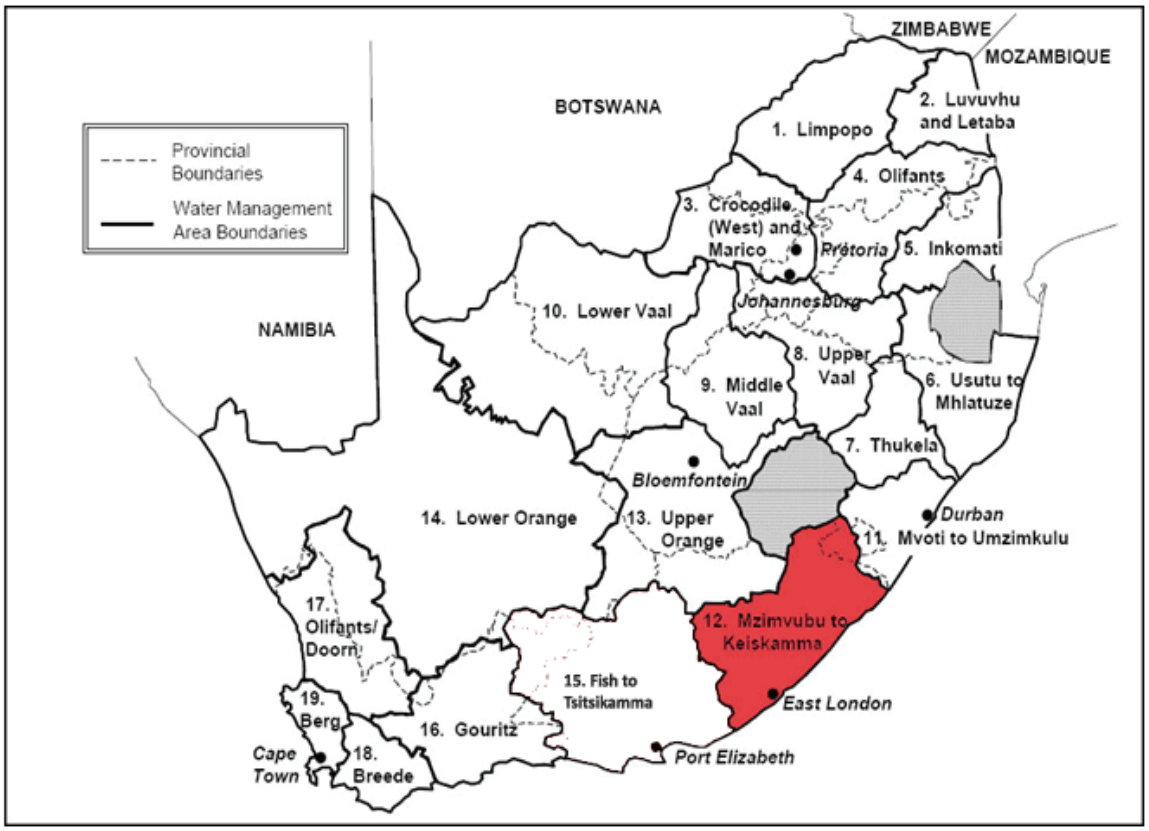


Figure 1: Map showing the 19 catchment management areas and the study area (no. 12)
Source: Basson and Rossouw (2003a)

1.5 Limitations to research

The project duration was limited to only 4 months of field research. However, in this time the research team obtained useful insights into traditional governance systems, cultural practices and informal rules associated with water use. The meetings, interviews, workshops and field observations were carried out in the Eastern Cape, predominantly in a rural context. This highlighted difficulties with regard to the logistics for arranging meetings and

workshops. Information on group meetings in these rural areas was not always conveyed to all the required stakeholders and thus certain meetings were poorly attended. During the fieldwork and at meetings, the research team made use of an interpreter to ensure that community views and concerns were adequately communicated.

1.6 Structure of report

Section two of this report describes the methodology employed for the research.

Section three provides the conceptual framework and context for the research and explains the concepts of CPR management, demand-driven management and co-management.

Section four explains traditional governance systems and cultural practices specifically relevant to water and provides an outline of the role of traditional leaders in WRM.

Section five concerns the history of communal land ownership, land and water rights and irrigation schemes in South Africa.

Section six focuses on the history and current practice of WRM in a South African context and touches on the theoretical underpinnings relevant to this discipline.

Section seven looks at the policy and legislation of integrated WRM in South Africa.

Section eight gives an overview of the WMIs as specified by the NWA and looks further into the capacity building and public participation processes for these.

Section nine provides an overview of the study area.

Section ten presents the findings of the study.

Section 11 discusses some of these findings with reference to the conceptual framework.

Section 12 provides a set of recommendations to assist the sustainability of local level WMIs in the rural context.

2. METHODOLOGY

A qualitative approach was used to gather data for the research and both primary and secondary data were utilised. The research focused on two study areas: the Masikhanye and the eDikeni WUA areas of jurisdiction. The primary data were obtained through the following methods:

- Stakeholder analysis;
- Semi-structured interviews;
- Participatory rural appraisal (PRA) methods, such as:
  - Observations
  - Transect exercises
  - Participatory workshops
  - Feedback sessions.

Secondary data comprised a literature review.

2.1 Stakeholder analysis

Stakeholders were identified through their role in:

- Water management, associated with the establishment of WUAs;
- Stakeholder empowerment and capacity building;
- Creating policies for and the establishment of WMIs;
- Regional establishment of the WUAs specific to the study area;
- Water service provision within district and local municipality;
- Community-level water service provision (NGOs);
- Management and revitalisation of irrigation schemes;
- Private consulting with respect to WRM;
- The WUAs in the study area;
- Water usage within the WUAs' areas of jurisdiction;
- Traditional leadership;

- Cultural practices.

2.2 Semi-structured interviews

Semi-structured interviews were conducted with the various stakeholders. These focused on particular themes depending on the stakeholders' knowledge and experience and their role with regard to WRM and WMIs. Most interviews were conducted in person and some via telephone and email. The following stakeholders were interviewed:

- Local and district municipality (water service authority);
- Department of Agriculture (DoA) regional;
- DWAF regional and national;
- NGOs;
- Farmers;
- Private consultants;
- WSP;
- Traditional leaders.

2.3 Participatory rural appraisal methods

PRA methods were useful for understanding the complex relationships between the various stakeholders and the role of cultural practices and traditional governance systems. It was felt that this was the most appropriate method to engage informally with the communities and to share the results of the research.

2.3.1 Transect exercises

The transect exercises were carried out on 30 and 31 May 2007. The aims of these exercises were to identify important areas in terms of cultural practices and water access, and to stimulate debate regarding issues related to the WUA establishment process, communication and WRM. On arrival at the arranged location we presented the maps we had created of the area and requested the attendees to identify on the maps areas of importance in terms of cultural practices, water access and water conservation and then to guide us to these sites (Figures 21, 22). We then drove or walked to various locations to inspire discussion and to obtain attendees views on the following:

- Strategy, structure and incentives of WUAs;
- Public participation, communication and decision-making;
- Representivity and co-management/co-operative governance;

- Water access, water rights and cultural practices;
- Conservation of water resources.

Along the drives and walks, we observed villagers utilising water sources such as taps and irrigation systems and generally observed the day-to-day activities of people in the area.

2.3.2 Participatory workshops

Two participatory workshops were conducted on 1 June 2007. The workshops consisted of a meeting with each of the WUA committees. The aims of these workshops were similar to the transect exercises: to identify important areas in terms of cultural practices and water access and to create debate regarding issues related to the WUA establishment process, communication and water resource management. Due to a strike on this day, only a small number of water users arrived for the Masikhanye workshop. The workshop reports can be found in Appendix 2. The workshops were structured to explain our aims and plans for the workshop through:

- Showing a map of the area;
- Showing a flowchart of the establishment process;
- Discussing communication and decision-making flow;
- Getting feedback and recommendations.

2.3.3 Participatory mapping exercise

A series of maps was created in Manifold (mapping software) with data gathered from the Chief Directorate – Surveys and Mapping (DWAF). These maps included major roads, villages and rivers, and those utilised for the transect exercises included points identified by the attendees (see Appendix 2).

The participants were asked to verify the points already on the maps and to add others to show:

- Land use activities;
- Land ownership and rights: State vs. communal property, private;
- Water sources (rivers, dams, wells, springs);
- Water infrastructure;
- Access points to water sources: we asked the attendees the following:
  - Who controls the access?
  - Who has decision-making power?

        - Who has rights?
        - What are these rights?
        - Are these rights State or communally controlled?
    - What norms and practices occur at the water points (collecting, irrigation, water rotations, etc.)?
    - Who initiates these practices and why?
    - Who cares for the water points (conservation), which need to be improved and/or maintained?
    - What problems occur at water points and what is required to resolve them?
    - Where do cultural and/or religious practices occur?

2.3.4 Production of a flowchart

We presented the committee with a flowchart of the establishment process as found in the NWA and asked them to verify whether this model was used in the establishment of their WUA (see Appendix 2).

2.4 Creation of a communication flowchart

Another key objective of the workshop was to identify the way communication flows between the various stakeholders through asking a set of questions. The questions were as follows:

- How/where does communication flow between the stakeholders?
- What methods are used for the sharing of information?
- Who communicates information from the WUA to the community and how?
- Who makes decisions about representatives and about how communication flows?
- Who elects representatives? Are they true representatives?
- Are women and marginalised individuals included? If yes, how?
- How can information flow be improved?
- What is the role of the chief with regard to communication?
- How are disputes settled?

A chart was presented to the attendees, who were asked to add any additional stakeholders that were part of the communication flow, plus any new linkages between them which were

not identified in the chart. The purpose was to identify where there was good communication and where communication was lacking and needed improvement. The following chart was presented:

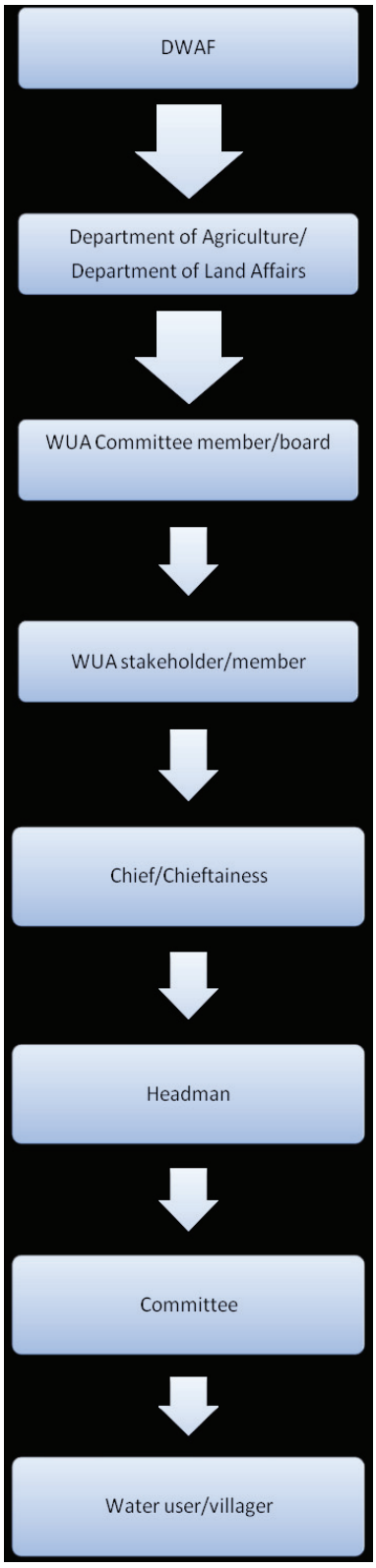


Figure 2: Generic communication chart

2.5 Observations

The research team made observations during their visits to the communities. Notes were taken during the field trips and later analysed. The observations were helpful in understanding how people interact with and utilise their water resources. The researchers learnt how the land in the different areas was utilised and noted the complexity of private versus communal land use and its effect on water access.

2.6 Feedback workshops

Feedback sessions were conducted with the eDikeni and Masikhanye WUAs. The aims of these sessions were to show the community how they had contributed to the research as well as to verify the findings. The researchers created a power-point slideshow displaying the WUA findings and recommendations. Unfortunately, it was not possible to obtain a projector at the Masikhanye WUA meeting and so printouts had to be utilised.

2.7 Ethical considerations

- Since the project was sponsored by the WRC and because assistance from DWAF was needed to arrange initial meetings with the WUAs, precautions had to be taken in order to avoid bias. These included avoiding any tendency for our research to be led by DWAF officials, even though we were reliant on them for collecting information.
- It was essential to gather as much background information as possible about those individuals or groups encountered during our research. This was to ensure that the everyday norms and values of those involved were recognised and respected. Thus, our research was carried out in an empathetic manner, as we dealt with people from a diversity of cultures.
- Interviews and workshops needed to be planned carefully so that the time available was fully utilised.
- Feedback to those involved was extremely important, not only to give recognition to their involvement, but also to ensure that they were left with a positive view of what had been achieved, so that future research efforts would be welcomed. It is hoped that the information we provided was also of benefit to them. Feedback helps participants feel included in research by allowing them to see that their input has influenced the process.
- Since the research was conducted within disadvantaged communities, we ensured that our intentions, as well as the context within which our research was based, were clear from the outset. This helped to avoid raising expectations of direct help, which may result in disappointment and leave those communities with a negative perception of the research.

2.8 Literature review

A literature review was undertaken to gain a broader understanding of the context within which the research was conducted. The following literature was reviewed:

- Conceptual theory for CPRs and co-management;
- Traditional governance systems and cultural practices in Africa and South Africa;
- History of WRM in South Africa;
- Policy and legislation related to WRM in South Africa;
- Integrated WRM;
- Analysis of WMIs in the Eastern Cape area;
- Government documents relevant to the new direction in WRM in South Africa.

3. CONCEPTUAL FRAMEWORK

3.1 Introduction

Water is a natural resource, which is managed as a CPR and, as with most CPRs, it faces challenges in its management. Dolsak and Ostrom (2003) define a CPR as a resource that shares two characteristics. This first characteristic is "subtractability or rivalness", which means that what one person harvests from or deposits in a resource subtracts from the ability of others to do the same. It is this characteristic that can lead to overuse, congestion or even destruction of the CPR (Ostrom *et al.,* 1994). The second characteristic noted by Dolsak and Ostrom (2003) relates to the cost of excluding potential beneficiaries from access to the resource. Due to the problems associated with managing water as a CPR, South Africa has adopted a new demand management approach for managing water in line with international strategies such as the Dublin Principles (1992). In addition to these strategies, there is a shift from a centralised top-down approach in managing water resources, towards co-management, which is a more holistic, system-oriented and people-centred approach (Hauck and Sowman, 2003). It is therefore important to assess whether the new WMIs will incorporate the elements of managing water as a CPR.

3.2 Common property context

A CPR has been defined 'as the co-equal ownership of the right to a bounded resource where community-established rules govern its use' (Samakande *et al.*, 2004). Much land is declared by national law as public land, but is used and managed by inhabitants through common property arrangements – such as dry land areas, grazing pastures and irrigation schemes (Meinzen-Dick *et al.,* 2006). Many natural resources such as water and pastures or land are also common pool goods. This indicates that there is subtractability of the resource through joint use.

CPRs ('the commons') not governed by institutions are called 'open access regimes'. The possibility of exploitation and degradation of the CPR may occur – especially within open access regimes.

The commons fulfil religious, cultural and recreational functions, but are of particular importance for securing the livelihoods of poorer or marginalised groups in society, including women and the landless. Consumptive and non-consumptive factors together indicate an important role for the commons, e.g. the social values and practices associated with the resource are as important as the use for productivity and livelihoods. The commons therefore also provide incentives for conserving the resource (Meinzen-Dick *et al.,* 2006).

3.2.1 Water as a common pool resource

'Water is a *de facto* common pool resource'. How this CPR is managed depends on State institutions, regional level regulations and local communities with their own norms and customary practices, (Latham, 2002 p. 5). Water is seen not only as a CPR, but is also a fugitive resource, which means that the management of water and the rules defining access and exclusion are complex and can create overlapping management of the resource between institutions (Latham, 2002 p. 5). Traditionally, water users in the rural setting regard water as a CPR which can be 'sacred' or have 'secular' value for needs such as drinking, cleaning and production. An example of a sacred source would be a common pond (Singh, 2006 p. 360). Sacred waters are kept pure by preventing pollution of the resource. The purity of water for other needs varies according to its specific purpose. Wells are classified as drinking water sources and ponds and tanks are for non-drinking purposes. On the whole, water is perceived as a scarce but renewable resource that should not be degraded (Singh, 2006).

3.2.2 Factors affecting CPR use

3.2.2.1 Characteristics of a CPR and its Users

Dolsak and Ostrom (2003 p.12) identified the following characteristics of CPRs which are conducive for successful governance: "Small size, stable and well-delineated resource boundaries, relatively small negative externalities resulting from resource use, ability of resource users to monitor resource stocks and flow and a moderate level of resource use". The characteristics of individual CPR users, such as their preferences and characteristics (group cohesion, trust, homogeneity, size) affect the characteristics of the institutions governing them (see Bromley *et al.,* 1992, McCay and Acheson, 1987). Resource users who trust each other are more likely to restrain their use of the CPR and comply with agreed-upon limits of resource use. Further, users who are connected by multiple issues over longer periods of time can use linkages to induce cooperation (Dolsak and Ostrom, 2003).

3.2.2.2 External economic environment

The external economic environment affects users' preferences and assets. Many CPR users rely on external markets both for alternative sources of income and for a market in which to sell products originating from use of the resource. These linkages affect the extent of the CPR use (Dolsak and Ostrom, 2002). However, Sangupta (1995) argues that commercialisation is seen as destroying the social fabric of communities, replacing traditional principles of cooperation with those of competition, and causing resource deterioration. On the other hand, commercialisation is seen as protecting the commons by generating sufficient financial resources for investment in resource monitoring and management and therefore institutional sustenance (Dolsak and Ostrom, 2003).

3.2.2.3 External legal environment

Actors in the legal external environment, such as government departments, affect the institutions that govern the CPR use. These external agencies usually assign legitimacy to CPR use that enables CPR users to devise their own institutions and implement them successfully (Dolsak and Ostrom, 2003). These external legal actors also define how institutions at different levels interact. State recognition of common property systems is essential to enable those who depend on the commons to reap the benefits from these areas. To minimise or deflect external pressures and threats on the commons it is essential that common properties be formally recognised. The commons, much more than individually-held properties, are at risk of appropriation from both external and internal actors (Meinzen -Dick *et al.,* 2006).

3.2.2.4 The political environment and technology

Political parties in power affect the policies selected and devised in the legal environment (Dolsak and Ostrom, 2003). These policies in turn affect the institutions governing the resource. Technology provides methods for monitoring and protecting common property use. These methods are based on indigenous knowledge systems (IKS), for example, using fencing to protect springs. This also provides a means of employment in CPR use and extraction (Dolsak and Ostrom, 2003).

3.2.3 Institutional design for CPRs

Even though there is no single institutional design which is suitable for all CPR situations, researchers (Ostrom, 1990; Tucker, 1999; Bardhan, 1999) have a general consensus as to some of the principles which will increase performance of an institutional design, which include:

- Rules which are devised and managed by resource users;
- Compliance with rules which are easy to monitor;
- Rules are enforceable;
- Sanctions are graduated;
- Monitors and other officials are accountable to users;
- Adjudication is available at low cost;
- Institutions to regulate a given CPR may need to be devised at multiple levels;
- Procedures exist for revising rules (Dolsak and Ostrom, 2003 p.22).

3.2.4 Institutional framework for managing water resources

Singh (2006) noted that an institutional framework for how water is managed as a CPR is thought to include 3 levels of action as illustrated by a case study in India:

- Decision-making about planning, development and management of the resource;
- Access norms that define user groups;
- Operational aspects that concern the day-to-day maintenance of the resource.

3.2.4.1 Decision-making

Collective decision making presents a ‘‘nested’’ situation (Ostrom, 1990), where in the case of dominant users, the ultimate decision-making authority lies within the jurisdiction of the group itself, and action by those lower down in the hierarchy may be ultimately dependent on decisions taken at the level of dominant user. Leadership with respect to decision making at this level generally rests with individuals who are regarded as senior in social status and age; are knowledgeable in relation to the proposed action; and predisposed to shouldering of social responsibilities. Such leadership is actually described as *ad hoc* or situational, and no formal council or group is organised to regulate activities on a regular basis (Singh, 2006).

At least three kinds of factors appear to have considerable influence on decisions with respect to development of water resources: (1) the nature of value attached to the intended water source, primarily ‘‘sacred’’ or ‘‘secular’’; (2) social considerations such as the ritual and social position of the intended user group influencing the purpose(s) and locations, and (3) factors drawn from traditional knowledge regarding the water resources locally available and the possible seasonal variations in their availability (Singh, 2006 p. 362).

3.2.4.2 Access norms

Access norms closely follow the social norms where users belonging to a particular group share access to a common (secular) water source (Singh, 2006). This can be a problem if the source is a productive source for irrigation and the group involved in irrigation dominates access to the source. *De Jure* access is then enjoyed by the landowner and *de facto* access by the irrigator using the scheme. These access rights are discussed further under the sections relating to history of water rights within traditional systems in South Africa.

3.2.4.3 Operational aspects

The cultural practices aimed at maintaining water quality, conserving the resource and managing it must be recognised (Singh, 2006). Water serves as a metaphor in signifying the basic beliefs, values and norms governing the day-to-day actions of the community members.

However, the place where water is accessed may not be truly communal and therefore the concept of common property needs to be investigated (Singh, 2006).

Devolving authority to the lowest possible level can improve the management of CPRs if the State is willing and able to back the rules established at those levels. This would include responses to cultural, political and ecological demands, as well as rights allocation and conflict resolution. Roles and responsibilities for the group and for the State would need to be identified (Meinzen-Dick *et al.*, 2006). The commons also provides a platform for strengthening of institutions so that accountable and transparent membership increases the security of the commons. Lastly, the group must be empowered to deal with outsiders so that they can negotiate the use of resources (Meinzen-Dick *et al.*, 2006).

3.2.5 The challenges in managing CPRs

The 'tragedy of the commons' is a central concept in human ecology and the study of the environment (Ostrom *et al.*, 2002). Within this concept, a resource – usually a CPR – exists to which a number of people have access. (Ostrom *et al.,* 2002). If one user limits his/her use of the resource, but another user does not, then the resource may collapse and the users will have lost the short-term benefit of taking their share (Hardin, 1968, as cited by Ostrom *et al.,* 2002).

Policy analysts assert that there are two alternative 'solutions' to the ever present tragedy of the commons. These solutions are either the privatisation of land or the appropriation of land by the national government, where the land then becomes State property (Dolsak and Ostrom, 2003).

Hardin (1968) perceives privatisation as a solution for preventing overuse of resources in open access regimes; others suggest that privatisation is a solution to the limited effectiveness of governmental command and control instruments in managing CPRs. Through tradable permits (title deeds), property rights are well defined and easily enforced. However, not all CPRs are easily amenable to the design of private transferable rights (Dolsak and Ostrom, 2003). It is difficult to design tradable permits for very complex systems with high variability in time and degree of interconnection, such as water.

CPRs require permits or licences that are regularly updated due to the uncertainty of the resource so as to ensure its sustainability. This decreases the security of such rights and reduces economic motivation for investing in them, thereby reducing the effectiveness of institutions that depend on such permits (Dolsak and Ostrom, 2003). Allocating permit rights to existing users of a particular CPR at no charge and making new users purchase these rights creates barriers to new users benefiting from the resource. It is possible to design a system that treats both the new users and existing users equally, but this will depend on the political feasibility or political power of these two groups. Legally recognised rights to shared

resources would provide users with incentives to conserve and manage the resource (Meinzen-Dick *et al.,* 2006). WMIs could provide a medium through which these licences or permits are accessed.

In some circles of research, there has been a general feeling that institutions meant to manage traditional CPRs will cease to exist in the next few decades (Dolsak and Ostrom, 2003). The reasons underlying this are that CPRs are seen as insignificant in modern times and hence the perception that common-property institutions will not survive. However, it should be noted that for as long as humans are still relying on CPRs, it will be necessary to maintain these institutions and related management arrangements (Dolsak and Ostrom, 2003).

An important challenge in the governing of CPRs is that they are difficult to define accurately (Dolsak and Ostrom, 2003). These resources cannot be fixed at one single point, for example, in the event of a river flooding, the water will cross established boundaries, thus including many stakeholders in its management which may lead to conflict. The use of a CPR could have negative consequences for those who do not necessarily benefit from its use. The use of timber, for instance, may result in the deterioration in the water quality downstream (Bruce, 1999 cited in Dolsak and Ostrom, 2003).

Many CPRs have been governed by various regimes, for example, traditional governance systems in rural communities in Africa before colonisation. Such governing systems have had their powers and influence reduced and replaced by colonisation or other western forms of governance. Therefore, as Dolsak and Ostrom (2003) argue, the new challenge is to devise more effective institutions in areas where remnants of the previous regimes are still present.

Due to competition in the use of a CPR, there is a risk that the beneficiaries will overuse the resource. To avoid overuse of a CPR Dolsak and Ostrom (2003) suggest that users and external authorities should create rules that regulate its use. Devising such rules requires the participation of all key stakeholders. The rules will require that the communities avoid collective action dilemmas. Generally, communities with a longer tradition of mutual trust and close ties are more likely to devise and sustain successful institutions (Lam, 1998).

In the modern era most users of CPRs interact with other people who are not part of the institutional environment regulating the resource (Dolsak and Ostrom, 2003). The main challenge that arises from such scenarios is that those “outsiders” will begin to use the CPR illegally. As a result, the legal common property users will seek external legal authorities to protect the institution governing the CPR.

The continued challenges in managing CPRs such as water has prompted a paradigm shift in water management globally. This is exacerbated by a prediction that factors such as climate change will result in scarcity and competition in use of water resources, potentially leading to its degradation. South Africa has adopted a management shift in line with international trends

relating to water management, as evidenced in the NWRS and NWA, (see 3.3 below).

3.3 A new discourse in water management

A global paradigm shift in water management can be observed in the strategies of the Rio Earth Summit Agenda 21 (1992), the Dublin Principles (1992) and the World Bank policy (2002). This new approach, specifically linked to water management, as outlined by Ferguson and Mulwafu (2004) includes:

- A movement towards demand management;
- Decentralisation of water management with more stakeholder participation;
- An integrated approach to water, ecologically, economically and socially;
- Recognition and protection of water resources and rights to water;
- Increased social equity in access to water and participation in water related institutions.

The State-driven management of water has ensured a sufficient supply through the past building of dams and other related infrastructure. Current approaches are based on demand management with strategies focused on markets, pricing and the protection and conservation of the resource, so that it can be utilised in a sustainable way.

WMIs such as CMAs and WUAs should focus on the efficient supply of water resources. Whether they address these issues or will be addressing the challenges of the commons is to be discussed. Sithole (2004) argues that the function of the WMIs is an embodiment of the international strategies which are valuing water as an economic good in all its uses. Based on this assertion, the NWRS states that "Water institutions strive to supply water efficiently and effectively, minimise water losses and promote WC/WDM among their consumers" (DWAF, 2004b p. 79). It will, however, be equally important for these WMIs to address water management in the context of CPRs.

An integrated approach towards management involves the three pillars of sustainability (socio-economic, environmental and political). Gleik (1999) adopted a framework based on the human right to water in which he argues that there needs to be a right to water which protects access of the vulnerable part of the community to water. This in turn promotes empowerment of stakeholders, including women, and a stronger influence in decision-making within communities (Van Koppen *et al.*, 2002). One of the major outcomes of the post Cold War democratisation process in Africa has been the 'devolution of power from centrally placed authorities to local government and communities' (Ferguson and Mulwafu, 2004 p.1). Decentralisation in water management entails the creation of new institutions and processes to ensure that communities effectively participate in the management of their resource

(Ferguson and Mulwafu, 2004). These new institutions should be accountable to the local communities and not the central State. The NWA establishes CMAs and WUAs which is an attempt by government to include all the relevant stakeholders in WRM. The inclusion of stakeholders ensures that the cultural values and beliefs of the communities involved are included in decision-making.

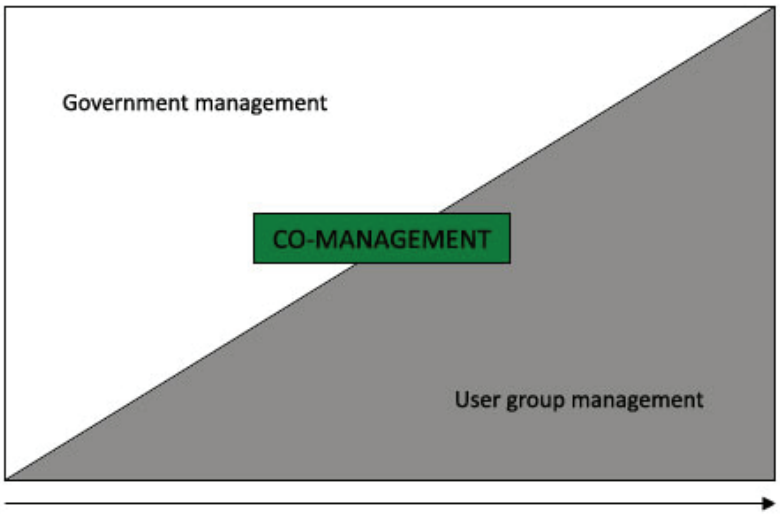
The recognition of the inadequacy of government institutions to ensure sustainable management practices for natural resources has provided an argument in favour of greater participation of local communities in the management of CPRs (Ostrom, 1990; Campbell *et al.,* 1999, cited in Bene and Neiland, 2006). Decentralisation and co-management are both aimed at improved governance of natural resources by involving all stakeholders, especially the marginalised members of the society. The most important points in co-management are the sharing of responsibility and authority between two 'entities'. These two entities involve on the one side the "government (or centralised management)" and on the other side the "community (or self-management)" (Bene and Neiland, 2006 p.45).

3.4 Co-management context

The concept of co-management is promoted through the establishment of WMIs such as WUAs, as they aim to include all stakeholders at all levels with a specific focus on the marginalised. Hauck and Sowman (2003) observe that in order to achieve sustainability of resources, human impacts need to be managed in a way that is broadly supported by the community. The effectiveness of State-centric resource management models and schemes has increasingly been questioned in recent times. Their failure to deliver has promoted an interest in alternative arrangements that could improve the effectiveness of management regimes. Models based on the involvement of users have proved to be the most promising alternative. These new models have also sprung out of the revitalisation in grass-roots democracy, public participation and local level planning (Hara, 2003). It is within this context that the concept of co-management has grown.

Co-management has been defined as "a partnership arrangement primarily between government and resource users, but may also include other stakeholders, to share the responsibility and authority for managing resources" (Hauck and Sowman, 2003 p. 3). The authors write that some of the key features of co-management are "consultation between the relevant government agency and resource-users over the content of the management plan, capacity-building and empowerment of partners, negotiation of rules governing the resource, agreement on the roles and responsibilities of the partners, and delegation of specific management functions to resource-users." The range of partnerships between government and community can be seen from the co-management continuum below in Figure 3. The model ranges from a community-driven process at one end of the continuum to government having the most power and control at the other end. There are various types of co-

management in-between these two extremes that include consultative, co-operative and delegated arrangements (Hauck and Sowman, 2005 p.3-4).



Government-driven co-management	Consultative co-management	Co-operative co-management	Delegated co-management	User group- driven co-management
Government has the most power and control	Government consults with user groups often but makes all decisions	Government and user groups work together and make decisions jointly (equal power/responsibilities)	Government delegates significant powers and responsibilities to organised user groups	User groups have the most power and control

Figure 3: The co-management continuum **Source: Adapted from Hauck and Sowman (2005)**

Co-management has been especially prevalent in developing countries, where the devolution of power from government departments to local level has been guided by the need for restructuring. The motivation for co-management has been questioned, but the demand for the involvement of all stakeholders in the management process is increasing (Plummer and Fitzgibbon, 2004).

Three arguments have been used to justify the increasing acceptance of co-management:

1. Concerned interests ought to be heard;
2. Information from users could result in the improvement of management decisions;
3. Co-management could ensure the legitimacy of the management system, thereby reducing 'transaction costs' (Hara, 2003 p. 21).

Through the concepts of decentralisation and co-management, it is important that the concerns of the rural population (i.e. their traditional practices, cultural values and norms) are identified. Whether these traditional practices and traditional governance systems are recognised within the State-driven demand management strategy is to be addressed in this research. As outlined by Dolsak and Ostrom (2003), there is a great challenge to ensure that management regimes such as traditional leadership are incorporated into WMIs, even if only remnants are still present. This is important because traditional governance regimes had managed water resources successfully in Africa for centuries before colonisation. Therefore, it is crucial that the institution of traditional leadership is strengthened and given capacity so that it contributes to integrated WRM. Before analysing the role and relevance of traditional governance structures and cultural values and norms, it is necessary to give a background to these structures as outlined in the following section.

4. TRADITIONAL GOVERNANCE SYSTEMS AND CULTURAL NORMS AND VALUES

Different governance systems apply to different localities in the management of water resources. Before the fundamental shift to State-market society relations, the term governance had a narrow meaning which referred to the action or manner of governing (Jessops, 1998). It was limited to constitutional and legal issues concerning the conduct of "affairs of State" (Bene and Neiland, 2006). Before colonisation the institution of traditional leaders (chiefs and headmen) were considered the "State" and were responsible for all governance issues. This means that they had the power, authority and influence to make decisions concerning public life and economic and social development (Jessops, 1998). According to Bene and Neiland (2006 p. 13), the recent concept of governance considers two components:

> (a) "the 'multi-actors dimension', i.e. the fact that the State should no longer be the only actor to be involved in the governance process; (b) the accommodative nature and consensus-driven dimension of this process, i.e. the fact that governance should aim at accommodating the interests and expectations of the majority".

The governance approach, which is synonymous with inter-relations between the State and other actors in the improved conduct of affairs, is linked to the concept of democracy. These concepts of good governance and democracy have changed and diminished the role of traditional leadership, as it was not founded on the principles of democracy, but on the concept of inheritance. Prior to colonisation and currently in areas across Africa, traditional communities comprised structures and hierarchies which stemmed from a social organisation that was defined by family and kinship ties (RSA, 2003). In many parts of Africa, the new democratic dispensation has not fully recognized the authority of traditional leaders, which has led to their powers being limited and unclear (Molotlegi, 2004).

Despite the fact that there is confusion as to the relevance and role of traditional governance systems in a new democratic South Africa, it is still worthwhile to integrate these systems into the new WMIs (Meer and Campbell, 2007). Traditional leaders were the custodians of cultural norms and values and these norms and practices were useful in regulating the use, access and management of water resources.

According to Bodley (1994), (cited in Zenani and Mistri, 2005) "culture" refers to a society and its way of life. Bodley adds that many definitions of culture refer to values and beliefs. Other definitions refer to the everyday life and behaviour of people that flow from these beliefs. It refers to "customs and traditions, rituals, religion, music, dance, language, food, games, clothes and objects" (Mazrui, 1980, cited in Zenani and Mistri, 2005 p. 7).

Zenani and Mistri (2005) note that the recognition of people's cultural identity, beliefs and values can be a powerful ally, but also a barrier to development and poverty reduction. The debate around culture has been stimulated by a growing awareness that development

programmes and their institutions fail to consider the cultural environment and cultural factors influencing their sustainability. These cultural values and norms are an important element in integrated WRM as they direct the access, use, conservation and management of the water resources in certain communities.

4.1 Traditional governance systems and cultural practices: African Context

In Africa prior to colonisation, the traditional system of governance characterised most forms of administration and governance of communities. With the inception of colonisation, values and practices enforced by the traditional governance system were abandoned, as the Europeans saw the institutions as "uncivilised and necessitating assimilation" (Republic of South Africa, 2003 p. 16). However, during colonisation, the ruling regime drew the traditional leaders into their administrative framework, despite assigning them a diminished status and role. Besides distorting the customary principles, the colonial powers used the traditional governance systems to their advantage. For instance, they would empower traditional leaders with the authority to disallow assemblies and demonstrations and to effect arrests as peace officers (Daneel, 1996). Resistance and opposition to "change and democracy" led to marginalisation of traditional leaders (Republic of South Africa, 2003).

After independence, many African countries have made tremendous strides in recognising and enhancing the role of traditional institutions in governance, particularly in the management of natural resources. For example, in Ghana, the Constitution provides for the establishment of a national and regional house of traditional leadership. Traditional leaders have a role to play in development issues although they are forbidden to be actively involved in politics (Ray, 1996). In Zimbabwe, traditional leaders are allowed to stand for election to parliament. In Namibia, the Constitution provides for a Council of Traditional Leaders, whose responsibility is to advise the President on control and utilisation of communal land. In Botswana, chiefs play a crucial role in the legal system. Around 70-80% of all legal cases are heard in the chief's court. Customary law is codified in Botswana, so people have confidence in the system (Eberlee, 2001).

Traditional leaders derive their legitimacy and authority from pre-colonial roots while the contemporary African State is a creation of, and successor to, the imposed colonial State (Ray, 1996). Because the State and traditional leaders derive their authority and legitimacy from different sources, their sovereignty and legitimacy in the post colonial State is divided (Ray, 1996).

The chiefs in African culture derive their representative authority by descent through the guidance of spirit mediums. This link between the chief and the spirit mediums symbolizes the essentials of a holistic African world view in which the "….living and the living dead, the creator (god) are inseparably linked…" (Daneel, 1996 p. 348). The chiefs are key religious figures in society and their ritual functions relate to the environment, therefore, equilibrium

between the environment and how humans live in it, is one of their main concerns (Daneel, 1996).

In the western world view, water is valued through a utilitarian approach and seen as a marketable good, whilst in the African world view water is not only of social and economic importance, but also of cultural and spiritual significance (Zenani and Mistri, 2005). It is also important to note that IKS used to manage natural resources, mostly transferred through oral tradition from generation to generation, are "intimately connected to the broader framework of people's cosmology and world view, which is embedded within their physical, spiritual and social landscape" (Hirsch and O'Hanlon, 1995 p. 268). Despite the weakening of the physical, spiritual and social landscape of indigenous African people by colonisation, there is still a strong body of religious functionaries, traditional healers (*izangoma*) and traditional leaders (Bernard, 2003). These individuals' services play a crucial role in their communities in the management of natural (water) resources. Generally, in indigenous African cultures there exists a complex set of beliefs and values with regard to water, river systems and riparian zones. In the spirit world, there is a god (*mwari)* who is supposedly the source of such life-sustaining resources (Bernard, 2003).

Cultural practices and belief systems are the basis upon which the traditional communities set up and enforce their informal rules. Chikozho and Latham (2005 p.3) refer to these informal rules as customary law. The authors define customary law as "both law and custom practices that comprise the code of rules approved by tribal tradition. These rules have been observed, recognised and enjoined from time immemorial, and handed down by the forefathers of the tribal communities."

Most developing countries instituting water sector reform programmes have to contend with plural legal and institutional frameworks that govern resource use (Chikozho and Latham (2005). Legal pluralism is a situation where the transfer or introduction of one system is superimposed on an existing political structure or culture (May, 1987, cited by Chikozho and Latham, 2005). Since South Africa is implementing a water sector reform programme, it is important to understand the history and structure of traditional governance systems in order to integrate them with the State governance system.

4.2 Traditional governance systems in South Africa

4.2.1 From the pre-colonial era to the Apartheid era

Traditional leadership is indigenous to South Africa. Its existence predates colonial conquests and the Apartheid era (Republic of South Africa, 2003). Each traditional community was an entity and independent from others. Such communities did not constitute a nation State; they had their own structures and hierarchies stemming from a social organisation unique to that social grouping (Republic of South Africa, 2003). These governance structures were defined

by family and kinship ties. The chiefs had the ultimate say over water infrastructure development, "such as small reservoirs for use by humans and livestock, water allocation, and water pollution issues" (Van Koppen *et al.,* 2002 p. 6). The chiefs set rules to solve problems of water pollution, or convened meetings to resolve conflicts between users of water for domestic purposes and irrigators (Van Koppen *et al.,* 2002).The advent of European expansion into Africa in the 19th century paved the way for Apartheid in South Africa. When colonisation and Apartheid established their roots in South Africa, they altered the traditional governance structure and transformed them in a manner that was amenable to European control.

During Apartheid in the homelands, which were reserved for Africans, the homeland government held some responsibilities for water management while delegating others to traditional chiefs (Van Koppen *et al.,* 2002). Within rural communities, chiefs and their headmen were the main contact persons for the homeland government and any others associated with issues concerning water supply facilities (Van Koppen *et al.,* 2002). Specific tasks, such as the operation and maintenance of water supply systems, were usually delegated to members of the tribal council, who then formed relevant committees in their villages (Van Koppen et al*.,* 2002). The white government, large-scale farmers and mining, forestry and tourist companies established well defined formalised law and well organized institutions, based on riparian rights, which ensured their access to the country's scarce water resources (Van Koppen *et al.,* 2002). Laws such as the Black Administration Act (no. 38 of 1927) and Bantu Authorities Act of 1951 transformed traditional leadership in South Africa into a type of local government, whose main function was to serve as a source and conduit of cheap labour for newly developed mines and farms (Republic of South Africa, 2003). Thus, the institution lost its inherent traditional role of providing leadership to the people. This system of traditional leaders as "Bantu authorities" eroded the culture of consultation and, instead, traditional leaders relied more on the power of the Apartheid regime than on the collective wisdom of the communities they were leading (Republic of South Africa, 2003).

4.2.2 The new democratic South Africa

It has been argued that traditional leadership has no role to play within the contemporary South African system of governance, because it cannot be aligned with the principles of democracy (Meer and Campbell, 2007). Traditional leaders have claimed that the fundamental cultural rights and roles they play within rural societies are unfairly compromised by the current democratic system in place. Even though the traditional leaders have a political voice, they still feel excluded from the political arena. Thus their role and powers, which traditionally included natural resource management, have been subsumed by local level institutions, such as municipalities, (Meer and Campbell, 2007).

In the 1990s, the legal and constitutional committee of the ANC produced a set of principles

to enhance democracy. These guidelines prescribed that the institution of traditional leadership should conform to the Constitution and its Bill of Rights. The principles of democracy would ensure that the institution considers the role of women in decision making (Nthai, 2005). This is relevant in enhancing water resources management, especially since women play a pivotal role in the collection, usage and conservation of water in rural communities.

The 1993 interim Constitution provided for limited recognition of traditional leadership (Meer and Campbell, 2007) by establishing the House of Traditional Leaders (HOTL) at both national and provincial level. This laid the basis for further development and transformation of the HOTL (Nthai, 2005 p.5). Chapter 12 of the 1996 South African Constitution specifically acknowledged the institution of traditional leadership and its place in the system of democratic governance and also allowed for a Council of Traditional Leaders. However, the confusion over the scope and degree of traditional authority remains, with traditional law and practices often coming into conflict with those of the new democracy (Meer and Campbell, 2007).

In 2003, the South African Parliament passed the Traditional Leadership and Governance Act and an amendment to the Land Rights Bill. Authors such as Ntsebeza (2004) have argued that this legislation resuscitates the power the traditional leaders enjoyed under the notorious Bantu Authorities Act of 1951, which was meant to extend direct control of the Apartheid regime in the communal lands. The main objective of the 2003 Framework Act was the establishment and recognition of traditional councils, in order to align them with the principles of democracy. The Communal Lands Amendment Bill grants traditional councils established under the 2003 Framework Act land allocation rights and administrative powers in communal areas. The Communal Land Rights Act was passed in 2004. Ntsebeza (2004 p.5) argues that this Act makes traditional councils supreme structures when it comes to land allocation, which creates an opportunity for abuse of power and mismanagement.

4.3 Traditional leaders and water management in South Africa

Recent trends at an international level indicate that traditional leaders and traditional leadership institutions have a much bigger role to play as custodians of the environment, and protectors of customs (Malzbender *et al.,* 2005). They also have a clear role to play in the performance of judicial functions within their communities. They define and interpret customary law, and settle disputes in accordance with this law.

Although traditional leaders still play an influential role in water management in certain rural communities in South Africa, their roles and responsibilities are not fully supported by the legislation and the new political system. The NWA, for instance, does not explicitly recognize customary water management structures (Meer and Campbell, 2007). According to Malzbender *et al.* (2005) traditional structures can be used to improve water services (at

municipal level), enhance water services delivery and WRM (at the catchment level) and enhance integrated WRM.

It is important to utilise traditional governance systems in areas where the institution is strong because the local people understand this form of governance and the unwritten customary law on which it is based, (Malzbender *et al.,* 2005). Therefore, outsiders with the conventional sectoral approach to water issues should not overlook these traditional systems and the local water tenure arrangements (Van Koppen *et al.,* 2002).

The NWA makes provision for broadly based stakeholder participation. The integration of traditional water management systems provides an opportunity for this 'ideal' to be realised in practice (Malzbender *et al.,* 2005). However, traditional leadership should not usurp other forms of community participation that already exist or that might exist in the future, for example, community based organisations (CBOs) (Malzbender *et al.,* 2005). Auerbach (1997) argued that there would always be limited capacity in DWAF because of the magnitude of the problem of managing water throughout the country. Therefore, the recognition of local water regimes will offer a solution to scarcity of second level resources whilst providing a bridge between traditional and State institutions (Auerbach, 1997). In this way, traditional systems become 'legitimate' organs of water supply and management and become part of the solution to protect, use, conserve, manage and supply water (Turton, 2002). Since these traditional water regimes are based on cultural law, it is important that cultural values and norms are well understood.

4.4 Cultural values and norms relevant to water: South African context.

Water plays a central role in many religions and beliefs in South Africa. Water is a key element in cultural ceremonies and religious rites (Zenani and Mistri, 2005). The NWA promotes equitable use of water resources in the country, but there is "still very limited understanding of the use of water for cultural and religious activities, of the values attached to these uses and the manner in which these affect management decisions" (Zenani and Mistri, 2005 p. 1).

The NWRS (Draft 1, 2002) States that water management is not just about solving problems, but also about creating opportunities. This implies that State agencies and WMIs such as WUAs have a duty to consider the impact of their actions upon places of religious and cultural significance to communities (Zenani and Mistri, 2005).

According to some cultures, there are certain places along a river that are more favoured by river spirits than others (Bernard, 2003). These are believed to be deep pools of certain rivers, often below waterfalls and fast moving water. The occurrence of certain plants near pools and river sources may also indicate the presence of water spirits (Bernard, 2003). Therefore, the river sources where these plants are found are protected. Many indigenous *Xhosa*

communities observe certain days in a week when they are not supposed to utilise their natural resources as an honour and sign of thanksgiving to their spirits, who were regarded as the source and guardians of these resources. Such traditional practices are crucial in the management and conservation of natural resources such as soil and water.

Most African cultures perform initiation ceremonies which involve the use of water. The preferred sites are rivers, lakes and dams. In African culture, the initiation ceremony is carried out on young males and females moving into adulthood. An example of a water-related custom comes from the *VhaVenda* people – where fetching water with metal or rusty containers from a spring is not allowed. It is believed that if individuals disobey this customary rule they will fetch a snake from the spring. This informal rule is intended to avoid pollution of a water source reserved for drinking purposes. Informal rules such as these were integral to the efficient management of the water resources.

Cultural values and norms should be acknowledged and understood by both local people and policy makers so as to encourage their inclusion in WRM policy (Zenani and Mistri, 2005). These cultural practices and norms also influence access to water resources which is directly linked to land ownership. It is thus important to discuss the history of land access and ownership.

5. HISTORY OF COMMUNAL LAND OWNERSHIP, LAND AND WATER RIGHTS AND IRRIGATION SCHEMES IN SOUTH AFRICA

5.1 Land ownership and property rights

An understanding of how land is managed in rural South Africa is needed to create a context for WRM by WUAs. Access to water resources and their management is directly influenced by land ownership and rights. A brief history of land ownership in the rural areas of South Africa, with particular reference to the study area, will be discussed below. This provides an understanding of the role that customary tenure and traditional leadership play in resource management, as well as the way in which customary law affects water access and water rights.

During Apartheid, the Ciskei government retained farmland in the homelands for commercial purposes. This land was to be leased in units by black farmers, but this did not occur in many areas and so local communities tended to rather make their own decisions regarding natural resource management. Traditional authorities were responsible for the allocation of land and management of resources. Later the DoA and the Department of Public Works (DPW) shared responsibility for land and natural resource management, but this was done in an *ad hoc* manner. This often resulted in political conflict between those who were assisted by the government and those who were not (Cocks *et al.*, 2001). In 1990 the DoA set up irrigation schemes under 'small project programmes' and again friction occurred between those employed on the schemes and those not (Cocks *et al.*, 2001).

Land under State ownership, leased to black farmers in the former homelands, appeared to have better management under stock farmers employed by the government than the surrounding communal rangeland that was poorly managed and often overgrazed. The State driven allocation of land led to the 'undermining of the institutional capacity for local resource management', which today has greatly affected resource management in these rural areas (Cocks *et al.,* 2001).

The Community Property Associations (CPA) Act (no. 28 of 1996) has facilitated the land restitution process and the focus on community management, by providing a framework for establishing legal entities where groups can acquire, hold and manage property on a communal basis (Cocks *et al.*, 2001). Although the CPA Act is now in place, local communities are often unable to fulfil the purpose of this Act as the acquisition and sustainability of these rights requires the support of government. This, coupled with past political upheavals, is making it difficult to implement community based natural resource management (Cocks *et al.,* 2001).

Land in the former homelands is now State owned under a modified communal land tenure system. This tenure system incorporates many types of land ownership that existed under the former homelands (Nsonto, 2005) and so rural communities are still, in some cases, operating

under customary law with traditional belief systems providing guidance on legal and administrative processes outside of government (FAO, 1997). These processes determine property rights and land tenure as well as creating an independent social security system (FAO, 1997). Traditional leaders are approached by the community in order to lease land for farming purposes. Therefore the traditional leader, despite not owning the land, has an influence on access and ownership of land in these areas. This research attempts to determine the influence these traditional systems have on water management. It has been noted that successful water use through smallholder irrigation schemes requires an understanding of African land tenure systems and common property management (FAO, 1997). In addition, land tenure reforms are essential for a democratic irrigation community through the granting of communal and individual ownership rights (FAO, 1997).

Land tenure institutions are rooted in value systems, religious, social, political and cultural antecedents and therefore these systems should not be disrupted when implementing water use activities such as irrigation schemes. In the land reform process, where communal land is replaced with registered titles, there has not been an increase in tenure security for land use. This insecurity has been attributed to the weakness in government institutional capacity to support farmers (FAO, 1997). The debate concerns whether registered property rights promote more sustainable resource management than communal tenure systems or whether they create conflict which affects access to the resources. The extent to which value systems associated with land tenure are being integrated in water management under the WUAs is also under question.

5.2 History of irrigation schemes

Nsonto (2005) notes that smallholder irrigation in South Africa has a long history of farmers in rural areas using rivers and streams to irrigate small plots for vegetables and grains. These schemes are, however, facing challenges with competing demands for water, emerging environmental issues, persistent food insecurity, poverty and financial difficulty. In South Africa, irrigation farming became coordinated in the early twentieth century with large scale irrigation schemes serving mainly white commercial farmers. Parastatal eState schemes were established with little or no community participation and then later adapted as centrally managed schemes with project farmers. Many government-funded irrigation schemes face numerous problems, as is the case with the schemes found in the study area. Nsonto (2005 p. 53) specifically highlights the problems with the Zanyokwe irrigation scheme which falls under Masikhanye WUA. Problems encountered included poor infrastructure; a lack of water; lack of pipes and machinery and a lack of capital. This scheme has also been dependent on the homeland leaders in the past as they provided free services. As parastatals pulled out of the irrigation schemes, many farmers stopped working. Smallholder irrigation schemes currently supply about 4% of South Africa's irrigated land, and it has been perceived that even though their contribution is small, they have the potential to aid rural development and

poverty alleviation through income, employment opportunities and food security (Ntsonto, 2005).

Since more than half of South Africa's water is used for irrigated agriculture, there is great pressure on farmers to improve the efficiency of their irrigation systems. Efficient use of water by the agricultural sector can play a significant role in making more water available within the agricultural sector itself, and also for other sectors (Holtzhausen, 2005). The refurbishment of irrigation schemes and the efficient use of water are promoted in the NWRS and the new demand strategy, so that these irrigation schemes can play an important role in conserving and maximising benefit from the water resource (Nsonto, 2005; DWAF, 2004b). WUAs can be created by a group of water users for mutual benefit, such as smallholder farmers wanting to improve production on their farms with the assistance of revitalised irrigation schemes (Nsonto, 2005; RSA, 1998). The WUA then becomes the institution that manages these revitalised schemes, as is the case in the study area for both WUAs, and should therefore promote more efficient use of irrigated water in the area (Nsonto, 2005). Since 2005 the DoA is also assisting in upgrading these schemes, with the principal objectives being commercialisation of farming and black economic empowerment (Van Averbeke and Mohamed, 2006).

5.3 Water rights

Under customary law, common property is managed for the community, often with State laws assigning water rights. Water is held in public trust so that water use rights are given via State-held rights. This creates political and State interference in irrigation schemes and can lead to insecure land tenure systems (FAO, 1997). New water use rights within South Africa are evident in the Constitution and the NWA. In cases where water allocation that is regulated by government becomes coupled with local rights and a regime of open access, the definition of water rights becomes challenging (Molle, 2004). Molle (2004 p. 214) notes that **'**Rights defined administratively embody the structure and power distribution evident in society and often do not weight rural and farming sectors equally.' Those with more knowledge and power often take advantage and create unbalanced patterns of water access. State or 'top-down' approaches ignore customary rights on which much resource management is founded. Even when policy does consider the poor and their lack of capacity, the government departments responsible are not effective in their support (Molle, 2004**).** In South Africa, it has been evident that taxing big users is a primary objective so that there are sufficient funds for the WUAs to be sustainable (Van Koppen, 2003, cited by Molle, 2004). Allocation of water rights also enhances a sense of ownership so that users are more inclined to pay for the services which they have negotiated. This emphasises the role of the WUAs in establishing this sense of ownership, through negotiation with stakeholders (Molle, 2004). Yet, the degree to which WUAs can integrate local water rights, established under open access regimes, with the State assigned rights under the NWA, is in question.

5.4 Water access

Human settlements in the past have developed in locations where a given water source supplied water for domestic use and irrigation, and access was generally established by the settlement. The subsequent development of infrastructure by the State, e.g. dams, has altered the management systems for water resources and therefore the patterns of access to the resource. Local water rights are often not formalised, but there is central management of the resource, with reallocation from irrigation to domestic use as required (Molle, 2004). This situation of informal rights prevails in most developing countries and storage dams provide the greater part of water supply. Access to water resources within rural areas is therefore an issue, since the new infrastructure affects local or customary rights to water. This is because upstream activities and land use changes affect runoff, flooding and sedimentation. Due to a poor definition of local rights and a lack of control of water use, water is taken in an *ad hoc* manner, which is often illegal. There is also a lack of understanding of rights and legal issues. There is therefore a need for a holistic and strategic catchment management approach, as well as decentralised and participatory decision-making processes (Molle, 2004). It is not within the scope of this research to discuss the efficiency of these WUAs in achieving the aims of decentralisation, as they are still in the establishment phase. However, the extent to which customary rules within communally owned areas are being integrated into these new, decentralised WMIs is addressed.

5.5 Current lawful water use in the homelands

Existing lawful use of water in former homelands is currently being investigated. In a plenary Statement (IWMI, 2005), it was concluded that 'The Constitution of South Africa and the NWA (1998) clearly recognise black customary law and therefore existing water use in former homelands are lawful under the Act and will be recognised as formal entitlements until they are replaced by compulsory licensing' (IWMI, 2005 p. 1). In the decentralisation process, the WUAs are seen to be the institutions through which water licenses will be acquired in the future. They will replace the existing traditional systems' water rights, with the allocation of water licenses. A brief history of WRM in South Africa is given in the next section in order to ascertain how these State institutions are currently managing water and local water rights.

6. HISTORY OF WATER RESOURCE MANAGEMENT IN SOUTH AFRICA

6.1 Water management during Apartheid

Early water policy and legislation was built on notions embedded in water legislation from Holland, where "water was described as being a nuisance rather than being a strategic resource, and due to its abundance, peaceful common consumptive use was not a problem or source of dispute" (Uys, 1996, cited in Tewari, 2001 p. 5). Needless to say, water was consumed as though it were abundant and laws were created with the same mindset, as described by Tewari (2001 p. 2):

> The water rights in the colonial and Apartheid era were meant to satisfy the needs of the dominant communities in the society at the expense of the majority of the native society. During the Dutch rule, water rights decisions in the water courts, favoured the company which assumed *dominus fluminus* (overall rights of control) over water that was considered public. During the British era, water was considered private and therefore, water rights decisions favoured individuals.

1910 saw the creation of the Union of South Africa and the first nationally applicable water legislation, the 1912 Irrigation and Conservation of Waters Act. The role of the State was generally limited to irrigation activities and so agriculture became the sector most involved in WRM. However, with the global industrial recovery after World War II came the need to adjust water legislation to suit the high demands for primary raw materials. Thus, the 1956 Water Act was introduced (Rowlston *et al.*, 2000), which granted exclusive use but not ownership of water. The Act tried to regulate public water for all water user sectors in the national interest by handing control of all water in excess of user rights to the State. Many 'Government Water Control Areas' were established and the State played the dominant role in planning and implementing water resource developments. The courts had no jurisdiction in these areas and the election of the National Party government in 1948 saw an increasing bias of water resources access towards the white population (Rowlston *et al.*, 2000). Under Apartheid, the majority black population of various ethnicities were placed into resource poor and underdeveloped 'homelands' and were purposefully ignored by the government, while a small white minority benefited from development (DWAF, 20004b). Some of the *Xhosa* people were placed in the homeland called the Ciskei. These self-governed homelands held some responsibilities for water management, while delegating others to communal authorities like traditional chiefs (Van Koppen *et al.*, 2002).

The aim the 1956 Water Act was to control water via a system of rights based on land ownership – the riparian system. Agriculture was the most important focus of water policy, as evidenced by the fact that the right to water for productive purposes was tied to land and was only granted to those who owned land – farms and other properties. These private land owners could use water that flowed through, alongside, or under their land and therefore it

became ‘private’ water over which the State had limited control. Thus, since the 1913 Land Act determined land ownership along racial lines under the Apartheid system, access to water was therefore also determined by skin colour (DWAF, 20004b). Water as a basic right was not recognised and the disadvantaged majority population did not have easy or assured access to water. In addition, the old Water Act focused on water use and the development of dams rather than on water protection, conservation and demand management (DWAF, 1998c).

The 1956 Water Act and its supply management approach exposed many problems, the main issue being inequitable distribution and access to water. The Act also adopted many aspects of water laws from Holland which has a completely different set of circumstances, not only politically, but ecologically. Water in South Africa is scarcer than in Europe and a supply management approach which doesn’t encourage protection and conservation of water is unsustainable. Lastly, the Act lacked recognition of community knowledge of WRM. This lack of community involvement fails to instil a sense of community ownership and responsibility which often causes inefficient use and conflict (Zenani, 2006). When South Africa gained democracy, it changed its approach to these problems.

6.2 The new approach to WRM

As related above (section 3.3), there has been a paradigm shift internationally over the last two decades in water management. This shift is also evident in South African water policy and legislation. Smith and Paterson (2002 p.27) argue that “The distinction between public and private water formed the foundation of South Africa’s water law prior to the introduction of the NWA. The Water Act (no. 54 of 1956) distinguished between ‘public water’ and ‘private water’”. The authors further note that public water could not be owned and was regulated by the State, whereas private owners of land had exclusive rights to the use of water on their property. The NWA fundamentally reformed South Africa’s water law and introduced significant philosophical, political and statutory paradigm shifts to WRM in SA (Ferguson and Mulwafu, 2004). It abolished the distinction between private and public water because it ‘perpetuated the inequitable distribution and access to South Africa’s water resources’ (Smith and Paterson, 2002 p. 27-28).

Van Koppen *et al.* (2002) note that during the Apartheid era in South Africa, control over water was unequally divided between the white Republic of South Africa (RSA) and the black homelands. These homelands were reserves created for Africans by the white State. It was within these homelands that black Africans could aspire to self-governance (Ross, 1999 cited by Van Koppen *et al.*, 2002 p.2). The white-governed South Africa controlled the bulk of water available in the country and granted riparian rights mainly to high-volume water users, like commercial farmers, with the relevant State department playing an overseeing role. The homeland governments held some responsibilities for water management while delegating others to communal authorities like traditional chiefs (Van Koppen *et al.*, 2002).

When Apartheid ended, the NWA was promulgated. This Act seeks to redress the race and gender inequities of the past in the area of water management. The implementation of this Act in the former homelands seeks to reconcile old and new governance forms. The NWA shows that water is essentially a tool to move society towards social and environmental justice and poverty eradication (Van Koppen *et al.*, 2002). Justice and poverty eradication should be achieved by ensuring water resources are shared with historically disadvantaged individuals. This is a movement towards integrated WRM. Van Koppen *et al.* (2002) claims that 'In the NWA, DWAF promotes water development for domestic and productive purposes. It also promotes empowerment and a stronger influence in decision-making over water, within poor communities. There is a new focus on the need to supply the basic human need of domestic water by new democratically elected local governments, although these have often been noted to be at 'loggerheads with traditional chiefs' (RSA, 1998b cited by Van Koppen *et al.*, 2002 p. 3).

A general concern that the DWAF regional office identified after the establishment of the country's first CMA (in the Olifants WMA) was that small-scale irrigators risked being overlooked. Whereas large-scale farmers were well organised and represented in the CMA process, the many small-scale irrigators did not have a means by which to voice their views and be involved in management. Therefore, an approach was initiated by a black community activist as a 'bottom-up' approach to water management where workshops with stakeholders were held in addition to public participation meetings. The bottom-up approach was used to address social inequalities of the past, one of which includes access to water. Of fundamental importance to the process is co-operative governance (Van Koppen *et al.*, 2002 p.14). This is because fragmented service delivery by various divisions may not be the best approach for resource poor areas.

The integrated approach as outlined by the NWA also focuses on women and increasing their involvement in water management. There is also emphasis on empowerment of black resource-poor farmers and a focus on the better management and conservation of domestic supply to prevent illegal usage and exploitation of water (Van Koppen *et al.*, 2002). The new approach in the NWA focuses on the provision of water by newly elected local government structures, which should also consider the roles of the traditional authorities that govern these areas. The challenge here is the empowerment of the traditional authority, but also definition of the roles and responsibilities of local government with transparency and accountability being emphasised (Van Koppen *et al.*, 2002).

6.3 Concepts underpinning integrated WRM

Integrated WRM (IWRM) is an important concept in the promotion of democracy in post-Apartheid South Africa. In this country, catchment management has been adopted as the approach to IWRM through the NWA.

The focus of the old legislation was on water supply management. Large amounts of capital, research and manpower were committed to expanding existing water infrastructure with more innovative water schemes (Naumann, 1998). The NWA fundamentally reformed South Africa's water law and introduced the move from this traditional approach of supply management to demand management, which aims to reduce demand for water through pricing strategies and other measures (Smith and Paterson 2002, p. 28). IWRM is recognised in the preamble to the NWA, through 'The need for the integrated management of all aspects of water resources and, where appropriate, the delegation of management functions to regional or catchment level so as to enable everyone to participate'.

The Global Water Background Paper no 10 (Jønch Clausen, 2004) gives a good background on the history and purpose of IWRM:

The concept of IWRM was already recognised in Agenda 21 of the UN Conference on Environment and Development in Rio de Janeiro in 1992. At the World Summit on Sustainable Development in Johannesburg in 2002, IWRM was one of the main themes on the programme and was defined as "a process, which promotes the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems" (Jønch Clausen, 2004 p.14).

Jønch-Clausen (2004 p.12) notes that poor management of water resources causes health, environmental and economic losses on a scale that hinders development and makes poverty alleviation difficult. Inadequate management of water leads to:

- Water and health degradation, and loss of productivity;
- Soil degradation and loss of productive land;
- Risk management, floods and droughts.

He further notes that good quality water management is important to achieving the Millennium Development Goals such as:

- *Poverty.* Water is important for production and production is important for poverty reduction. IWRM processes should therefore contribute to frameworks for investment in infrastructure, such as irrigation schemes, which are necessary for community development;
- *Major diseases.* IWRM can assist water managers in making rational decisions with regard to water use, conservation and protection, preventing water-borne diseases such as malaria, bilharzia, cholera and others.
- *Environmental sustainability.* IWRM needs to be applied to protect, conserve and restore the growing number of threatened water sources around the world. (Jønch-Clausen, 2003: p.12)

6.3.1 The three pillars of IWRM

IWRM has "three pillars" of implementation as described by Jønch-Clausen (2004, p.16): (a) moving toward an enabling environment of appropriate policies, strategies and legislation for sustainable water resources development and management; (b) putting in place the institutional framework through which the policies, strategies and legislation can be implemented; (c) setting up the management instruments required by these institutions to do their job.

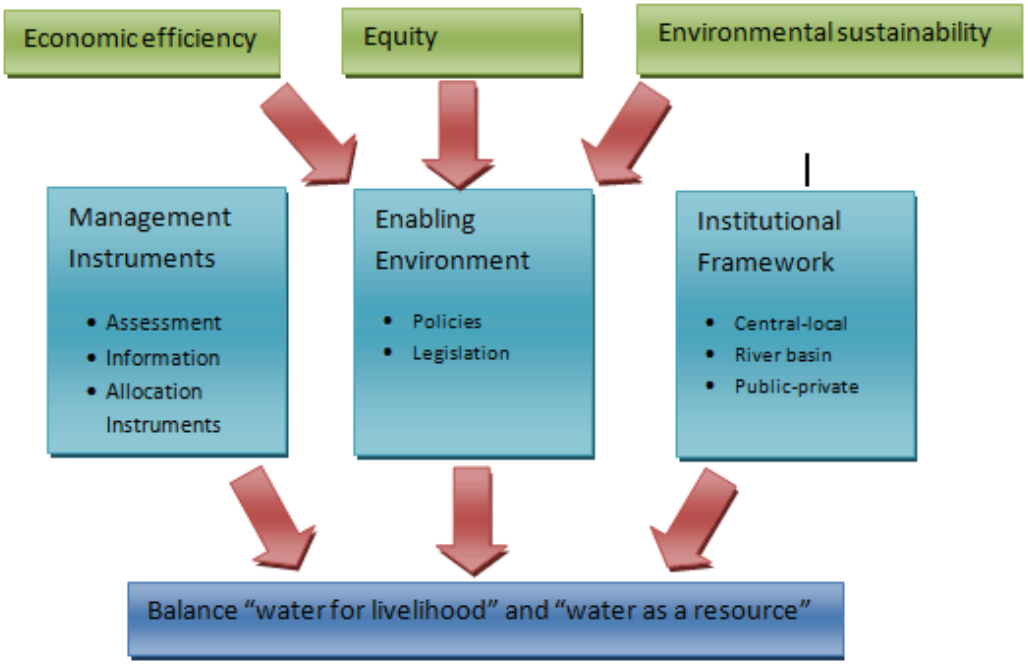


Figure 4: The three tiers of IWRM

Source: Jønch-Clausen, 2004

Jønch-Clausen (2004 p.16) notes that government plays a key role in the implementation of an IWRM framework. Government should be the main regulator and controller in the water sector and its associated infrastructure. However, he notes that "water is everybody's business" and a resource to be managed at the lowest appropriate level. Governments can only successfully implement IWRM if they involve all relevant national, regional and trans-boundary stakeholders. He notes that they must also ensure empowerment of the poor, especially women.

The IWRM framework should involve the integration of various sectoral views and interests. Integration should take place within:

- *The natural system.* This concerns the integration of land and water management, surface and groundwater, upstream and downstream water related interests that recognise the *full* hydrological circle; and
- *The human system.* Integration within the human system relates specifically to cross-sectoral integration of all relevant stakeholders in the decision-making process. Formal mechanisms for co-operation and information exchange should be created at the highest political level and put in place in all relevant levels of water management (Jønch-Clausen, 2004 p. 17).

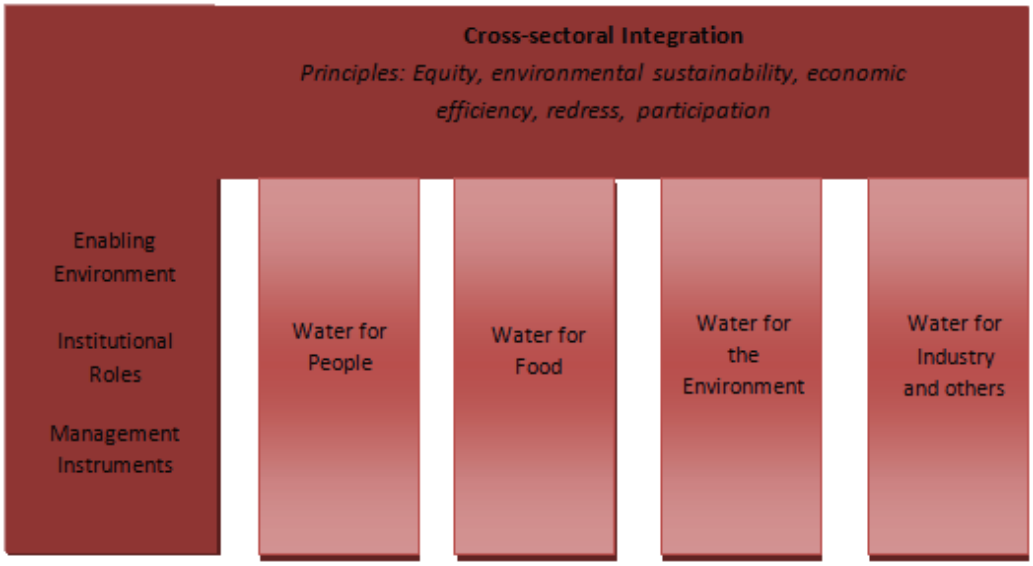


Figure 5: Cross-sectoral integration

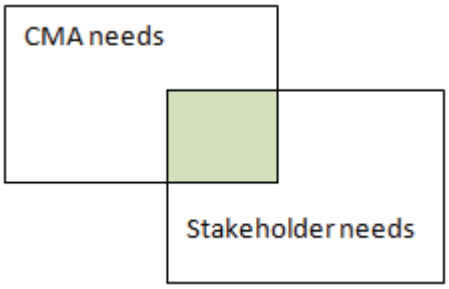
Source: dwaf.gov.za/IWRM

It is this thinking that provides the conceptual background of integrated WRM in South Africa. The NWRS (DWAF, 2004b p.11) States that CMAs will be responsible among other things, for ensuring that there is consonance between their water-related plans and programmes and the plans and programmes of other role players within the WMA concerned. They will therefore have to establish co-operative relationships with other WMIs, water service institutions, provincial and local government authorities, communities, water users ranging from industries to individual irrigators and other interested parties.

6.3.2 Critique of IWRM in the literature

IWRM requires a change from single-sector, centralised, delivery-oriented management to sector- integrated, locally focused management which includes and takes into account diverse

stakeholders (Lotz-Sisitka and Burt, 2006). James (2003) claims there are problems with co-operation between the different institutions, authorities and communities in WRM in South Africa. He feels there is a great need for clarification of roles and responsibilities of the different government institutions, and better coordination is needed both within government structures and the way in which government bodies interact with local communities for provision of water services. He also highlights the need for the effective involvement of local communities, and a need to create tools for effective communication between government and local communities.



Motteux *et al.* (2006) state that due to the NWA, the management of water has become a partnership between local water users, regional catchment managers and DWAF. This encourages communities to become involved in developing and managing their resources. At local and regional scale, all stakeholders can become involved and participate directly. However, catchment and national scales are too large to involve all stakeholders, so here representative participation is necessary, together with processes to communicate with local stakeholders (Motteux *et al.*, 2006). Catchment activities must at least meet some of the needs of all stakeholders. This gives stakeholders a strong incentive to participate. The relationship between the two has been illustrated by Motteux *et al.* (2006) as two overlapping boxes, with the shaded area symbolising shared needs.

This is the first step for participatory catchment management. IWRM forms the basis of much water-related post-Apartheid policy and legislation. The next section will provide a background to the law that underpins IWRM in South Africa.

7. POLICY AND LEGISLATION OF INSTITUTIONAL WATER RESOURCE MANAGEMENT IN SOUTH AFRICA

7.1 The South African Constitution (Act 108 of 1996)

The Constitution lays down the foundation upon which the NWA and other water law is formed. The preamble of the constitution emphasises the imperative to "heal the divisions of the past…" and "Improve the quality of life of all citizens…" South African law seeks to redress imbalances of the past regarding water resource allocation, while still respecting all citizens' constitutional rights. Certain sections in the Bill of Rights[1] also play an important role in moulding policy and law regarding WRM. The constitutional right to "health care, food, water and social security" states that "everyone has the right to have access to…sufficient food and water…"[2] and equally important it is the responsibility of the State to take "…reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of each of these rights."[3]

Section 24 of the Constitution concerns the environment in which we live. It states that everyone has the right to live in an environment not harmful to their health or well being[4] and that the government must take reasonable measures to "…secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."[5] These natural resources include water resource use, implying that the relationship between communities and their water sources needs to be managed in a way which maintains a continual healthy supply of water. The constitutional property clause is also of some relevance, stating "no one may be deprived of property except in terms of general application"[6], and that "property is not limited to land"[7], implying the inclusion of water. There is also a public commitment "to the reforms to bring about equitable access to all South Africa's natural resources"[8]. Regarding cultural and religious practices, section 31 states "Persons belonging to cultural, religious or linguistic community may not be denied the right, with other members of the community to enjoy their culture, practice their religion…"[9]

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[1] Chapter 2 of the Constitution
[2] Section 27 (1) (c) of the Constitution
[3] Section 27 (2) of the Constitution
[4] Section 24 (a) of the Constitution
[5] Section 24 (b) (c) of the Constitution
[6] Section 25 (1) of the Constitution
[7] Section 25 (4) (b) of the Constitution
[8] Section 25 (4) (a) of the Constitution
[9] Section 31 (1) (a) of the Constitution

7.2 The National Environmental Management Act (No. 107 of 1998)

The objective of NEMA is to provide for co-operative environmental governance in South Africa through establishing a set of framework principles that inform decision making on issues related to the environment. It must provide institutions that will promote co-operative governance and set out the manner in which organs of State will co-ordinate environmental functions. It must ensure that all activities that have a detrimental effect on the environment are minimised while maximising opportunity for sustainable development.

Since organs of State are in charge of all water resources in South Africa it is important to highlight some key principles set out in NEMA that they need to consider and use as guidelines while performing their functions. These include:

- Peoples' needs must be placed at the forefront of environmental management.[10]
- Development must incorporate the triple bottom line.[11]
- Negative impacts, waste, loss of cultural heritage and biodiversity must all be avoided and where this is not possible the utmost efforts to minimise these must be made.
- The development, use and exploitation of water resources and the ecosystems to which they are attached must not exceed levels that will jeopardise their integrity.[12]
- The preventative, polluter pays and risk-averse principles need to be considered for water to be used sustainably.[13]
- The benefits of water resources must serve the public interest and the environment protected as common heritage of the people.[14]
- Decisions taken must be transparent and done in an open manner that allows access to information in accordance with the law.[15]

7.3 The National Water Act (No. 36 of 1998)

The NWA provides for the water law reform process and places the government as the public trustee of South Africa's water resources and therefore needs to ensure "…that water is

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[10] Section 2 of NEMA
[11] Section 3 of NEMA
[12] Section 4 of NEMA
[13] Section 4 of NEMA
[14] Section 4 of NEMA
[15] Section 4 of NEMA

protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner for the benefit of all persons and in accordance with its constitutional mandate".[16] It follows on to include environmental and social considerations stating that "…the Minister is ultimately responsible to ensure that water is allocated equitably and used beneficially in the public interest while promoting environmental values".[17] Essentially the Act enables the State to assume total control over the nation's water resources and its utilisation thereof, allowing for more holistic management mechanisms to be put in place that take into account the entire ecological water cycle (Glazewski, 2005). One of these mechanisms includes the NWRS that was approved by cabinet in 2004 (see below). The Act ensures that in the management and control of South Africa's water sources a number of factors are incorporated including "…meeting basic human needs of present and future generations; promoting equitable access to water; redressing the result of past racial and gender discrimination; promoting the efficient, sustainable and beneficial use of water in the public interest; facilitating social and economic development; providing for growing demands for water use protecting aquatic and associated ecosystems and their biological diversity; reducing and preventing pollution of water resources; meeting international obligations; promoting safety and managing floods and droughts".[18]

The NWA also encourages decision makers to be proactive. This means that decision-makers can no longer only consider impacts on communities once an issue/question is raised, but must take a proactive stance to ensure all impacts and rights are considered prior to the decision. This promotes the participation of people in the management of all their local water resources (Zenani and Mistri, 2005). Stakeholder involvement is promoted by the devolution of power from national to local levels through the new WMIs, described in more detail below.

The NWA outlines in Chapters 7 and 8 the requirements for the establishment of CMAs and WUAs. These institutions are found within the 19 WMAs that the country is divided into. The WUAs are defined by the Act as different to CMAs as 'They operate at a restricted localised level, and are in effect co-operative associations of individual water users who wish to undertake water related activities for their mutual benefit' (RSA, 1998a p. 98) The NWA guide and WMI overview (DWAF, undated) describe these institutions in more detail and they will be explained further below.

7.3.1 Water use and licensing

Due to the fact that the Minister of Water Affairs and Forestry is the public trustee of all

[16] Section 3 (1) of the NWA
[17] Section 3 (2) of the NWA
[18] Section 2 (a)-(k) of the NWA

water resources located in South Africa, any entity that requires the use of water may only do so if permissible under section 22 of the Act. The general circumstances under which water may be used are:

- In terms of general authorisation issued under the Act[19];
- In terms of an existing lawful water use[20];
- For "*de minimis*" uses of water which are set out in Schedule 1 of the Act, and include reasonable domestic use, domestic gardening, animal watering, fire fighting, and recreational use[21]; or
- In terms of a licence issued under the NWA[22] (Smith and Paterson, 2002 p.32).

WMIs that are the 'responsible authority' relating to licensing need to pay particular attention to section 27 where the considerations for issuing of general authorisations and licences are laid out. Of equal importance is section 41 which allows these responsible authorities to ensure that licences are only handed out if the activity is socially sustainable (Smith and Paterson, 2002).

7.4 The National Water Research Strategy 2004

The NWRS sets out a plan to manage water resources in a manner which promotes equity, sustainability, efficiency, and in particular to improve the State of inequity, poverty, and deprivation that currently affects the country. The NWRS outlines the key strategies, objectives, plans, guidelines and procedures for implementing the provisions under the NWA which includes strategies for the protection of water resources, water use, water monitoring, and disaster management. The procedures for major implementation activities and their financial implications are also covered. The relationships between different water policies and laws are discussed with regard to how water should be managed in an integrated way with the co-operation of all stakeholders. The strategy aims to strengthen communication between the citizens of South Africa and all levels of government so that more accurate decisions, policies and laws regarding WRM can be made (DWAF, 2004b).

The following four sections on (a) water conservation and water demand management; (b) protection of water resources; (c) water use and licensing; (d) the pricing strategy are key factors in the NWA and in the NWRS and will be explained in more detail.

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[19] NWA, Section 39
[20] NWA, Section 32-35
[21] NWA, Section 4(1)
[22] NWA, Section 40-52

7.4.1 Water conservation and water demand management

The NWA does not make any specific provisions for water conservation (WC) and water demand management (WDM), but conservation in relation to water is defined in the Act as "…the efficient use and saving of water, achieved through measures such as … water demand management …"[23] This clearly indicates that WC/WDM is an essential part of WRM in South Africa. To achieve a sustainable long term balance between water availability and water requirements an increasing amount of attention must be placed on managing the increased demand for water while ensuring the least amount of infrastructural development for water supply takes place. WC/WDM essentially translates into water being used in a manner that is most effective and efficient while ensuring loss and waste of water is minimised (DWAF, 2004b). This approach of care and protection of water resources is provided for in the NWA by enacting conservation measures, such as:

- Resource protection measures;[24]
- Conditions for water use in general authorisations and licences;[25]
- Water pricing as an incentive for efficient use;[26]
- Management of land-based activities via stream flow reduction and controlled activities.[27]

7.4.2 The National Water Conservation and Demand Management Strategy

DWAF is currently developing The National Water Conservation and Demand Management Strategy which includes subsidiary strategies for three identified water use sectors being: (1) water services; (2) agriculture; (3) Industry, mining and power generation. These strategies aim to encourage and support water institutions and water users to use water more efficiently while reducing their demand by, firstly, encouraging people to maintain their current quality of life while reducing water use, and secondly by encouraging changes in behaviour and adopting water saving technologies that maximise efficiency and minimise wastage. These strategies are not rigid prescriptions but rather act as guidelines that aim to achieve a conservation culture which water institutions and users can mould into a local set of circumstances (DWAF, 2004b).

However, reducing water use is not the only concern for WC/WDM considering that there are

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[23] NWA, Section 1(1)(v)
[24] NWA, Chapter 3
[25] NWA, Chapter 4, part 2
[26] NWA, Chapter 5, part 1
[27] NWA, Chapter 4, part 4

social, environmental and economic advantages to be gained from programmes designed to achieve sustained reductions in water use, such as:

- Water users are empowered to understand the value of water as a scarce resource, and to adopt a responsible attitude to its use.
- Water is made available for allocation to other uses, either within the particular sector or for competing uses, and for the Reserve (section 7.4.3.1 below).
- The necessity for capital investments in new infrastructure can be postponed, and increases in the cost of water to end-users delayed.
- The financial security of water institutions can be improved by reducing non-revenue demand, i.e. unaccounted-for water caused by leakage from supply and distribution systems, and water wasted by non-paying consumers (DWAF, 2004b).

Three fundamental principles laid out in NEMA set the building blocks upon which the National WC/WDM Strategy is based. The first being that 'Water institutions should strive to supply water efficiently and effectively, minimise water losses and promote WC/WDM among their consumers'[28]. Secondly, 'Users should not waste water and should strive to use it efficiently'[29], where waste water refers to no direct benefit coming from water use and where efficient use is achieved when benefit gained is optimised. Lastly 'WC/WDM should be an integral part of the planning processes for WRM, water supply and the provision of water services'[30] where participatory and consultative approaches to enacting WC/WDM extend the planning process down the supply chain to the end user by ensuring a shared responsibility for efficient water use is taken up by water institutions and water users (DWAF, 2004b). These principles aim to form a common culture among all water institutions and water users in South Africa to ensure that water as an accessible resource can become sustainable.

7.4.3 Protection of water resources

Protection is defined in relation to water as "… maintenance of the quality of the water resource to the extent that the water resource may be used in an ecologically sustainable way … prevention of the degradation of the water resource, and the rehabilitation of the water

[28] NWRS, pg 79

[29] NWRS, pg 79

[30] NWRS, pg 79

resource"[31].

The protection of water resources is fundamentally related to their use, development, conservation, management, and control. A set of mechanisms that collectively aim to protect South Africa's water resources are provided for in chapter 3 of the NWA and need to be developed progressively within the context of the NWRS and the Catchment Management Strategy (CMS) (RSA, 1998a). These include the implementation of a classification system, and determination of water resource quality objectives by the Minister[32]; the Reserve[33]; pollution prevention[34]; and emergency incidents[35].

7.4.3.1 The Reserve

The determination and implications of the Reserve are of particular interest and are explained by Smith and Paterson (2002 p. 31) as follows:

> Once the Minister has classified water resources, the Minister must determine the Reserve for all or part of these water resources. The Reserve comprises two parts, namely the basic human needs reserve (which provides for the essential needs of individuals for drinking, food preparation and for personal hygiene) and the ecological reserve (which is the water required to protect the aquatic ecosystems of the water resource). The Reserve refers to both the quantity and quality of a water resource. The Minister and all organs of State must give effect to the reserve when exercising any power or function under the NWA. In addition, no authorisation to use water under section 22(5) of the NWA may be generally issued prior to the determination of the Reserve. Therefore, social considerations, embodied in the basic needs aspect of the Reserve, will permeate decisions and actions of organs of State in respect of WRM.

7.4.4 Pricing strategy

The pricing strategy objective is to contribute to achieving equity and sustainability in water matters by promoting financial sustainability and economic efficiency in water use. It aims to recover the real costs (financial costs, managing water resources, and supplying water) from water users while ensuring that historically disadvantaged water user groups can benefit from a range of available subsidies so that equitable access is achieved.

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[31] NWA, Section1(xviii)
[32] NWA, Chapter 3, part 1 & 2
[33] NWA, Chapter 3, part 3
[34] NWA, Chapter 3, part 4
[35] NWA, Chapter 3, part 5

The NWA provides for three types of water use charges being:

1. Funding WRM;
2. Funding water resource development and use of water works;
3. Achieving the equitable and efficient allocation of water, (Smith and Paterson, 2002).

Noteworthy particulars of the pricing strategy are that it does not deal with treated water supplied in bulk, e.g. water that is supplied to households via the water services authority, but only deals with water uses as described in section 21 of the Act. Treated water is dealt with in the Water Services Act (WSA). However, an explicit requirement in the Act requires the pricing strategy to support the establishment of tariffs for water services in terms of the WSA (DWAF, 2004b).

Water use charges will also be specific to each of four end users being municipal; industry; mining and energy; agriculture and stream flow reduction activities. Charges for each of these sectors will differ according to the costs of and benefits from WRM services. The CMAs will be progressively empowered to undertake WRM responsibilities, including the setting and collection of charges in their area of jurisdiction. Charges will differ from CMA to CMA with respect to local conditions. However, as most CMAs have not been set up yet, DWAF will hold these responsibilities in the interim (DWAF, 2004b). Financial assistance to water users may be provided either via the pricing strategy or via section 61 of the NWA. The pricing strategy provides for emerging farmers on government irrigation schemes to be subsidised on a reducing scale over a period of five years and depreciation charges phased in over a further period appropriate to each case. Section 61 provides capital cost subsidies that are available to emerging farmers who are members of WUAs. These subsidies are for the construction or refurbishment of communal water works and are limited to R10 000 per hectare or R50 000 per person (DWAF, 2004b).

7.5 Water Services Act (No. 108 of 1997)

The WSA is set up to provide for the rights of access to basic water and sanitation and the right to institutional structures required to provide water as laid out in section 27 of the Bill of Rights. Noteworthy sections in the Act include the setting of the norms and standards for tariffs with regard to water provision[36], financial assistance to water; financial assistance to water service institutions[37]; and the promotion of effective WRM and conservation[38]. The

[36] Section 2 of the WSA
[37] Chapter IX of WSA
[38] Section 2 of WSA

NWA needs to be seen in conjunction with the WSA, where although the provision of water is a separate activity in the development and management of water resources, water still needs to be provided in a manner that is consistent with the goals of WRM (Glazewski, 2005).

7.6 Other relevant legislation

Local Government: Municipal Systems Act (No. 32 of 2000) Municipalities are required to draw up Integrated Development Plans (IDP) for the integrated development and management of their areas of jurisdiction. An IDP is intended to encompass and harmonise planning for a range of sectors including water planning, transport planning, land use planning, and environmental planning. This process must involve all stakeholders, including traditional leaders. Section 78 of this Act provides for the criteria and process for deciding on mechanisms to provide municipal services. The Act identifies a number of triggers for an S78 assessment which is a process to assess potential service delivery mechanisms for the provision of a municipal service. One of the key triggers occurs when a municipality is restructured or re-organised. As a result of the devolution of powers and functions for water services from DWAF to municipalities in July 2003, municipal service areas were significantly extended and/or municipalities were re-organised and restructured; and so there was a need for most municipalities to undertake S78 assessments for the provision of water services. When choosing a water service provider for the municipalities' area of jurisdiction the municipality may choose to carry out water provision itself.

The Promotion of Administrative Justice Act (No. 53 of 2002) determines how all organs of State exercising a public function are accountable in terms of adversely affecting other parties. This provision is important as it relates to describing the responsibilities, rights and functions of water management authorities and traditional leaders.

The National Heritage Resources Act (No. 25 of 1999) provides an opportunity for communities to participate in the "identification, conservation and management of their cultural and religious resources". Many water sources in areas with traditional governance systems have such values and therefore needs to be incorporated into WRM.

7.7 Conclusion

South Africa's water law is aimed at encapsulating principles of equity and sustainability that require the social, natural and economic environment to be acknowledged as we progress into the future. It is essential that in ensuring equity the people who are actually using the water resources at a local level are included in the decisions regarding its use and management. At the same time, channels for information to pass from State to the people and vice versa are

essential for WRM to work effectively and to encourage feedback for improvement. In the next section we look at the structure of the WMIs that intend to involve people at local level, rather than using a ‘top down’ approach, and will continue with an overview of capacity building, public participation and communication as outlined by the NWRS, NWA and related policy.

8. WATER MANAGEMENT INSTITUTIONS

8.1 Introduction

In terms of the NWRS (2004), the country has been divided into 19 WMAs, wherein water use is supposed to be regulated by CMAs, a new regional institution specified in the NWA. Since these WMAs are based on hydrological boundaries, they can cut across the administrative boundaries of provinces and districts. CMAs are to prepare a CMS, which must be in consonance with the NWRS, and also incorporate and balance water requirements across ecological and human needs for each WMA. WUAs are found at a strictly localised level and can provide a mechanism with which to implement the CMS. The WUAs can also play an important part in poverty eradication and providing food security. The NWA provides the framework for integrated WRM. It outlines the different WMIs as well as the specific functions of the different institutions. The WMI guideline outlines the various tiers within this framework (DWAF, Undated) and is used as the reference for information on the WUAs below.

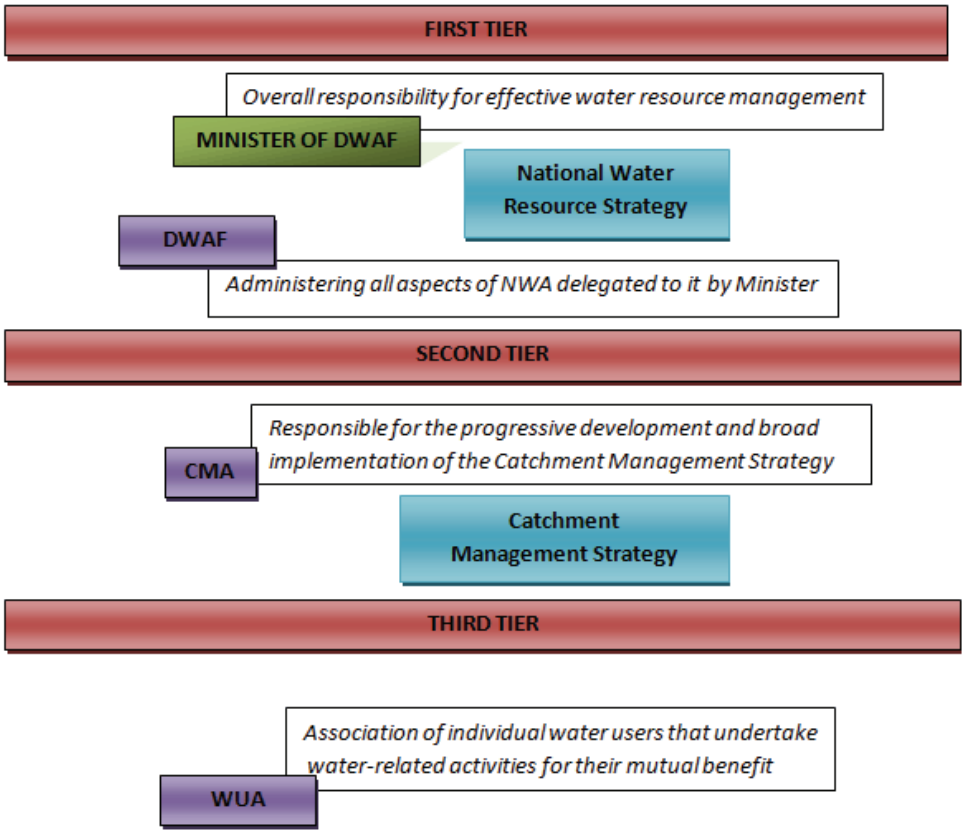

Figure 6: The three tiers of WRM

8.2 First Tier

The Minister of Water Affairs and Forestry and DWAF have the overall responsibility for effective water management guided by the NWRS. The Minister is the custodian of water resources and, as we have seen in section 7.3 on the NWA, has the ultimate responsibility to ensure that:

- Water resources are protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all persons; and
- Water is allocated equitably and used beneficially in the public interest, while promoting environmental values.

DWAF is responsible for administering all aspects of the NWA delegated to it by the Minister or Director-General. As the various WRM institutions are established and the responsibility and authority for WRM is delegated or assigned to them, the Department's role will change. It will increasingly focus on national policy, a regulatory framework for WRM, and ensuring that other institutions are effectively fulfilling their roles and responsibilities.

8.3 Second tier

The second tier comprises the CMA with its CMS. The CMS must be consistent with the NWRS.

8.3.1 Catchment Management Associations

CMAs are statutory bodies and represent the second tier of the water management framework. A CMA will be established in each of the 19 WMAs. Each CMA is responsible for the creation of a CMS for their area of jurisdiction, and, ultimately, also to carry out functions such as water resources planning in the catchment, registration, water charge collection, water authorization, and licensing (including compulsory licensing). Public participation in the establishment process and fair representation in the future Governing Board and activities of the CMAs are legally required (Van Koppen *et al.*, 2002). This is promoting change from a centralised management approach based on command and control to a decentralised participatory model, based on co-operative governance and coordination through the CMA (Muller, 2001, cited by Van Koppen *et al.*, 2002).

8.4 Third tier

The WUA becomes the third tier of WRM institutions when water management activities are devolved to the WUA. The following information is outlined in the DWAF WMI Guide.

8.4.1 Water User Associations

A WUA is a statutory body established by the Minister. It is a grouping of water users who wish to work together because of a common interest. The water users 'co-operate' in undertaking water-related activities at the local level for their mutual benefit. For example, a WUA would be formed if a group of farmers wanted to build a common canal or dam for mutual benefit, or a group of emerging farmers wished to co-operate. Existing irrigation boards, water boards for stock watering purposes and water control boards that look after ground water use (subterranean water control boards) will all be transformed into WUAs. This may involve extending the area of jurisdiction of these institutions to include other users or other water resources. A WUA may be a single-sector or multi-sector association. A single-sector association comprises a group of similar users, for example emerging farmers, and acts in the interests of those farmers. According to Pegram and Mazibuko (2003), it is most likely that activities in this type of WUA would be oriented around the coordinated management of infrastructure and water works, but there is scope for a more management-coordination role. The authors continue:

> It is useful to distinguish certain WUAs established solely for the purposes of emerging and/or subsistence farmers, particularly where these are designed to empower the rural poor. This type of WUA may be linked to the operation of a new or existing irrigation

scheme, but will generally be focused on one or more relatively identifiable communities with relatively high levels of social organization and/or cohesion (around both water and non-water issues). However these WUAs may have limited formal technical, managerial and/or legal capacity, and therefore require significant support both during and after establishment, with linkages into other water sector institutions, the Integrated Rural Development Strategy, and other sector institutions (particularly Agriculture, Trade and Industry, and District Councils) (Pegram and Mazibuko, 2003 p. 16).

A multi-sector association comprises a group of different users, for example industry, farming, mining and so on, and acts in the interests of the different users.

8.4.2 The purpose of a WUA

The purpose of a WUA is to enable water users to cooperate and pool their resources (financial, human resources and expertise) to carry out water-related activities more effectively. WUAs have an important role to play in respect of poverty eradication and providing food security. Most WUAs are former irrigation boards and focus on irrigation. WUAs may also be established:

- For stream flow reduction activities such as afforestation;
- For the treatment and disposal of effluent and waste;
- To control the use of water for recreational and/or environmental purposes.

8.4.3 The functions of a WUA

The functions of a WUA depend on its approved constitution and the purpose for which it was established. The constitution of a WUA could provide for the following functions to be performed by the WUA:

1. To prevent water from any water resource being wasted;
2. To protect water resources;
3. To prevent any unlawful water use or acts that negatively impact on the water resource;
4. To generally supervise the water resources;
5. To regulate the flow of any watercourse;
6. To investigate water quality and water use;
7. To construct, operate and maintain waterworks for draining land or supplying water.

The NWA regulates the functioning of a WUA. A WUA may only exercise management

powers and duties if these powers and duties have been delegated by the CMA or the Minister. The establishment of WUAs simplifies the work of the Minister (and DWAF) and of the CMAs because they can deal with organised groupings (the WUA) rather than with many individual users.

8.4.4 Public consultation

A WUA is established after public consultation has taken place. If the Minister undertakes the public consultation, the costs of this consultation can be recovered from the WUA once it is established. A WUA for a particular purpose would usually be established following a proposal to the Minister by the interested parties. The Minister may require the person or parties that submit the proposal to pay the costs for public consultation in advance. The public participation process is described later in this section.

8.4.5 Proposal for establishment of a WUA

Any category or group of water users may submit a proposal to the Minister for the establishment of a WUA. The Director-General of DWAF may assist water users to develop a proposal.

8.4.6 Constitution of a WUA

The NWA outlines all the matters that must be addressed in the constitution of a WUA. The Act (Schedule 5) also includes a model constitution that may be used as the basis for drafting a constitution. Whilst the WUA draft constitution may include a number of functions for the WUA, this does not mean that the WUA will automatically have these functions when it is established.

8.4.7 Transformation of irrigation boards

All irrigation boards and subterranean water control boards that existed prior to the commencement of the Act must be transformed into WUAs. Certain water boards established in terms of the former Water Act for stock watering purposes will also be transformed into WUAs. In essence transformation of irrigation boards means that they should reform their operational area and management structure to be more representative of the demographics of the area, in terms of race and gender. South Africa has a history of inequitable access to resources. Transformation is one of the mechanisms to achieve equity. The Minister has issued guidelines concerning the composition of the management committee of a transformed irrigation board.

8.4.8 Funding for the WUA

The ability of a WUA to fund itself is vital to its existence. The establishment of a WUA is

only possible if members are able to pay for the administrative costs of the WUA as well as the operational and maintenance costs of any capital works associated with the WUA. A WUA is therefore normally funded through charges levied on its members called 'water use charges'. Other potential sources of funding include:

- The proceeds from operating waterworks;
- Direct financial assistance from DWAF or from a CMA;
- Other sources that meet the requirements of the Act, such as aid programmes or sponsorship funding.

The Minister may also provide financial assistance to a WUA for the purposes of achieving the objectives of the NWA (subject to regulations made under the Act). The Department has developed a policy for providing financial assistance to existing or new irrigators of historically disadvantaged groups who are members of a WUA.

8.4.9 Additional powers and functions

WUAs may be delegated additional powers and functions by the CMA or the Minister. The WUA must be compensated for the costs incurred as a result of the delegation of additional powers and functions.

8.4.10 Incentives and benefits

The advantage to users of a WUA will depend upon the purpose for which the WUA is established. In the case of irrigation schemes for commercial or emerging farmers, establishing a WUA makes it possible to establish joint works on an economic scale which are shared by members. The development of individual small-scale works is normally not financially viable. In the case of WUAs established for control over recreational use, the benefit is that a single body assumes responsibility for the use of a particular water resource for recreational purposes. This allows the WUAs to undertake the necessary co-ordination and to balance the interests of different users in order to avoid conflict. When a group wants to establish a WUA for a particular water use, they must first establish whether the WUA will bring about sufficient advantages to the members. Membership of a WUA is voluntary, so if the WUA does not provide the necessary benefits, it will not be able to keep its members.

8.4.11 Other WMIs

In addition to CMAs and WUAs, the Act also provides for the following types of WMIs:

- Bodies that fulfil the functions of a WMIs in terms of the Act;
- Bodies responsible for international water management (DWAF, undated)

8.4.12 Water services institutions

In contrast to the WRM institutions, which deal with over-arching issues of water management across different types of uses, water services institutions (WSIs) interface with water users, whether individual households (residential users) or industrial users. The Water Services Act (1997) defines a WSI as a water services authority, a water services provider, a water board and a water services committee. A Water Services Authority (WSAu) means 'any municipality, including a district or rural council responsible for ensuring access to water services'. A Water Services Provider (WSP) means 'any person who provides water services to consumers or to another WSI'. These may be bulk water producers (called Bulk Water Services Providers or BWSPs), who provide water to users other than individuals, or simply WSPs like Water Boards, who supply water directly to consumers (James, 2003). The WSAU must understand the water supply and sanitation needs of consumers within its area of jurisdiction, and ensure that infrastructure for reticulation, (i.e., reservoirs, pumping stations and pipelines) are developed, operated and maintained, as well as managing revenue collection and maintaining consumer relations. The WSAU has to come up with a Water Services Development Plan (WSDP), which details the present and future provision of water and sanitation services for individuals and for industrial uses. However, the allocation of water for these uses has to be in consonance with what is specified in the CMS (James, 2003).

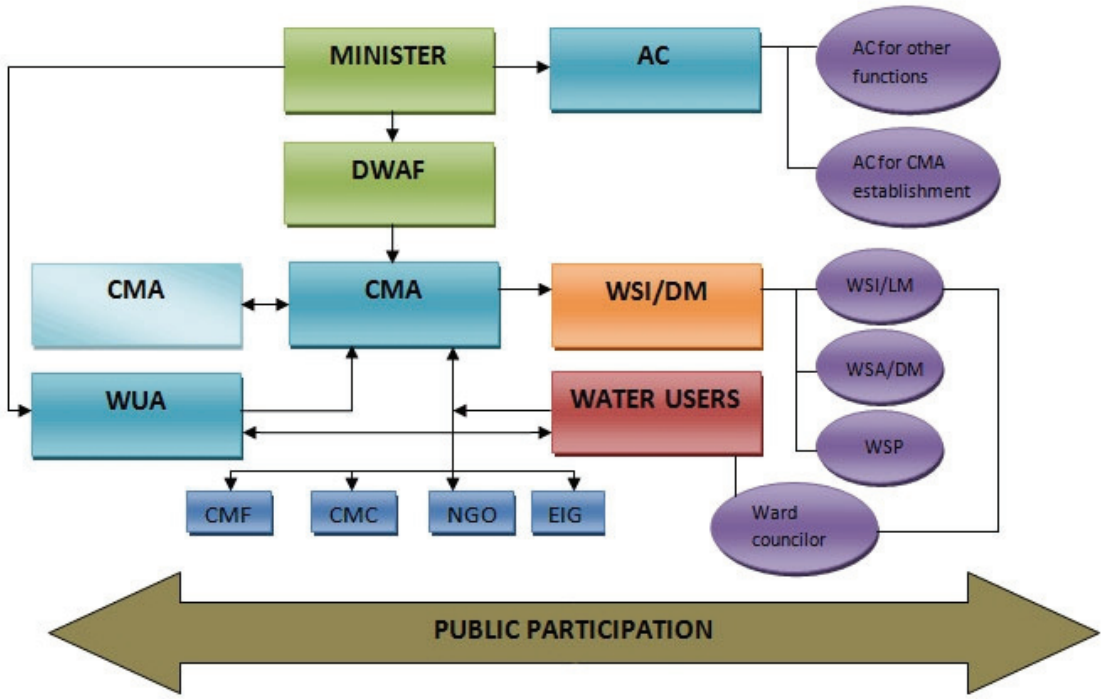

Figure 7: Overview of WMI **Source: James, 2003**

KEY	
AC – advisory committee	CMF – catchment management forum
CMC – catchment management committee	EIG – environmental interest group
WSI – water service institution	WSAU – water service authority
WSP – water service provider	DM – District Municipality
LM – Local municipality	

Critical to the establishment process and the successful functioning of WMIs is the process of capacity building and public participation. Communication linkages between stakeholders within the WUA and the institutions that support them also provides for successful implementation of capacity building and public participation. These processes and the policy that supports them will be outlined in the next section.

8.5 Capacity building and public participation

8.5.1 Introduction

The issues of capacity building and public participation have been specifically highlighted in our research as they focus on what is required in order to establish WUAs. Capacity building requirements indicate the training and information dissemination needed in order to inform participants of the establishment process and what is required to run a WUA. The policy for capacity building developed by DWAF and that which is emphasised within the NWRS is discussed in this section. Public participation is one of the vehicles through which capacity building is done and this process is researched in the study. The requirement for public participation, as outlined by the NWA in chapters 7 and 8 and in the public participation guidelines for WUAs and CMAs, is discussed below. Communication is also highlighted as it is a key to effective public participation and capacity building processes.

8.5.2 Communication

The communication strategy for catchment management (DWAF, 1999) is based on the ideology of the directorate whose business is to provide IWRM on a catchment basis. It stands to address the inequities of the past and promote 'representivity, fairness and sustainability' (DWAF, 1999 s. 2.1) It aims to target the following: WMI; WRM within the department; community based structures; rural communities including local and traditional authorities; national and regional departments such as education and the environment (s. 2.2).

Other larger audiences to target are mentioned which include the CMA, the WUA and educational institutions. The main objectives of the strategy include:

- Facilitation of the establishment of WMIs;
- Development of a strategy and policy for catchment management;
- To provide information to specific target audiences about policy, programmes and principles of catchment management and to co-ordinate activities and initiatives with regard to catchment management (DWAF, 1999, s. 3).

Under each of the objectives the strategy for the target audience is discussed. Where WUAs are mentioned the processes involved in the strategy include raising awareness, capacity building, enhancing the understanding of catchment management and empowerment of previously disadvantaged people in catchment management. Materials are also to be provided to facilitate empowerment and education (DWAF, 1999). Regional DWAF is currently drafting a communication strategy specific to WUAs in the Eastern Cape area.

8.5.3 Capacity building

Capacity building is the key to sustainable IWRM. It can be defined as any formal or informal engagement or activity that builds participating stakeholders' confidence, vision and skills so that they are better equipped to fulfil the goals of IWRM. Capacity building activities include independent training programmes, information dissemination and public participation (Motteux *et al.,* 2006).

8.5.4 Capacity building within the NWRS

The NWRS discusses the policy and action required to implement the NWA. Chapter 4 of the NWRS (p. 136) briefly describes the strategies for:

- Building capacity and expertise among practitioners in the water sector
- Educating and creating awareness among stakeholders
- Water research

For the NWRS to be implemented there is a need for people in the water sector with the required capacity. South Africa's financial and human resources are at present inadequate to implement some of the NWA provisions on a country wide basis. A water sector capacity building strategy task team has been established to develop a capacity building strategy for the water sector. This has recently been approved as the DWAF Capacity Building and Empowerment strategy and should have been released in 2007. It has been suggested that within the time frame of 15 years, all role players in the water sector should ensure that the necessary capacity exists in institutions, in order to implement the necessary policy and law.

Capacity building emphasised in the NWRS involves:

- The creation and development of skills;
- Knowledge and attitudes required to support the development of:
    - Infrastructure;
    - Institutions;
    - Knowledge and information management;
    - Financial management necessary for WRM. (DWAF, 2004b p. 136)

Capacity building as seen by the NWRS also encompasses public consultation. All the sections of the NWA that require public participation and consultation are highlighted by the strategy. There is also a strong focus on representivity with regards to race, gender and the disabled (DWAF, 2004b). WMIs need to encourage participation by all water users and other stakeholders in all aspects of WRM. The NWRS goes on to emphasise the need for comprehensive stakeholder analysis, aimed at determining the capacity of users and stakeholders to participate. Guidelines for public participation in water related issues have been given by the department so that there is consistency in this process throughout the country (DWAF, 2004b).

8.5.5 Capacity building planning frameworks and implementation

Other policies specifically created by DWAF on capacity building include:

- Stakeholder Analysis Guidelines;
- Capacity Building Planning Framework and Implementation Plan;
- Capacity Building and Empowerment Framework;
- Public Participation Guidelines.

Other processes for capacity building outlined by policy include:

- Stakeholder identification and analysis;
- Community profiling and needs assessments;
- Empowerment of Historically Disadvantaged Individuals (HDIs);
- Training programmes and workshops;
- Diversity Management training;
- Revitalisation programmes;
- Public Participation meetings;

- Financial and technical assistance (DWAF, 2002a, 2002b and 2001b).

DWAF has created a document entitled 'Stakeholder Participation', which includes the appendix 'Stakeholder Analysis' (DWAF, 2005,) used as a guideline for stakeholder analysis. There is, however, no formalised regional strategy for stakeholder analysis. Community profiling forms part of the assessment done prior to engaging with the community. A community needs-assessment is also done in order to assess capacity gaps and training requirements. Certain WUAs are targeted with training programmes and workshops, diversity management, revitalisation programmes, and empowerment of HDIs, with varying degrees of success. DWAF regional has the role of engaging with stakeholders with the support of national DWAF. Depending on the capacity gaps and training needs identified, more intensive capacity building programmes may be implemented, especially for historically marginalised groups. Questionnaires are drafted for national DWAF officials in the stakeholder empowerment unit. These questionnaires are a skills audit for all those on community project steering committees and management committees for institutions. Questions aim to determine the understanding of the steering or management committees on WRM.

8.5.6 Capacity building at catchment level

National policy specifically related to the catchment management level includes the 'Implementation of catchment management in South Africa' (DWAF, 2000). As mentioned, it focuses on building skills and information provision but also emphasises the need for a broader focus on developing organisational, procedural and networking capacity at an individual and organisational level. It focuses on CMAs particularly, but emphasises that by doing this, CMAs can build capacity in the organisations and groups with which they interact, including the WUAs, (DWAF, 2000 S 3.3.1). It is important to note that the study area in this research does not as yet have a CMA for the WMA within which the WUAs fall.

8.5.7 Capacity building planning framework and implementation plan

A Capacity Building Implementation Plan (Volume 1) (DWAF, 2002b) and Planning Framework (Volume 2) for IWRM was drafted by DWAF in 2001, (DWAF, 2001b), with strategies, guidelines and information on the pilot implementation of the framework in three management areas in South Africa. Capacity building initiatives will at least focus on the following priority areas for the development of training courses:

- The concept and implications of integrated water resources development and management;
- The involvement of women and other stakeholders in decision-making,

planning, implementation, monitoring and evaluation of programmes;

- Catchment level and inter-sectoral planning;
- Institutional and legal frameworks governing IWRM;
- Relevant information related to concepts such as the Southern Africa Development Community (SADC) protocol on shared watercourse systems and so on.

Volume 1 of the plan outlines six training courses for WMI, mainly at the catchment level which run for 3-5 days and cover:

- Planning;
- WRM and the water cycle;
- Communication and conflict resolution skills;
- Leadership and facilitation skills;
- Institutional related knowledge;
- Administration (DWAF, 2002b).

These training courses will be given to catchment forum members, DWAF, ward committees, NGOs and if possible the community, but do not specifically focus on the level of the WUAs. This was seen as a 'fast track' capacity building process with the plan to implement a longer 12 month process. Volume 2 provides a more focused description of the capacity building needs of DWAF, the different WMIs and other stakeholder groups (such as catchment forums) within a catchment. As far as possible, the timing of capacity building as it relates to the phases of development within the catchment is addressed as part of the capacity building planning framework. The need for ensuring the empowerment of HDIs and communities is addressed in a separate document entitled 'Training Provision for Community-Based Catchment Champions' (DWAF, 2001b).

Another policy by DWAF (2002a), 'Empowering the poor through agricultural WUAs', focuses on capacity building for resource-poor WUAs and the assistance that DWAF will provide for them. This includes financial assistance from DWAF and DoA phased over time for farmers, for water charges, for feasibility studies and rehabilitation of bulk infrastructure. Capacity is also required for issues that need to be addressed before and after establishment. These issues include:

- Information sharing and raising awareness;
- The facilitation of a common vision;

- The linkages of the WUAs with Integrated Sustainable Rural Development Strategy – which still needs further clarity as to its implementation;
- A focus on community needs;
- The need for indigenous knowledge with particular reference to conservation;
- Technical support for water management and business plans;
- Assistance with constitutions;
- Mentoring and troubleshooting;
- Creation of a communication strategy and diversity management plan;
- Training in the cultural context of WRM, the hydrological cycle and the integration between water supply and sanitation and WRM at a local level;
- Training to balance conflicting needs within the boundaries of a WUA;
- Training for operation of a WUA regarding the following:
    - Functioning of a WUA with awareness raising and skills training;
    - Administrative skills, conflict management, report writing and leadership skills for the chairperson;
    - Operation and maintenance of the infrastructure systems, including the monitoring and collection of water use charges;
    - Rights and duties of the members of the organisation.
- Generic business skills;
- Agricultural production skills;
- Marketing skills.

The department responsible for skills training in agricultural production is the DoA, and business skills are the responsibility of the Department of Trade and Industry (DWAF, 2002a p.11-18).

8.5.8 Capacity building and empowerment framework

An updated document based on the capacity building framework was drafted by DWAF which provided an improved basis for capacity building in WRM. It is entitled 'The Capacity Building and Empowerment Framework'. It also includes the stakeholder analysis tool mentioned above and was released in 2007.

8.6 Public participation

Public participation is seen as one of the vehicles through which capacity building can be done (Motteux, 2006). Public participation refers to the ongoing interaction between role-players that is aimed at improving decision-making during the planning, design, implementation and evaluation of DWAF's development projects and processes. It requires the involvement of all stakeholders, including groups that are often marginalised such as women and youth. Decision-makers have to consider the views of stakeholders during the decision-making process. In some instances the public only needs to be informed (Van Jaarsveld, 2001).

8.6.1 Purpose and outcomes of public participation

Another key aspect of the NWA is the requirement for public participation in the establishment of WMIs. During the public participation process, trade-offs are required between the three elements of sustainability: economic growth, social equity and ecological integrity. The general public and experts view issues differently and public participation harnesses the collective wisdom and resources of everyone in the WMA. This enhances the quality of catchment management decisions and facilitates their implementation (DWAF, 2001).

The legal requirement in Section 2 of the NWA requires institutions to have appropriate community, racial and gender representation in order to achieve the Act's purpose. The WUA proposal must contain a list of proposed members/categories of members, and an indication as to whether there has been consultation in developing the proposal (s 91). The Minister must publish the proposal and consider the comments of interested parties, also ensuring there has been sufficient consultation such as public participation meetings (s 92). Members interested in joining the WUA, as well as other stakeholders, should have the opportunity to contribute in relation to the representivity of the WUA and should ensure non-discriminatory membership of the WUA. All the stakeholders should have the opportunity to verify the draft constitution of the WUA before submission to the Minister. After the establishment of the WUA, public participation can contribute to operational problem solving and mutual support (DWAF, 2001).

8.6.2 Generic framework for the public participation process

The public participation process for WMIs goes through various broad phases. These phases are part of a continuum towards cooperative governance and were used in the research to identify the issues raised during this public process, which was the establishment process for the WUAs in the study area. These phases include:

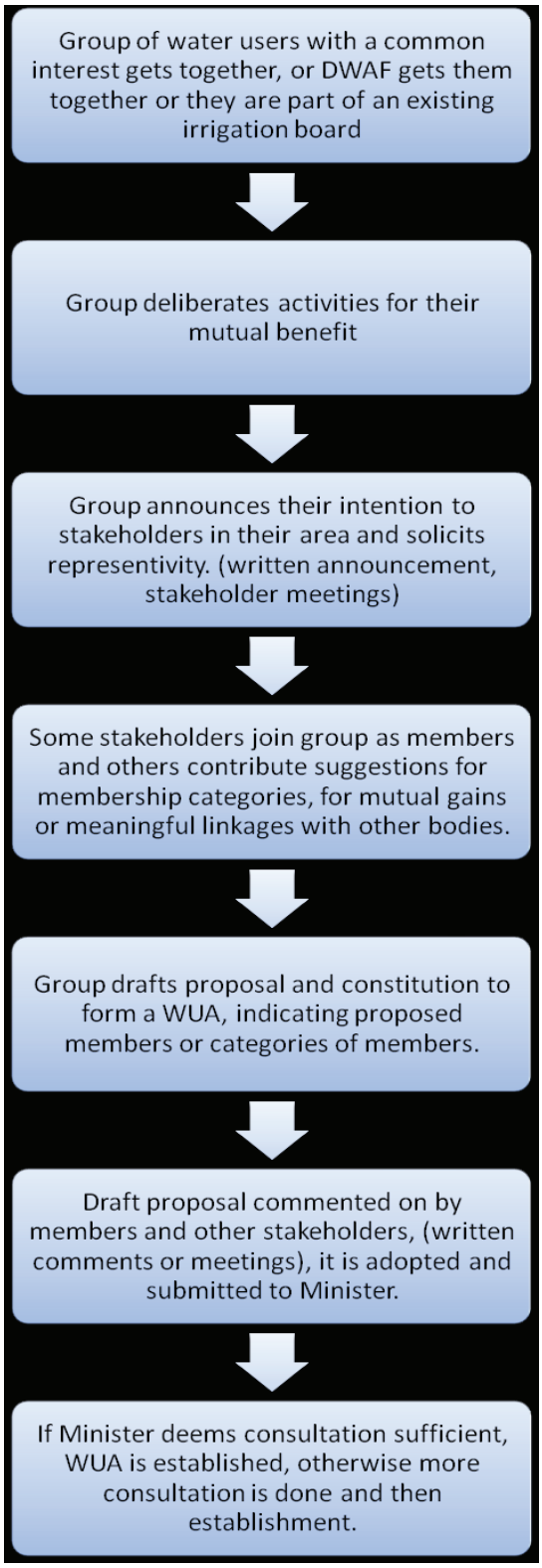

Figure 8: Flowchart, WUA establishment process (adapted from DWAF, 2001a)

9. STUDY AREA OVERVIEW

The following section is largely taken from Basson and Rossouw (2003a). The eDikeni and Masikhanye WUA jurisdiction areas are adjoining areas, within WMA no. 12 – Mzimvubu to Keiskamma (see Figs. 1 and 9).

9.1 History

Basson and Rossouw (2003a) write that nomadic people first roamed the area in the early 1800s. It was the scene of conflict between settlers and Africans over the possession of cattle and grazing land. Industrial development was stimulated by the harbour at East London where a number of large industries were established. The study area was a part of the Ciskei during Apartheid and was selected as the homeland of the Xhosa people. The Ciskei was established as an administrative entity in 1961, given self-government in 1972 and nominal independence in 1981, though it was dependent on South Africa both politically and economically. Due to its history, there is a lack of resources and lack of empowerment in the study area.

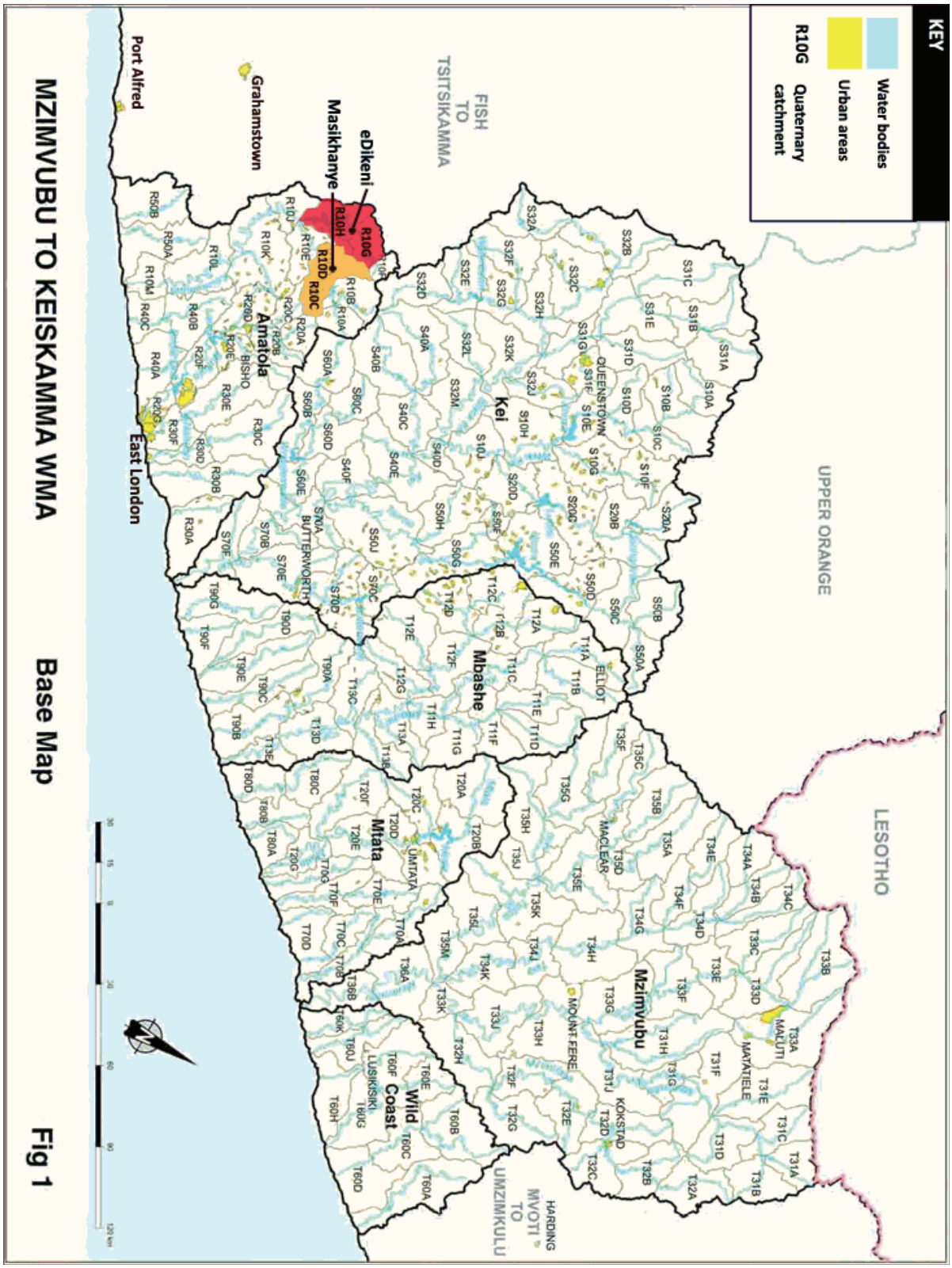

Figure 9: eDikeni and Masikhanye WUA area of jurisdiction within WMA no. 12 (adapted from Basson and Rossouw, 2003)

9.2 Economic activity and employment

About 3.5% of the gross domestic product (GDP) of South Africa derives from the Mzimvubu to Keiskamma WMA, which is relatively low, compared to its large population. Most of the economic production of the WMA (35%) is found in the East London area. The largest economic sectors are government (30.8%), manufacturing (20.4%), trade (14.7%) and finance (11.4%). As can be seen, government plays an important role in the area's economy; this is due to the fact that the provincial legislature is housed in this WMA, but also because of the relatively small contribution of the primary production sectors.

9.3 Population

In 1994, the work force in the WMA amounted to approximately 1 million; of these, 42% were employed in the formal economy and 48% were unemployed. Of those formally employed, 40% were engaged in the community-sector services, 17% in manufacturing and 16% in agriculture. Due to its climate, a large variety of products can be grown in the WMA, which gives it an advantage over the agricultural sector in the rest of the country. Several irrigation schemes have been developed, particularly in the western parts of the WMA, but many of these have achieved only limited success and are in a poor state of operation. The two study areas of focus, eDikeni and Masikhanye WUAs, have been set up for the rehabilitation of two of these irrigation schemes.

9.4 Demography

WMA no. 12 is the third most populous in the country. The distribution of wealth is highly uneven, and as a result there are large variations in standard of living throughout this area. Of the population 70% can be classified as rural, but in the Amatola sub-area, (which includes East London), 66% of the population is regarded as living in an urban environment. The large proportion of rural population can be attributed to the previous government's decentralisation policy. In terms of projections, the population of the Amatola sub-area is expected to increase due to economic activity and employment opportunities, but the population of the WMA as a whole is expected to decrease, due to the lack of economic opportunities in general, the impacts of HIV/AIDS and migration to urban areas.

9.5 Water resources and use

Dams that can be found within the Amatola sub-area are the Sandile, Rooikrantz, Laing, Bridle drift, Nahone and Binfield Park Dams. The Sandile Dam caters for the Masikhanye area and the Binfield Park Dam supplies the eDikeni area. About 50% of water requirements for the WMA are for irrigation, nearly 30% are for urban and industrial use and the remainder for rural water supplies, such as domestic and stock watering, and afforestation. Ntsonto (2005) argues that there is a potentially great opportunity for smallholder agriculture in the

study area.

9.6 eDikeni WUA area of jurisdiction

The rationale for the creation of the eDikeni WUA (Fig.10) is to make efficient use of the Binfield Dam to supply small-scale farmers in the sub-catchment with water for irrigation purposes. The association was requested by resource-poor farmers who represent various farming projects in the area and wish to utilise revitalised irrigation schemes. DWAF then initiated the establishment of the WUA. Their area of jurisdiction includes approximately 30 to 40 villages within the Tyume River Valley. The WUA has created a constitution which has been approved and gazetted (Government Notice No. 991). They are currently at the stakeholder engagement stage before the election of a governing board, and are also in the process of writing up business plans for their irrigation scheme. They meet regularly in the town of Alice.

9.7 Masikhanye WUA area of jurisdiction

Infrastructure was built in the Masikhanye jurisdiction area (Fig. 11) during Apartheid to provide food and employment to the black population and it is one of these irrigation schemes (Zanyokwe) that is being rehabilitated under the Masikhanye WUA. The aim of the government is to reduce costs of operation and maintenance of infrastructure including irrigation schemes at Sandile dam and to devolve power to local people for management of the farming activities and schemes. This is aided by the establishment of a WUA in the area (Nsonto, 2005). The need for improved water access to and management of the irrigation scheme was also expressed by a group of resource-poor farmers living in the area. The process of establishing a WUA was then initiated by DWAF. There was no existing committee managing the scheme, so the WUA is not a transformed irrigation board. DWAF then initiated the election of the interim committee. Their area of jurisdiction consists of six villages in the Keiskamma River valley and the interim committee consists of two representatives from each of these villages. They have drafted their constitution and have sent their proposal for approval to the Minister. An interim committee continues to interact with DWAF until they are approved and can elect their governing board. They meet regularly in the area of Zanyokwe/Burnshill.

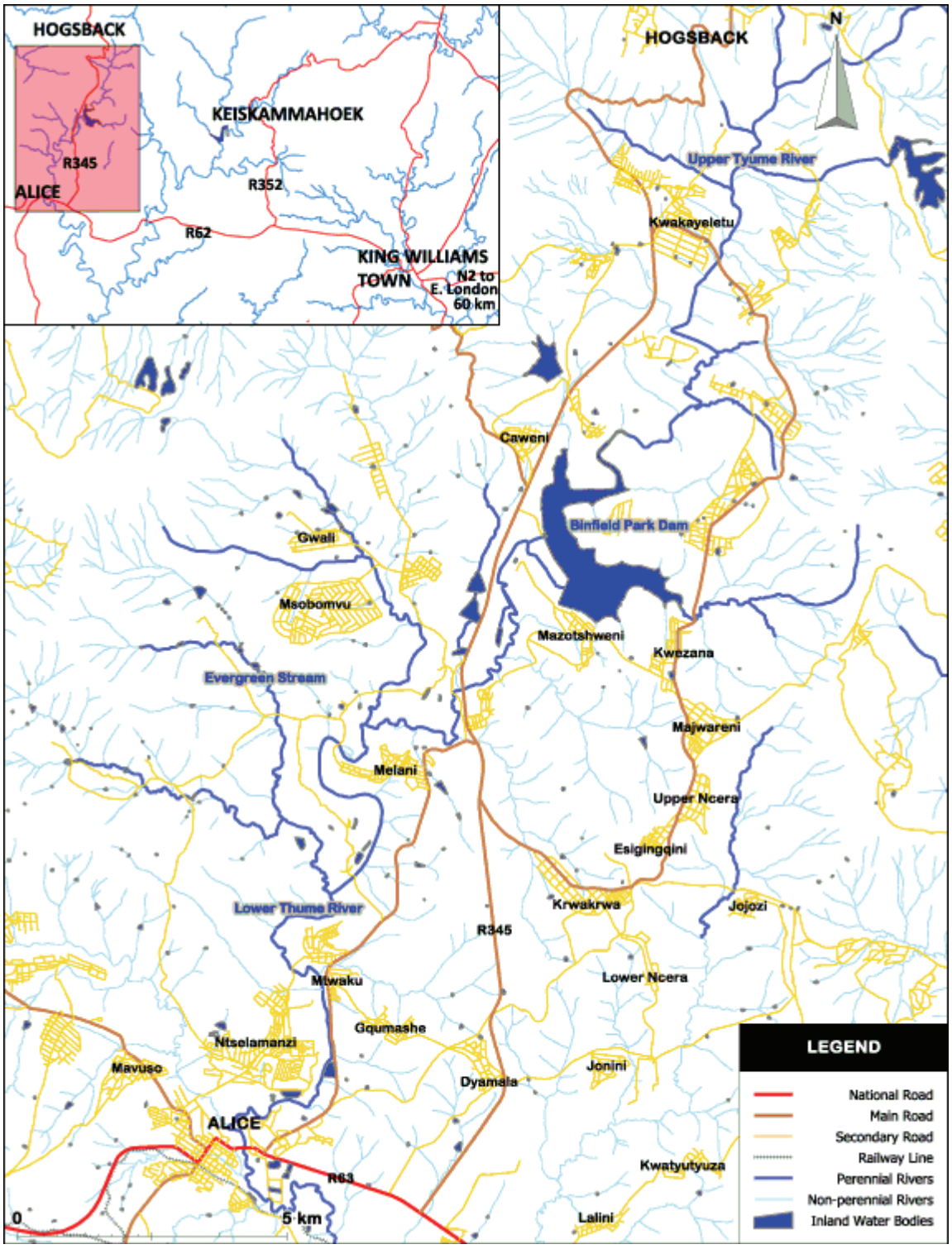

Figure 10: Map of eDikeni WUA area of jurisdiction (created in Manifold with data from Chief Directorate of Surveys and Mapping)

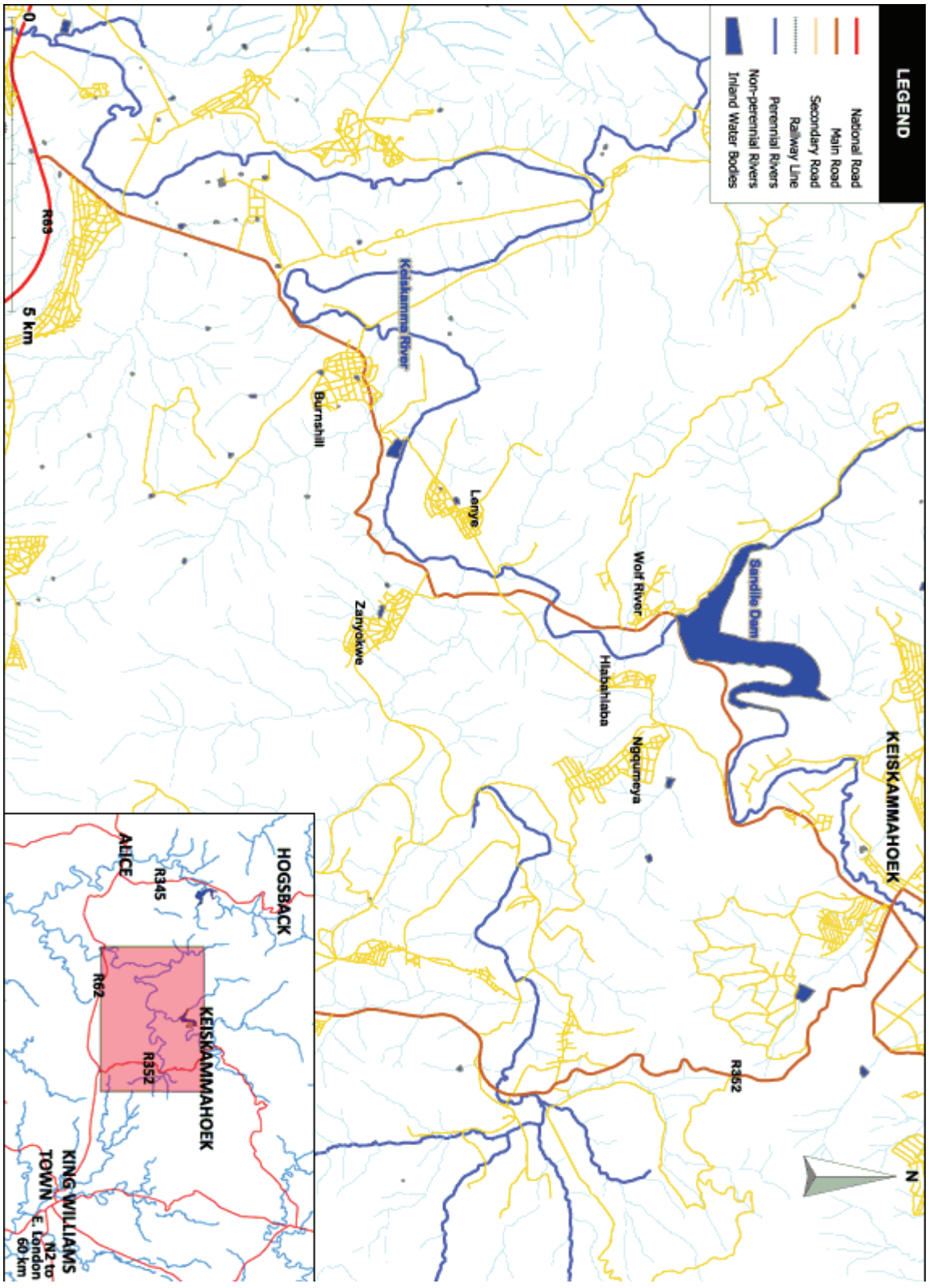

Figure 11: Map of Masikhanye area of jurisdiction (created in Manifold with data from Chief Directorate of Surveys and mapping)

10. FINDINGS

The research findings can be divided into three main sections that were investigated during the research process. These sections include:

- Traditional leaders and their role in WRM;
- Cultural practices and informal rules that are relevant to and should inform WRM;
- Institutional dimensions and problems associated with the establishment of WUAs, which include the need for improved communication flow between stakeholders in WRM, and issues surrounding capacity building and public participation for WUAs. This section also investigates the problems that arise from the complexity of the new approach to WRM and the various institutions involved, within the context of the Eastern Cape.

10.1 The Role of traditional leaders

10.1.1 Background on traditional leaders in the Eastern Cape

One of the main aims of the project was to investigate the role of traditional leaders with regard to the new dispensation in integrated WRM in South Africa, based on information gathered from the two study WUAs in WMA 12. As we saw in section 4.2.2 above, traditional leaders have a provincial HOTL, established under section 212(2)(a) of the Constitution. The HOTL comprises elected representatives from the different areas in the province. The Eastern Cape HOTL has representatives in the national HOTL. The purpose of the HOTL is 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" (RSA, 1996). The Minister of the Executive Council (MEC) for Local Government, Housing and Traditional Affairs (DLG) in Eastern Cape reported that the HOTL has been participating in various community-related issues. However, the MEC did not give an indication of whether the traditional leaders were involved in water management issues in the Eastern Cape (Moerane-Mamase, 2005; Kwelita, 2006).

The Premier of the Eastern Cape, where necessary, can establish a traditional council in an area whose functions include administering the affairs of the community in accordance with customs and tradition, assisting traditional leaders and supporting municipalities in service delivery (RSA, 2003). There is a traditional council in the study area, but it is not fully functional and the DLG in the Eastern Cape is in the process of constructing offices of traditional councils in all the districts. Figure 12 outlines a general hierarchical structure of traditional leadership in the Eastern Cape.

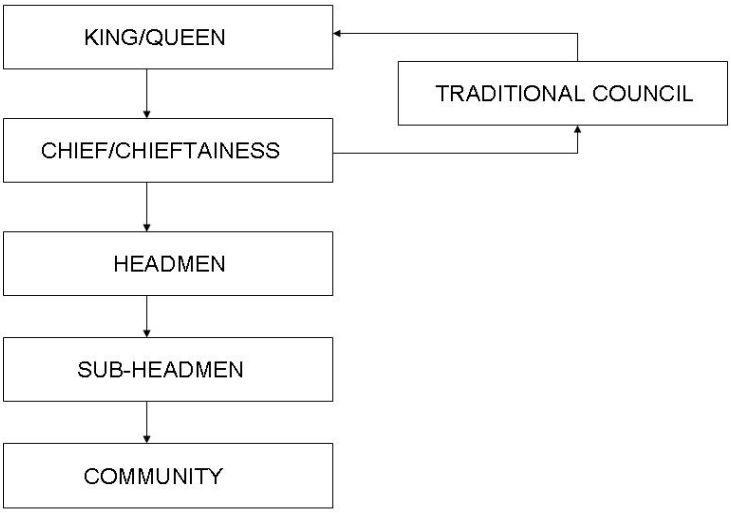

Figure 12: An outline of the governance structure in a traditional community in the Eastern Cape

The kings/queens and chiefs/chieftainesses are the senior traditional leaders and their positions can only be occupied through inheritance. The chief/chieftainess in most cases is head of the traditional council and communicates any relevant issues to the king/queen either through the traditional council or in person. The headmen and sub-headmen are elected and are mainly responsible for monitoring activities in the community and giving feedback to the chief/chieftainess. The headmen and sub-headmen are elected based on the principles of democracy, which are used and implemented by State governance institutions. During the pre-colonial era, traditional authorities relied heavily on IKS and customary law to perform their duties. In most rural settings during the pre-colonial era in South Africa, including the Eastern Cape, traditional authorities wielded authority over natural resources, including decisions regarding water infrastructure development, water allocation and water pollution (Van Koppen *et al.*, 2002).

10.1.2 The role of traditional leaders in mediating conflicts

Members of the HOTL in the Eastern Cape confirmed that traditional leaders still play an influential role in mediating conflicts through customary law. In most cases the main source of conflicts are related to access to land and water resources. A major issue which was raised in the eDikeni WUA workshop was that in order to develop business plans for water projects,

there was need for consensus with regards to land ownership. There was a high probability that conflicts would arise as individuals would contest ownership of land, especially communally owned land, where the land tenure systems were not distinct. The participants at the eDikeni workshop reported that in some rural communities, traditional leaders commanded respect which might not be accorded to politicians. Therefore, the traditional leaders could resolve disputes related to land. A chief from HOTL reported that traditional leaders usually play a role in facilitating conflict resolution by remaining neutral.

10.1.3 Diminished influence of traditional leaders

The traditional governance institution and social behaviour of communities have undergone change due to the process of modernisation and the infiltration of westernised systems of governance. The elderly members of the community who participated in the eDikeni transect exercise criticised the younger generation for their lack of respect for elders and traditional leaders and lack of morals. The Apartheid system also played a role in eroding the traditional governance system. As we have seen in section 4.2.1, during Apartheid in South Africa, traditional leaders often collaborated with the Apartheid State (RSA, 2003). The chiefs and headmen were used as conduit and source of acquiring cheaper labour on farms and mines (RSA, 2003). Thus, they lost respect in the villages as they had lost their inherent role to provide leadership to their people. As a result, the influence of traditional leaders diminished in their communities. Traditional leaders who rejected collaboration with the Apartheid State were replaced with less critical leaders, who were perceived to be illegitimate in their communities (Malzbender *et al.,* 2005). As a result of the appointment of illegitimate leaders, many rural areas are experiencing succession disputes, which undermine the reputation of traditional leadership as a whole and could result in a reduced support for traditional leaders, weakening their position in the governance framework in the process.

The advent of westernised governance systems is one of the main factors that has affected traditional systems at a local level and created a requirement for westernised education systems. Discussions with elders and community members in the study area revealed that the effective functioning of the institution of traditional leaders could be hindered because most leaders are uneducated. However, this varies from area to area; for example, within Zanyokwe WUA the headman for Burnshill is a retired principal. Even though traditional governance systems rely heavily on IKS and customary law, acquiring formal education will assist the traditional leaders in performing their duties and understanding government policies such as integrated WRM. It is worth noting that the authority and roles of the traditional leaders within the Eastern Cape and the whole of South Africa is contextual, because there are some areas where traditional leaders are not fully recognised; traditional leaders in the Transkei and Kwazulu-Natal province, for instance, have a stronger influence than in Gauteng province (Nthai, 2005). Interviews with villagers and other stakeholders such as DoA extension officers, who interact with the communities, revealed that there were parts

within the study area where headmen were not respected, because they were perceived not to fully represent the communities' needs.

There was little evidence in the study area to suggest that government departments were collaborating with traditional leaders. The government departments usually invited traditional leaders to public participation meetings or to events held in the villages as a sign of respect. However, some departments were carrying out activities in the area and rarely consulted traditional leaders. The possible reason for excluding them was because they were perceived not to be knowledgeable about farming issues and thus their input was unnecessary. However, during the pre-colonial era, traditional leaders used to coordinate farming activities. The main difficulty in merging the traditional and State systems of governance is that they have different approaches, values, structures and power relations.

10.1.4 Diminished role of traditional leaders in land allocation

The national government and provincial government through the MEC may provide a role for traditional councils or traditional leaders. These roles include arts and culture, agriculture, health, safety and security, economic development, tourism, disaster management and information dissemination (RSA, 2003). Ever since the pre-colonial era in South Africa, the chief/chieftainess has been responsible for mediating issues pertaining to natural resource use and land allocation. The chief created and enforced rules to solve problems of water pollution or convened meetings to resolve conflicts between different water users (Van Koppen *et al.,* 2002). However, at present their role in land allocation has been diminished in many villages surrounding the study area as there are many stakeholders involved in land allocation, such as the DoA, the DPW and local municipalities. The DoA is assisting farmers to monitor and manage land in the Zanyokwe irrigation scheme under the Masikhanye WUA. Since land tenure in rural communities is rooted in value systems, religious, social, political and cultural antecedents which are implemented by traditional leaders, it is important to have cohesion between traditional governance and State structures concerned with land distribution (Bernard, 2003).

A traditional leader at the HOTL reported that some of the traditional leaders feel their powers in terms of land distribution will be further diminished by the Communal Lands Rights Act, which requires that in the Land Administration Structure Committee, members of a traditional council represent 60%, whilst other stakeholders such as municipalities hold 40%. Despite acknowledging that this system is a formal way of distributing land, other traditional leaders feel that they will not be able to enforce customary prac00tices of land tenure in a satisfactory manner. Other leaders from HOTL noted that the new municipality representatives would assist in making informed decisions. In some villages around the Masikhanye WUA, it is reported that some ward councillors are involved in land allocation. This is evidence of overlapping responsibilities between ward councillors and traditional

leaders. The roles and responsibilities of traditional leaders and that of newly elected political leaders are not clearly defined, which could result in conflict. The possibility exists that political figures have overriding powers over traditional leaders. At a WUA meeting in the study area, it was observed that the ward councillor answered most concerns regarding development. Some community members interviewed thought that since the ward councillors belonged to political parties, they held more influence. However, in other areas, for example in Burnshill village, the chieftainess and the ward councillors worked together when distributing land.

10.1.5 Diminished role of traditional leaders in IWRM

As we have seen in sections 4.2 and 4.3 above, the inception of Apartheid saw a reduction in the role of traditional leaders in water management and although they are recognised by the Constitution, their authority and powers in terms of water management are not augmented by legislation.

The HOTL in the Eastern Cape expressed the view that traditional leaders were not fully aware of the new water management policies in South Africa which require the establishment of WMIs such as CMAs and WUAs. At present there has only been one CMA established in South Africa, the Inkomati CMA (established 2004), which is fully functional. Therefore, the reason why most traditional leaders in the Eastern Cape are not aware of this process could be that the process of establishing these CMAs and WUAs is still in its infancy. Nonetheless, during the pre-colonial period the traditional leaders were responsible for managing water resources in rural communities; thus it is important that they are made aware of the new government strategies. Since the government has constraints in terms of capacity and resources, it is also imperative that traditional leaders take some initiative to understand the new water dispensation as it will affect their communities.

Water Service Authorities (WSAUs), Water Service Providers (WSPs) and other State agencies such as DWAF and the DoA, have much authority in terms of water provision and management in the province. Since July 2003, DWAF has allocated responsibility for water service provision to municipalities such as the Amathole District Municipality. In the study area, Amatola Water Board – a private parastatal established in 1997 by the Minister of Water Affairs, is mandated by DWAF for providing potable water to the municipalities. There is no legal obligation which requires that traditional leaders are involved in aspects of water management. The Traditional Leadership and Governance Framework Act of 2003 only "promotes" partnerships between municipalities and traditional leaders. These partnerships are based on principles of mutual respect and not legally binding (RSA, 2003). Most provincial government departments in the Eastern Cape, including DWAF, DoA and officials in WSAU and WSP, concurred that traditional leaders do not have an influential role to play in water management, even though they are important stakeholders. A senior officer

at the DWAF regional office noted that regional offices were waiting for the national government to initiate strategies to incorporate traditional leaders in WMIs. Some WSAU officials also noted that the government should provide them with guidelines on how to integrate traditional governance systems in water provision and management. It is evident that the authority of traditional leaders in terms of water management has been eroded since the Apartheid era.

10.1.6 The role of traditional leaders in WUAs

Traditional leaders participated in the public participation processes to inform the community about the requirement to set up a WUA for both eDikeni and Masikhanye, but they did not play any major part in the WUA establishment process thereafter. Their contribution to the establishment process was not consistent. An interview with the Chieftainess from Masikhanye WUA revealed that her primary reason for attending the meeting was to ensure that water was provided to her villages. However, discussions with members of the Masikhanye WUA indicated that, although the traditional leaders had a representative in the WUA, the representatives did not have voting powers in the WUA committees and, therefore, had no influence in the decision making process. Representatives from DWAF and DoA also did not have voting powers, but they were both more influential in the WUA than the traditional leaders. In the study area, DoA and DWAF were involved in aspects of decision making related to the establishment process of the WUA and the maintenance of irrigation pipes. The committee members who represent the villagers were the only ones allowed to vote in the WUA. Thus, if the WUA committee is biased towards State governance systems, then the integration of customary laws, which are directly and indirectly relevant to water management and valuable to the WUA, will not occur.

10.1.7 The role of traditional leaders as a communication medium

The communication between the traditional leaders and the committees in the Masikhanye and eDikeni WUAs needs improvement. From discussions held with resource users and other stakeholders in the case study sites, the communication between the traditional leaders and the communities generally appears to be good. The Burnshill headman in the Masikhanye WUA reported that they are still conducting *imbizos (*community meetings) in association with the South African National Civic Organisation (SANCO). The *imbizos* are an important medium of information dissemination about general issues affecting the community.

Traditional leaders are aware of the community needs in terms of water resources and have the ability to express the will of the people, but their roles and responsibilities need to be reinforced in the WUA committees so that their role as community advocates is strengthened. Therefore, traditional leaders will need to be informed early and involved in the design of water management strategies to avoid contradictions between the structure and values of the State and the traditional governance systems. The traditional leaders' involvement will ensure

that water management strategies meet community needs. Traditional leaders should also be informed about new policies and laws governing water use and management and provided with material resources to enable them to play a leading role in stakeholder engagement, by acting as spokespersons for the community, articulating local needs and values and expressing concerns regarding the WUAs.

Some WUA members in Masikhanye were unsure what role the traditional leaders should play in the WUA. Nonetheless, they reported that they consulted the traditional leaders when they were initiating any activity which they thought needed the traditional leader's consent. As a cultural functionary whose role is diffuse, traditional leaders could play an even more crucial role in the future of the WUA than at present, by representing the communities in the WUA. Since land and water issues are closely interconnected, the traditional leadership role in land issues also affects their role in water issues. Thus, their participation in aspects of decision making in the WUA is important.

A possible reason why traditional leaders have not been fully incorporated into the new water management regime, especially in the establishment process of the WUA, is that a lot of bureaucracy is involved when approaching traditional leaders. There are many structures within the institution of traditional governance which hinder communication with traditional leaders by outside groups. This results in decreased awareness of water management issues and strategies by the leaders, as they interact with very few individuals who have knowledge of IWRM. This could result in traditional leaders being unable to communicate with researchers and individuals who work in their communities. One traditional leader interviewed complained that some researchers, who came to collect samples of water quality in her area, never reported back to her on the results of the tests. It is possible that she did not get feedback because of the bureaucratic nature of communication.

10.2 Cultural practices and norms relevant to WRM

Among the *Xhosa* people, water was traditionally regarded as a gift of nature that possesses sacred as well as secular values (Fox, 2005). However, at present in terms of the NWA, water is generally viewed as held by the State in public trust on behalf of the people of South Africa. There exists a complex set of beliefs and values n the *Xhosa* culture with regard to water, river systems and riparian zones. They believe that in the spirit world there is a God who is the source of such life resources. However, at present such knowledge is privileged among the elderly members of the community (Bernard, 2003). Discussions with elderly members of the community revealed that, due to the westernised system of education, the youth are not acquiring the indigenous knowledge which was usually passed through oral tradition by the elders. The youth are becoming less attached to traditional systems. Evidence of disregard of traditional practices is shown by people in certain communities who were washing their cars along rivers where members of the community practice initiation

ceremonies and baptism.

10.2.1 Cultural practices in WRM

Statutory law and State governance systems play a more influential role in water management in the study area than does customary law and cultural practices. However, there were cultural practices which were identified through discussions with local community members during the transect exercises and during the participatory mapping exercise. Community members were asked questions on cultural practices related to water resources and asked to illustrate on a map of the study area, using red circles, where these activities were taking place. These cultural practices were verified in a workshop with general water users and members of the WUA (Figs. 13 and 14).

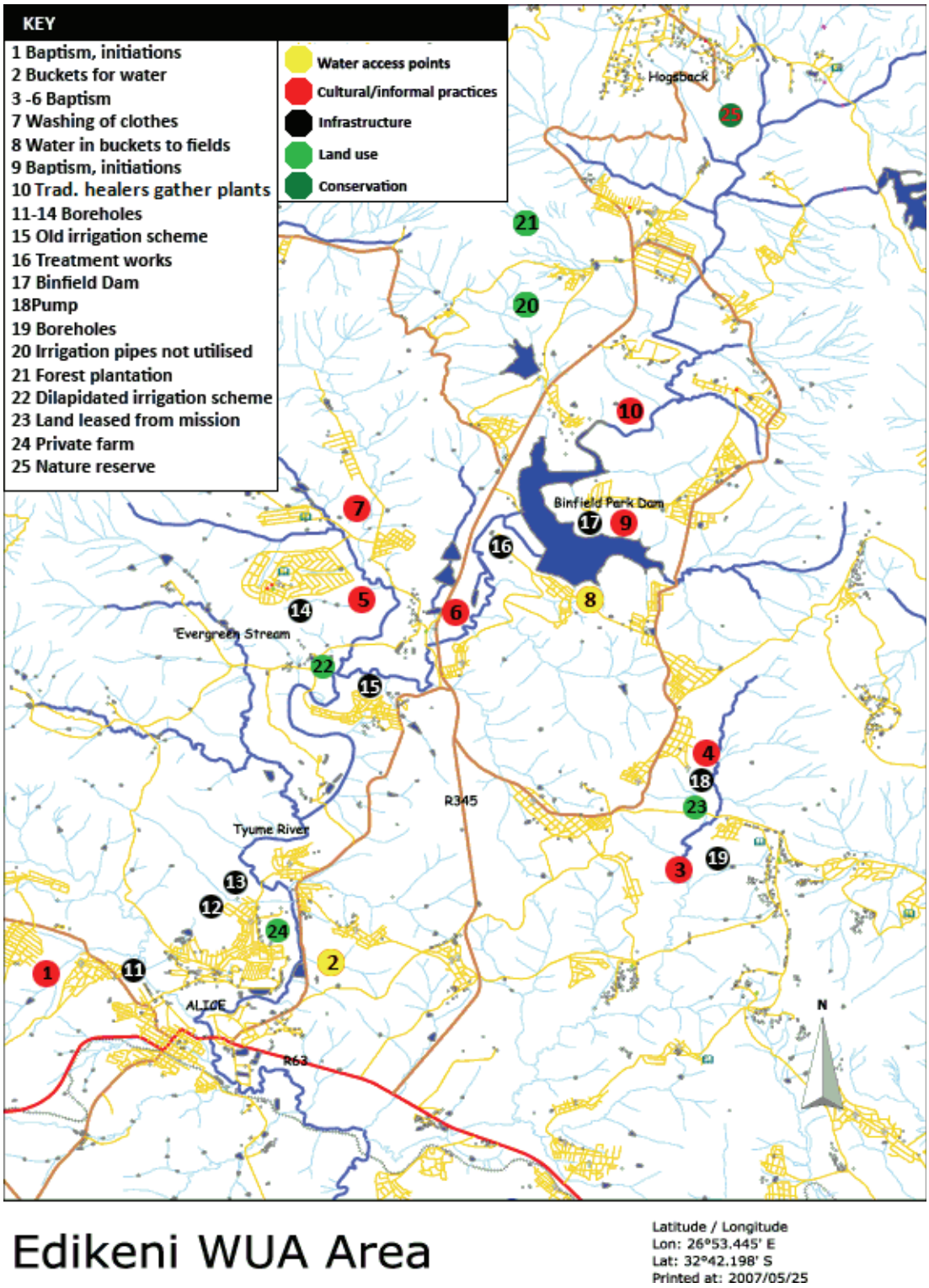

Figure 13: Preliminary findings outlining the cultural practices, land use and infrastructure in the eDikeni WUA

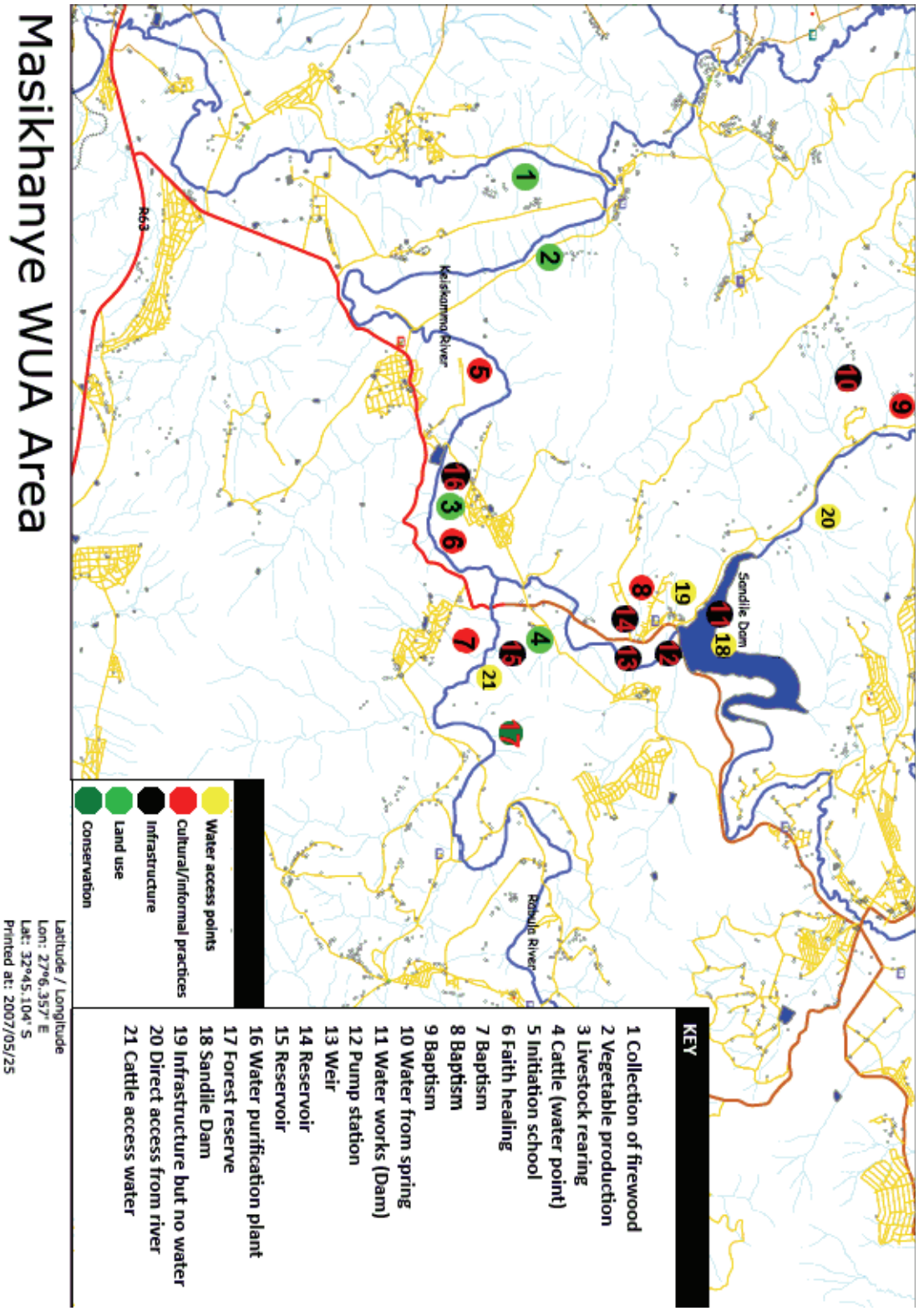

Figure 14: Preliminary findings outlining the cultural practices, land use and infrastructure in the Masikhanye WUA

As outlined in Figures 13 and 14, cultural practices such as baptism and initiation ceremonies are still practised in the villages covered by the two WUAs. It was reported by participants at the Masikhanye WUA workshop that there was an initiation school for girls at Burnshill village (no. 5 in red circle in Figure 14). Baptisms and initiations were usually practised in the water along rivers such as the Keiskamma River. The participants reported that the Zionist priests baptise the devotees whilst an elderly woman in the village is responsible for the initiation ceremonies. However, there are no specific sites which were designated for baptism and initiation. A Zionist priest reported that devotees only chose the deepest part along a river for baptism. There was no evidence of restricted access to these sites.

Water plays a crucial role in the expulsion of evil and illness and removes *isimnyama (*the dark cloud that envelopes the person and attracts bad luck and witches) (Zenani and Mistri, 2005). This shows that water plays an important role in the belief systems of certain individuals in the community. Since WUAs will be accessing and using raw water along rivers which are also used by Zionists for baptism, their concerns should be considered. The HOTL indicated that most Zionist priests in the Eastern Cape now use the oceans for baptisms, probably because the water along rivers is polluted. Water represents nourishment, not only for the body, but also for the spirit (Zenani and Mistri, 2005). Thus, the role of these community values and religious practices in conserving and protecting water resources needs to be better understood and incorporated into the current management system.

10.2.2 Erosion of cultural practices related to water

Most of the members of the Masikhanye WUA belong to the Zanyokwe irrigation scheme, which is being revitalised by the State. Traditional governance systems, which include traditional practices and norms, have not been utilised in the schemes to determine the access, use and management of water. At present there are no regulations enforced for the quantity of water which can be taken from a river by an individual farmer in the study area. This could result in the overuse of the water resources, considering the predicted water shortages that the Eastern Cape will face in the future due to climate change.

Due to modernisation, most rural people are losing their attachment to cultural practices and norms, which is related to maintaining status in a community. An official from the DoA reported that there is status related to acquiring modern machinery such as tractors. Modern machinery is preferred to traditional methods of cultivation such as ox-driven ploughs, due to their efficiency and potential for improved productivity. Despite evidence of an erosion of cultural practices, they are still present in the way people interact with one another and perform religious rituals.

There are several religions that have adapted to the new challenges of modernisation. However, the African traditional religious beliefs have not adapted well because they subscribe to the oneness of life. In the African tradition, agriculture, farming, hunting, nature

and graves are all integral to their tradition, and anything that disturbs these natural attributes cuts through their religious and cultural values (Zenani and Mistri, 2005). It is thus important that when WUAs allocate water to users which results in abstracting water and manipulating river systems, such activities should not affect sections of a river which are used for cultural and religious practices. Activities such as diverting river systems could destroy these ecosystems which are part of a religious and cultural network.

Many traditional communities have lost their knowledge and traditions, or have repudiated them in favour of modern ways of living (Bernard, 2003). These transformations, as well as inevitable population growth, have led to behavioural changes, which have resulted in the abandonment of traditional ecological knowledge no longer seen as relevant (Bernard, 2003). Modern forces have contributed to the "disenchantment of the landscape" whereby the respect for the spirits has rapidly disappeared (Bernard, 2003). Despite these threats, participants in the Masikhanye workshop reported that traditional healers continue to play a significant and influential role in the community. The traditional healers usually conduct ceremonies at certain sites along the Keiskamma River, where they believe that the water spirits are present. It was reported by informants that there are occasions when the traditional healers and their followers will spend days at these sites communicating with the water spirits. The participants noted that there is a belief that if anyone disappears at certain sites were the water spirits are believed to exist, the villagers and family members are not allowed to grieve. They believe that the water spirits are imparting knowledge and skills to the individuals in healing. Near these water sites, there are certain plants which can be identified and used for healing purposes by traditional healers. Hence, it is important to consider these indigenous beliefs and practices in river management, since they contribute to the spiritual life of the community, and should be incorporated in conservation and protection of the water resources.

10.2.3 Relevant customary law and informal rules related to water

It is important that WMIs understand how water was accessed, used and managed through customary law during the pre-colonial era. A chief from the HOTL explained that the river is divided into sections which have different water uses. For example, the upstream section of a river may be used for drinking purposes, whilst the middle section of a river could be used for laundry and bathing, and the downstream section for cattle. Therefore, when farmers in the WUA take water for irrigation they should consider such traditional cultural practices, so as to avoid polluting water sources which are used for drinking. Even though most villages access drinking water from communal taps, there are some villages which still take it from the river using buckets and springs. Although health workers advised the villagers that they could get water borne diseases from drinking river water this, in fact, seldom happened.

Regarding taps, the villages have informal rules, which are meant to curb the problem of

pollution of ground water and overuse of water, e.g. it is forbidden to wash clothes and dishes at the tap. People are required to fetch water using a container, and do the washing at a distant place from the water source. In many villages, stands are erected to avoid spillages. Containers with narrow openings are also encouraged, as opposed to containers with wide openings, because water would spill out. It was argued that doing laundry at the tap will leave the surrounding area soaked with water which will be polluted with detergents. More so, when the area is soaked with water, cattle will be attracted to drink the water which will result in the area being trampled and contaminated. In certain villages, the Amathole District Municipality is coordinating village water committees, which enforces some of these informal rules to ensure effective conservation of potable water. This is evidence that cultural values and norms could contribute to the effective conservation and management of water resources. However, it is known that there are some practices, such as dipping tanks for cattle, which cause pollution, but not much is being done to rectify this.

Cultural norms and values within a certain village did not necessarily coincide with those of an adjacent village. Most villages do not seem to coordinate when devising their rules in terms of access to and use of water along a river. One traditional leader from the HOTL acknowledged that their source of drinking water could be polluted by another village situated upstream. Most upstream and downstream villages do not communicate with each other about water management issues. A Princess from Eastern Pondoland reported that when a member of the royal family dies, the family members will go at night and wash his/her clothes in a river far away from the village to turn away bad spirits. The lack of coherence in informal rules and cultural values could be a potential source of conflict.

10.2.4 Protecting springs

Despite the fact that modern technology (e.g. testing water samples in laboratories) is frequently used to monitor and manage water sources, in certain villages traditional practices are still used to do this. It was reported by a traditional leader from the HOTL that in his village he will delegate households with tasks to monitor and preserve a spring. The families usually practise a process called "*u kapa"* (clearing the pond) which involves the removal of mud, resulting in the enlargement of the size of the resource, which in turn increases its water holding capacity. Part of the responsibility involves protecting the spring from cattle, usually by fencing using tree branches. The responsibility to manage the springs will rotate among families in a village. Such customary laws will contribute to ensuring improved water quality and effective management of the water resources if they are integrated by WUAs.

In summary, cultural practices and customary laws which are linked to water resources are still being practised in the study area, but there is evidence that they are being eroded. The preliminary study revealed that baptism and initiation ceremonies are the main cultural practices. Nonetheless, there may be other cultural practices which could be investigated

further, about which the elderly members of the communities have knowledge. These practices guide the spiritual lives of certain members of the community and are worth considering in IWRM.

10.3 Institutional dimensions of WRM

One of DWAF's main aims in implementing the new approach is to ensure that local communities understand the importance of WRM and the role of WMIs such as the WUAs in achieving the goal of devolution of certain functions of decision making. However, due to the complex nature of the strategy in the context of rural life, achieving these goals is being hindered. Interviews held with DWAF revealed strong support from government officials for the new integrated approach to water management, since involvement of resource users in management activities and decisions affecting their lives is considered not only a democratic right, but also a means of creating a sense of stewardship for resources used. In terms of this new water management approach, the involvement of resource users is promoted through the processes of capacity building and public participation outlined in the NWA, NWRS and other related policies. However, the practical application of the new water policies and strategies is proving difficult, especially in resource-poor areas such as those investigated in this study.

One of the main aims in this project was to investigate and assess the new institutional arrangements, including the structures, strategies and rules that have been put in place to manage water resources. In particular, the study focused on the institutional arrangements relevant to the establishment of WUAs. The rationale behind setting up these institutional structures is to create a more equitable and participatory system of water use and management. Some key findings that suggest this process is being hindered are:

- The complex structure of WMIs and their interactions amongst stakeholders is causing uncertainty over roles and functions, especially within the WUAs;
- The lack of capacity of WUAs to perform crucial functions;
- Co-operative governance is weak;
- WUAs can either be single sector or multi-sector but this differentiation is creating confusion;
- The Eastern Cape has a unique set of circumstances which need to be acknowledged;
- The devolution of certain functions and decision making powers in the attempt to achieve democracy in itself seems to create problems.

10.3.1 Structure of WMIs

The structure of institutions involved in WRM is very complex and this seems to be causing confusion amongst various stakeholders, especially around how water users should interact with these water institutions regarding specific issues. This complex structure of institutions can be seen in Figure 7. The Minister of Water Affairs and Forestry has the overall responsibility for effective water management in South Africa. The Minister is responsible for ensuring that water resources are protected, used, developed, conserved, managed and controlled in a sustainable and equitable way for the benefit of all citizens. DWAF is responsible for carrying out all aspects of the NWA delegated to it by the Minister. DWAF's eventual focus is on a national water management policy and ensuring all WMIs are performing their roles and responsibilities effectively. However, while these institutions are still being set up, DWAF must carry out the roles and responsibilities of each institution until such time that they are assigned or delegated to the respective institutions.

A key factor in understanding the institutional arrangements for WRM is to differentiate between institutions related to potable water and raw, untreated water. DWAF has already delegated the functions of water service provision to the WSAUs through district and local municipalities. The WSAUs are mandated by the WSA to supply potable water to their areas of jurisdiction. The local municipality in the study area lacks capacity and therefore only acts as a medium through which domestic water supply issues are communicated via their respective ward councillors. Village water committees, although not yet established in the study area, have been set up in some areas to report potable water issues directly to local or district municipality.

The CMA in the Eastern Cape has not yet been established and so DWAF assumes its roles and responsibilities. WUAs are only involved with raw WRM and operate within small specified catchment areas within the larger area of jurisdiction of the CMA. Agriculture in these rural areas of the Eastern Cape is the dominating sector and is the largest consumer of raw water. The DoA is therefore also actively involved in WUAs. The important aspect to note is that at the localised level raw water and potable water activities are managed by two different channels of institutions. The management of raw water resources is channelled through the WUAs up to the CMAs – or to the regional DWAF in the study area, while potable water management is channelled up through village water committees or the ward councillor to local municipality and then district municipality. These separate channels are causing confusion amongst water users regarding the roles and responsibilities of the WUAs. This confusion is described in more detail below. The lowest level at which these separate water channels and their institutions come together is at the CMA and WSAU level where co-ordination between the CMS and the WSAUs' water service development plans is promoted (DWAF, undated).

10.3.2 Roles and functions of the WUA

The purpose of the WUA is to carry out water related activities more effectively by enabling individuals within a community to pool their resources so that their individual needs and priorities can be addressed. This creates opportunities for enhancing access to water and thereby contribute to the eradication of poverty, food security, and economic development. The WUAs also provide a mechanism through which catchment areas can be managed, protected, and conserved (DWAF, undated). The roles and functions of WUAs to achieve these purposes are to prevent waste and unlawful use, protect, regulate the flow and monitor all water resources in their area of jurisdiction (DWAF, undated p. 56). They are required to acquire, control, operate, and maintain waterworks necessary for draining land and supplying water to the land for irrigation purposes. Their roles also include supervising and regulating the distribution and use of raw water from water resources. In the Masikhanye and eDikeni WUAs, roles and functions also include the allocation of raw water by issuing water licenses.

10.3.3 Complexity of institutional arrangements

The interaction of water users with various water institutions is complex (Figure 15), which leads to confusion as to where the WUA fits into the process. Figure 15 highlights the number of different institutions involved in water management and the complex communication channels involved in reporting a complaint. Confusion is enhanced by public participation meetings held by DWAF in setting up the WUAs, where the roles of the various stakeholders are not explained. It may be unclear as to which water users are to be involved, how they are to be involved and the extent to which the WUA can assist in addressing the different users' needs. The main issue is the lack of clarity on whether, and to what extent, the WUA should be involving itself with the management of potable water. This confusion was evident in our fieldwork when a headman and a member of the WUA interim committee had an argument about the roles of a WUA and the level to which domestic water users should be included in the WUA. Some stakeholders such as Amatola Water felt that the WUA should remain solely responsible for agricultural purposes and should not interfere with domestic water service provision. This was confirmed by some of the farmers in Masikhanye WUA who felt that domestic water users, or users from other sectors, would not have an understanding of agricultural issues raised at meetings and therefore should not be involved.

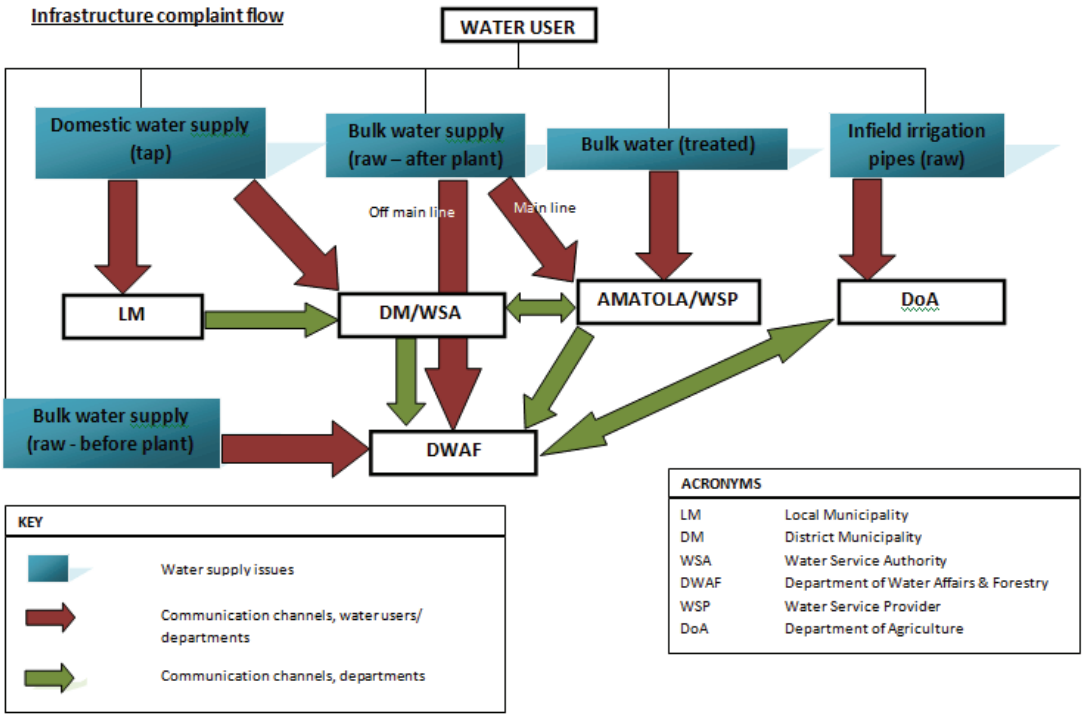

Figure 15: Infrastructure complaint flow

10.3.4 Capacity of WUAs to fulfil functions

The capacity of WUAs to fulfil their functions of allocating water through licenses and water resource protection and conservation is questioned by many stakeholders. The allocation and management of water requires technical skills which are not currently available. The plan is for the WUA to become financially sustainable through either water user charges, selling licenses, the proceeds from water works or WUA member fees. In rural areas such as the study area, acquisition of such fees is currently not a viable option and so the WUA will either rely on DWAF or the future CMA for funds. The plan for the funding of the WUAs in this area is to subsidise small scale farmers for water charges on a reducing scale over a five year period, to allow them to build up their enterprises and become independent, which will then allow the WUA to sustain itself on funds from members and water charges.

Water resources protection and conservation requires knowledge of the water cycle and the importance of protecting a whole river catchment area. These concepts will take time to learn and even longer to implement, but the WUA should acknowledge and integrate any traditional conservation practices. Another form of water conservation discussed is the pricing strategy for water. Water wastage will be minimised if people are required to pay for its use. Untreated water users, such as farmers, are required to obtain licenses and potable

water users are required to pay for water beyond their basic free supply. However, due to a large number of illegal connections on both untreated and treated pipes, and due to the lack of capacity of the municipality to collect potable water charges in these rural areas, water is basically a free resource which is abused. If WUAs are to involve themselves with certain potable water issues, they should extend their role of monitoring the illegal use of untreated water to include treated water. However, they need adequate training to be able to identify illegal connections and other inappropriate uses of water. Municipalities and the WSAU must find solutions to the problem of charging rural communities for the use of potable water beyond their basic free supply.

In resource-poor regions such as the study area, one of the main incentives for establishing a WUA is economic development. This is possible as the government can provide services and infrastructure to a group through the WUA much more easily than it can to individuals. Concerns or demands from communities are likely to be taken more seriously when they come from an officially recognised institution. The key to increasing the opportunity for economic development is that WUAs provide access to water licenses, thereby allowing these agriculturally dominated communities to secure water. To secure water in future it will be necessary to obtain a water license through a WUA and therefore all farmers must become members of the association. However, there is a perception that commercial farmers, who have existing water rights, are still reluctant to join the WUA. Representatives from the DoA and Amatola Water indicated that commercial farmers feel the WUA Board will not be capable of performing licence allocation and that negative consequences will result for them, such as having to assist with training and skills development. However, WUAs provide an opportunity for historically disadvantaged individuals to gain essential skills and water security that opens up possibilities for job creation, poverty alleviation and food security, as indicated by the NWA guide and WMI overview (RSA, undated and 1998a). This role for the WUA was also emphasised at a public participation meeting for Masikhanye WUA, which promoted the idea that WUAs are also involved in economic development and not only resource management.

10.3.5 Single and multi-sector WUAs

WUAs can be either single or multi-sector which can create confusion. A single sector WUA would entail a board that looks after the interests and benefits of people or entities that require water for the same reason, for instance farming. A multi-sector WUA would involve all people and entities in a given catchment area that require water for different purposes. Involvement of local communities in the participation process promotes the setup of multi-sector WUAs, but in practice the only people who seem to be involved in the WUAs within the study area are the farmers. This is understandable as the predominant sector is agriculture. Many people have a perception that only farmers can be involved and they feel frustrated at being excluded from a process where their initial perception was that the WUA was a medium through which all their water issues would be solved. This was highlighted in

Masikhanye where certain communities looked to the WUA to solve the need for potable water. The confusion as to whether the WUAs should be single or multi-sector seems to be hindering the process. In Masikhanye, the confusion is heightened by the fact that the WUA is being setup on the back of the old defunct irrigation scheme, which was run in an unjust manner. The failure of this irrigation scheme, which was operational during Apartheid, has given rise to negative perceptions concerning WUAs. The WUA is a new institution with a new approach and resource users and other stakeholders are not able to differentiate between the old and new institutions.

10.3.6 The strategic approach to the establishment of WUAs

Adapting implementation of the NWRS to suit local conditions is important in the Eastern Cape, since education is limited and a State-motivated initiative is encroaching upon areas where elements of traditional governance are still in place. This need to modify the NWRS has been recognised by DWAF, e.g. through the creation of by-laws to speed up the WUA establishment process. The Eastern Cape also has a weak economy and therefore subsidies for water provision and management are insufficient. DWAF has acknowledged that they have not met their requirements in resource-poor areas, and that a change in strategy is needed in these areas.

It has been questioned whether the devolution of certain functions and decision making powers is an effective strategy in areas such as the Eastern Cape. Although the intention of creating a more equitable and participatory approach to WRM is in accord with South Africa achieving democracy, yet if devolution of certain functions occurs prematurely in an area that lacks capacity, individuals and institutions will not be able to perform functions adequately, thereby hindering people from effectively gaining access to water resources. Therefore, the State needs to support these institutions and build their capacity, until such time that they are able to perform their required functions independently. This would avoid any uninformed decisions being made that could impact negatively on the sustainability and future supply of water resources.

10.3.7 Co-operative governance for IWRM

A wide array of institutions is involved in adopting the IWRM approach. The Constitution, as well as the legal framework governing WRM, emphasises the importance of co-operative governance in recognising that the management of water is not solely the responsibility of DWAF, but involves many other government departments as well as NGOs. Strong co-operative governance is therefore needed both horizontally and vertically (Van Koppen *et al.*, 2002). The literature emphasises that IWRM functions better when various levels of government are given distinct roles, but are mutually reinforcing (Du Toit *et al.*, 2006). DWAF recognises the need for horizontal co-operative governance in acknowledging that DoA is a main role player in the WUA and their primary roles are to provide institutional support for irrigation development, to align technical and financial support as well as align

their goals and objectives with DWAF. However, the field observations revealed that the roles of these two departments are not well defined or understood, especially with regard to responsibilities for management of water infrastructure and the WUA. More co-ordination and synergy across the various divisions within DWAF, as well as between national and regional levels, would improve their service delivery (Van Koppen *et al.*, 2002). Vertical co-operative governance, for instance between the WUAs and regional DWAF, must be good to ensure that community needs are recognised and the necessary resources provided to address them. This is especially important in order to enhance equitable access to resources. Within the WUA context, co-operative governance also extends to municipalities, as they need to ensure that development occurs in a manner that supports the effective functioning of these WUAs. Without strong vertical co-operative governance these poor communities would not acquire the necessary resources to improve their livelihoods.

10.3.8 Need for improved communication flow

In line with co-operative governance there is a need for enhanced communication between all government departments and stakeholders in WRM. The communication links between stakeholders have therefore been evaluated in the research. As described in the methodology, a basic flow diagram was presented to participants attending a workshop in eDikeni and in a feedback session for Masikhanye WUA, where water users and WUA committee members were present. This provided the basis for an interactive discussion of existing effective communication links between water users, the WUA and stakeholders. New stakeholders were added by participants to the original flowchart and the communication links that were poor or nonexistent were identified. Poor communication linkages amongst key groups involved in water management were identified as a key issue of concern. The resultant communication flow is illustrated in Figure 16 below:

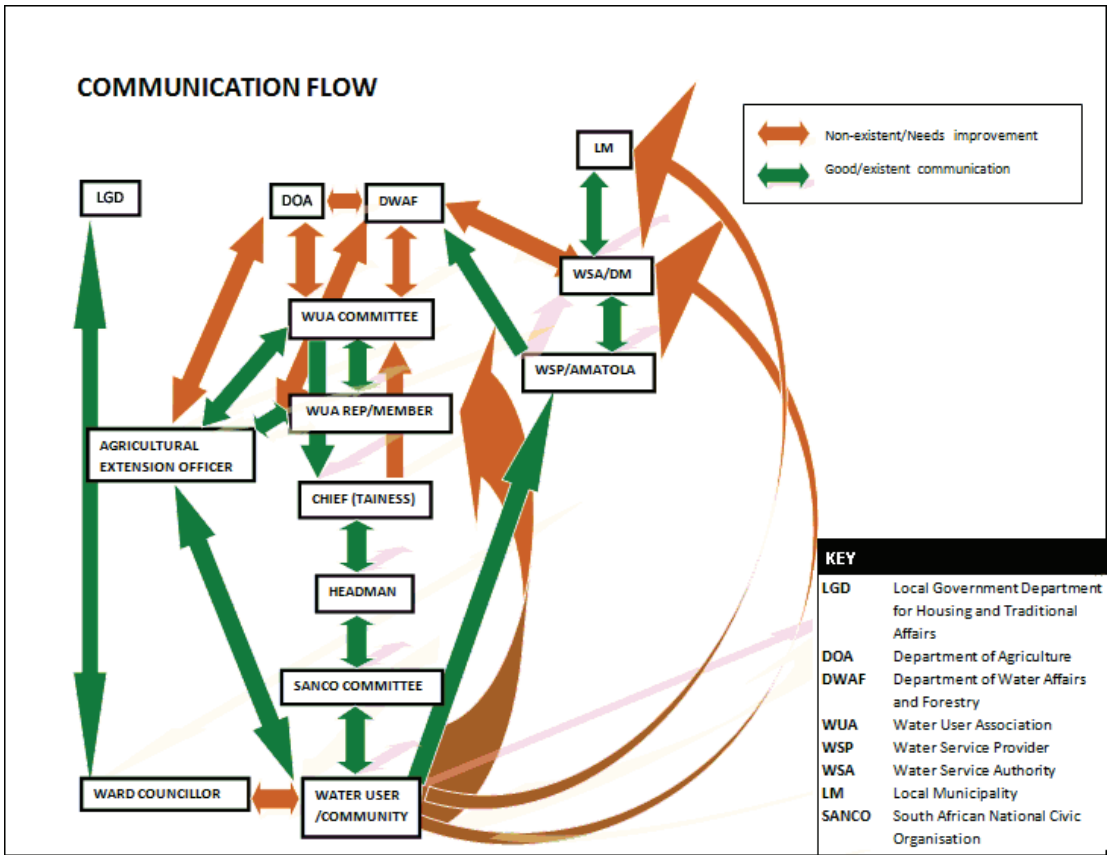

Figure 16: Communication flow between stakeholders

It has been noted in the section on capacity building and public participation that there is a national strategy for communication in catchment management (DWAF, 1999) as well as a regional strategy which is currently being drafted for WUAs. The communication linkages that need strengthening are highlighted in the flow diagram above and should be integrated into this strategy as well as the strategy relating to public participation and capacity building.

Information emanating from the two workshops and illustrated in the diagram above, suggests that communication between the community, the village committees (SANCO), headmen and the chief or chieftainess, varies greatly between the two study areas. In Masikhanye WUA, there is a strong communication link between traditional leaders and water users as they are actively involved with the community. In the eDikeni WUA, there are six traditional leaders who all have varying degrees of involvement with their communities and at times the communication is not strong. Although the traditional leaders were consulted prior to the establishment of the WUA, they have not been well represented at meetings. The ward councillor is also used to communicating issues, but again this depends on the relationship that the community has with their ward councillor in the area. The

communication links with the ward councillors did not appear to be as strong as the link with traditional leaders. This is particularly the case in Burnshill village (Masikhanye WUA), where the ward councillor is also a lawyer and the community feels that she does not attend to their matters sufficiently as she is preoccupied with her other work.

The communication flow between the chief/chieftainess and the WUA also needs to be improved as the traditional leaders' representation and involvement is not always emphasised. Traditional leaders are represented on the WUA as non-voting members and attend public participation meetings on occasion. However, they usually send a representative to these meetings. This is the case for Masikhanye WUA, where the traditional leader attends the formal public participation meetings but sends her representative to most WUA meetings. In the case of the eDikeni WUA, the traditional leaders or their representatives were not present at any of the meetings or workshops during the research process.

The village representative on the WUA, who is elected by the village, was in some cases providing poor feedback to the community on issues raised at the WUA meetings, which created frustration amongst villagers. They did not feel that their needs were being met. National DWAF also confirmed this by saying that WUA representatives do not necessarily understand the needs of everyone. The linkage that the traditional leaders make with the WUA does not necessarily mean that water users need to go through the SANCO committee, headman and chiefs in order to communicate with the WUA. This is illustrated by the orange arrow linking the water user and WUA. This direct communication between water users and the WUA is still weak because the mechanisms for communication with the WUA in the establishment process still need to be defined. In addition, the WUA board is still to be elected.

The link that the ward councillors have with the Local Government Department (LGD) for Housing and Traditional Affairs, which focuses on local economic and social development, was seen by the community as being positive. This link with ward councillors was also a means of raising issues concerning economic development. This was again only the case if the ward councillors communicated these issues on their behalf, as occurred in the case of eDikeni WUA, but in Masikhanye WUA this communication link was weak.

Agricultural extension officers provide an excellent link between farmers and the DoA to communicate the needs of farmers. However, certain community members indicated that the DoA often did not address the concerns raised by extension officers and so farmers felt that their needs were not being addressed, e.g. the reporting of broken infrastructure on their farms for which they seek assistance. Agricultural extension officers also expressed frustration in situations where they reported issues to DWAF that were raised by the eDikeni WUA, but no response was received from DWAF or the issue was not reported to DoA, if it needed to be addressed by them. This indicates poor cooperative governance and creates uncertainty within the WUA as to whom to approach when problems arise.

There are still poor communication links between the WUA and the various government departments. This was highlighted by the WUAs, as issues raised have not been addressed and very little action has been taken. This could be due to the fact that the WUAs are still in the establishment phase and neither WUA has yet elected its Board. It is hoped that the Board will be given specific roles and responsibilities, and will communicate issues on behalf of resource users to the relevant departments. It also raises the issue of co-operative governance and the need for support from institutions such as DWAF and DoA, without which these WUAs will not be sustainable.

10.3.9 Capacity building processes for WUAs

In determining a new governance system for WRM in South Africa, DWAF recognised the need to build the capacity of local level institutions and individuals participating in WRM. The processes that DWAF outline for their capacity building efforts in the NWRS and other related policies are discussed in the section on WMIs. These processes need to be related to the findings from the field research to confirm whether actual capacity building within these WUAs is aligned with policy. The field research also aimed to identify what the requirements are for further capacity building, as perceived by stakeholders.

10.3.9.1 Capacity building currently implemented in the study area

DWAF's documents and policy on capacity building outline extensive training programmes and information dissemination, which form part of the capacity building process for WUAs (DWAF, 2001b, 2002a, 2002b). Also included in the process are stakeholder analyses, community needs assessments and public participation. The implementation of these training programmes, stakeholder analyses and needs assessments, appear to occur regionally in an *ad hoc* manner. There are no formalised stakeholder analyses occurring within the study area WUAs at this time and there are only guidelines provided by DWAF National for the process. Kat River WUA has, however, created a guide for stakeholder analysis that could be utilised in this process in the future (Burt and Vanderford, 2006). This document is relevant to the area and it outlines which stakeholders to include, at what level of involvement in the WUA and the suggested action surrounding the involvement of the various stakeholders.

At present in the study area mainly feasibility studies are being done prior to the establishment of WUAs. This differs from DWAF documents that outline the importance of needs assessments in the capacity building process and as a basis for social development (DWAF, 2002a) and, therefore, these assessments should be implemented at a local level. It has been emphasised by national DWAF that conflict can be created if the empowerment of HDIs does not occur. The need for empowerment has been identified in the study area and has been achieved to a certain degree in the eDikeni WUA as committee members and especially the chairperson are motivated to continue the process further. This empowerment has occurred through training and information sharing from DWAF, which has enabled the WUA to take on new responsibilities. As a result the WUA was able to prevent the granting

of a water licence to an industry in the area which would have given the industry the right to access a third of the water allocated to the WUA within its jurisdiction. In the study area, however, there is a need for further empowerment and capacity building, to extend their influence in decision-making.

National DWAF have performed skills audits of WUAs in other provinces and found that the institutions lack basic skills regarding water management, including expertise required for the effective functioning of the WUA. These were identified as critical skills for which there should be training, but WUAs also need capacity to address other issues not directly linked to water management, such as land ownership (Koyana, 2007, pers. comm.). Consequently, when dealing with WUAs in historically disadvantaged areas such as the study area, the capacity building process should go beyond the training programmes as outlined by policy and deal with issues related to the enabling environment. This was evident in meetings with the eDikeni WUA, where the agenda included a focus on land ownership issues and obtaining permission from traditional leaders to lease land for farming projects.

National DWAF has also highlighted that water users should not only be informed about WRM, but also resource protection, which is an important function in the WUA and is in line with the new demand management strategy as outlined by the NWRS. During meetings with WUAs to discuss their functions, the emphasis was not on resource protection, but other functions were included such as water allocation, the provision of water for economic development, and improved farming production through the irrigation schemes. Farmers in both the eDikeni and the Masikhanye WUAs emphasised the need to understand these functions, as well as what legal 'water use' entails as outlined by NWA, so they can identify illegal water users. They did not have a clear understanding of what the roles and responsibilities of the members of WUAs were. The agricultural extension officers in eDikeni area also indicated that they constantly have to re-educate farmers about the functions of WUAs. Greater emphasis is, therefore, required on the practical implementation of information conveyed and greater awareness needed with regard to WRM and WUAs (DWAF, 2002a).

Masikhanye and eDikeni WUAs received training and assistance from DWAF in the drawing up of their constitutions, as well as assistance with preparing business plans in eDikeni WUA. However, both WUAs complained that the constitutions included in their proposal to the Minister had been sent back numerous times, and that the process of approving them had taken too long, which created frustration. The business plans were mainly done by outside consultants and although the eDikeni WUA members were consulted, they would have liked to be more involved in the creation of these plans.

The DoA has the mandate to aid capacity building for the revitalisation of irrigation schemes such as the Zanyokwe Irrigation Scheme associated with Masikhanye WUA. Agricultural extension officers who interact with farmers from both the WUAs, indicated that there is an

urgent need for skills training in financial management and maintenance of irrigation schemes. This was also emphasised by senior personnel from Amatola Water who felt that WUAs do not have technical skills to undertake repairs in the field. DoA, through its agricultural extension officers, has been involved in training emerging farmers, including those in the study area, in skills such as vegetable production, land preparation and bookkeeping for financial reporting. However, farmers still feel they need more technical skills in order to maintain infrastructure on their farms, as was emphasised in the workshops for both WUAs. The linkage with the DoA promotes co-operative governance and emphasises the networks of support that other institutions can provide to WUAs. Although this linkage with DoA is evident it is felt that more capacity building can be provided to the WUA by this department.

Although the need to integrate IKS for an understanding of indigenous conservation practices has been expressed (DWAF, 2002), it does not appear that these knowledge systems are being integrated at present, especially as it was felt by stakeholders that conservation and protection of resources has not been emphasised in interactions with DWAF. The traditional leaders are integral to this process and although in the Masikhanye WUA the chieftainess does appear to be actively involved in the WUA, in eDikeni this was not the case. Also representatives from the HOTL expressed concern at not being aware of the NWRS to establish WUAs and devolve responsibility to the local level. There is therefore a need for improved participation and communication with stakeholders in order to integrate this knowledge. In addition, regional DWAF has indicated that they are in the process of compiling a communication strategy which will include capacity building for traditional leaders. In order for participation in IWRM to be effective, input and decisions need to be made from an informed position (Du Toit *et al.*, 2006). If there are still gaps in knowledge and a limited integration of IKS, the effectiveness of the participation of stakeholders is reduced. It also appears that the efforts to empower the WUAs, as outlined in DWAF's documents, are not being implemented successfully at present.

A critical component of the capacity building process that does not occur in the study area is a formalised evaluation process. An evaluation would assess the effectiveness of the capacity building efforts and the resources required to continue the process. A national strategy for evaluation is to be addressed in the new "Capacity Building and Empowerment Framework" to be released in 2009. The need for an evaluation of WMIs and the effectiveness of their establishment processes is also emphasised in the principles of IWRM (Motteux *et al.*, 2006). This evaluation is crucial to the success of the establishment process and the sustainability of WUAs.

10.3.9.2 Capacity needs as perceived by WUAs and water users

The participatory workshops undertaken in the two case studies identified gaps in the capacity building process for the WUAs. A summary of the areas where the WUA

committees and water users felt they needed training and development is illustrated in the table below:

Self-empowerment	An understanding of individual rights such as those outlined in the constitution and NWA
Understanding of legal 'water use' in NWA to identify illegal users	Financial management to manage farm production and the WUA
Technical skills (e.g. pipe maintenance)	Training on legislation and policy related to WUAs and WRM
Administration and functioning of the WUA and how to allocate water	Education of traditional leaders in WRM
Skills development to enhance communication	Roles and responsibilities of members within a WUA
Creation of business plans	Conservation, protection and management of water

Table 1: Capacity training needs for WUAs in the study area

Although some of the training and capacity needs identified in the above table are outlined in DWAF's documents on capacity building (DWAF, 2002a; DWAF, 2002b), several topics and skills have either not been addressed at all or have not been covered adequately. It can be argued that at this early stage of the establishment process some of these skills would not have been emphasised, such as the administration and functioning of the WUA. However, from discussions with water users and members of the water committees it is clear that there are needs identified above that should have been addressed from the outset of the process. This is particularly the case for the eDikeni WUA which started its establishment process three years ago. Topics and skills that were considered crucial by water users include an understanding of what legal 'water use' entails as outlined by the NWA, improving understanding of the new water policies and strategies as well as developing skills on the functioning and administration of the WUA. If these skills are not acquired, the WUA will not be able to monitor and manage the process as outlined by IWRM principles for sustainability (Motteux *et al.,* 2006). Certain training needs stated above are also not emphasised in DWAF's documents and guidelines. These include training on individual rights as outlined by the constitution and the NWA and the conservation and protection of

water resources. Self-empowerment was also highlighted by the WUA members as a crucial aspect of sound water management. However, it can also be argued that empowerment is a long term process that will be facilitated as the other training needs are addressed and the WUA becomes more functional.

Capacity building requirements identified by an NGO, Rural Support Services (RSS), working with rural communities in the area, are self-empowerment, the teaching of individual rights as indicated by the constitution, financial training, conflict resolution and project management training. RSS have also found that effective implementation of projects requires community needs assessments to involve the active participation of the community to ensure that projects are sustainable. However, it is felt within the district municipality and regional DWAF that NGOs lack capacity and skills to implement projects related to water and sanitation provision and, therefore, private consultants were appointed to undertake the work. It was also noted that there were very few NGOs or CBOs in the study area and those NGOs that were active were not utilised by regional DWAF. RSS were not aware of the strategy for establishing WUAs and indicated that there had been a decline in their interaction with DWAF, since DWAF delegated the functions of water service provision to the district municipality in 2003. The lack of involvement of NGOs does not promote the concept of collaborative management within WUAs and their further involvement should be investigated. The capacity building of NGOs is also emphasised in the implementation plan (DWAF, 2002b) at a catchment level and therefore should also be implemented at a local level.

10.3.9.3 Using other tools to develop capacity

In the Eastern Cape, national policy for capacity building is seen by regional DWAF officials as being too theoretical and difficult to understand at community level and therefore not utilised. It does not appear that any other measures are being implemented, but there is the intention to do so by regional DWAF. There are many capacity building tools available that have been created specifically for the area, but these are not utilised by DWAF (e.g. various Rhodes University research projects on the Kat River WUA; see also Farolfi, 2004). The use of these types of research could allow the capacity building process to focus on strengthening networks and linkages between the WUAs and other stakeholders.

A catchment forum has been set up in the Kat River area with the help of Rhodes University. It is a non-statutory body that assists in stakeholder engagement and participation in decision-making for the Kat River catchment. This forum is not recognised by DWAF and, therefore, not made use of by the study area's WUAs. When the CMA is set up a catchment forum should be established to assist stakeholders to participate in decision-making within the catchment. The forum established for the Kat River could be used as an example of a similar forum that could be established in the study area in future. This could assist in effective participation in decision-making.

10.3.9.4 Public participation

The public participation process is one of the mediums through which capacity building is achieved (Motteux, 2006), and is integral to the establishment of the WUA. This process was discussed with stakeholders in the WUA workshops and ideas regarding its improvement were noted. The process followed in the study area was compared to the requirements outlined by the NWA (the Public Participation Series, DWAF, 2001a). These requirements were presented in a flow diagram to participants.

10.3.9.5 The nature of public participation in the study area

The public participation process in general is seen to be inadequate by stakeholders. National DWAF has emphasised a need for the strengthening of regional offices by providing them with staff that have the appropriate qualifications. Skills that will be required for regional staff include dealing with a diversity of cultures, conflict management, communication skills and participatory methods. Training in some of these areas is provided by outside consultants, but this occurs regionally on a case by case basis. A consultant with Resource Development Adhocracy, however, said that some consultants in the past have been involved in facilitating public participation without having the necessary experience. DWAF now uses accredited consultants for these processes, but the quality of the process has been questioned (Titus, 2007, pers. comm).

National DWAF acknowledges that it has not met its requirements in terms of public participation. A DWAF official from the WMI directorate has noted that in areas where there is poverty, there is a need for change in strategy to accommodate the resource-poor (Khrommbi, 2007, pers. comm). At a public participation meeting for the Masikhanye WUA, a regional DWAF official noted that WUAs must put pressure on the government to ensure that co-operative governance and effective assistance for WUA occurs. This emphasises the need for the local level institutions and the government to work together towards a common goal. IWRM functions better when various levels of government are given distinct roles, but are mutually reinforcing (Du Toit *et al.,* 2006). Both WUAs and agricultural extension officers have emphasised frustration with government departments that do not respond to their issues and therefore there is a need for improved co-operative governance.

From discussions with stakeholders, it appears that the process of recruiting people to attend public participation meetings is haphazard. Regional DWAF initiates these meetings, all stakeholders are invited in the village and whoever is interested attends. The meetings are promoted by ensuring there is music and meals provided as an incentive for stakeholders to attend. This incentive could entice stakeholders to attend who are not representative of the community. Field observations and engagement with water users reveal that DWAF does not sufficiently engage with stakeholders prior to public participation meetings. There is insufficient awareness creation and information dissemination prior to these gatherings, thus water users are not sufficiently informed to engage actively in public participation meetings.

The WUAs believed that leaders in the community could be engaged prior to public participation so that they could relay information to the community before the meetings.

Water users in the community feel that information provided in public participation meetings is insufficient. Members of the stakeholder unit from national DWAF approached attendees after meetings to enquire about their level of understanding with regard to WUAs. It appeared there was still confusion with regard to the functions of WUAs, and therefore these meetings did not adequately relay information to the participants.

10.3.9.6 A decline in public involvement

There has been a steady decline in public involvement in the two WUAs. Five members of the eDikeni committee have left the WUA, and the chairperson of the Masikhanye WUA also indicated that he would not be standing for election onto the WUA board. The Masikhanye chairperson and other WUA members are leaving, as the process has taken too long and little action is evident. Regional DWAF do not know the reasons behind the members leaving, as they have not been questioned. It is important to follow up this matter so that the information gained can be used to improve the establishment process.

10.3.9.7 Representation within the WUA

Amathole District Municipality has utilised village water committees with representatives from the communities to discuss issues of domestic water use and to then communicate the findings to the municipality through a representative. These committees are given a three day skills training programme in administrative and financial management as well as training to carry out minor technical repairs. A representative of the district municipality suggested that these village committees could be represented on the WUA to raise issues relevant to domestic water users.

DWAF does not have field officers in the study area and so agricultural extension officers from DoA are conducting most of the recruitment for public participation meetings. Extension officers see it as their main responsibility to engage with stakeholders from the agricultural sector and thus it is felt that the process for WUAs is dominated by the agricultural sector. The communities of both WUAs feel they could be better represented on the WUA by groups in the community such as churches. This would involve leaders of these groups being elected onto the WUA board or becoming members of the association.

There seems to be apathy and a lack of desire to be involved in WUAs from certain local communities. Therefore, vocal and influential members in the community are mainly represented on the WUAs. The representation of villagers on the WUAs thus far has been questioned by water users who feel that there is poor feedback from WUA representatives and that the needs of the villagers are not adequately communicated. DWAF has also noted that those from the marginalised segment of the community currently attend meetings, but do not participate actively. The eDikeni WUA noted that they engage with a diversity of

stakeholders prior to the election process to ensure good representation. Good representation in water management is emphasised as one of the purposes of the NWA in addressing the inequities of the past (RSA, 1998 s 2, DWAF, 2002a and Van Koppen *et al.*, 2002).

Members of the stakeholder empowerment unit within national DWAF have noted that women are not sufficiently included during the establishment of WUAs, and are poorly represented in management structures. Poor female representation is seen as influenced by the customs of traditional governance systems that in the past oppressed women. Therefore, women were not involved in aspects of decision-making in matters such as water management. In terms of the legal framework, equal opportunity for women in water management and decision-making is required by the NWA and NWRS. However, achieving equality is a slow process and because of historical customs, women may be reluctant to take these opportunities. The involvement of women is emphasised in the constitution of the WUAs which require female representation on the WUA Boards. However, by-laws can be created should the WUAs not be able to meet these representation requirements. There is a concern that these by-laws will not be removed and this could hamper the process of promoting women's empowerment. The structural gender imbalances that have been created historically in rural communities can therefore impact on water management.

RSS, who work on local projects within the study area, indicated that predominantly women were involved in implementing projects related to water, whilst men were more involved in management issues. It was evident from WUA meetings in eDikeni that women were predominantly involved in agricultural farming projects, and so they are well represented in meetings and workshops. This was not the case for Masikhanye where the meetings were mainly attended by men. During transect exercises water users also emphasised that women do not always get involved in water management issues as they have heavy workloads, whilst others indicated that women do not wish to be involved. The perception of women's roles within the communities therefore varies greatly, but the overriding impression by the communities is that if they wish to be involved in water management, they now have the opportunity to do so. Van Koppen *et al.* (2002 p. 3) argue that 'One of DWAF's ultimate aims, is to improve access to and control over water by poor rural women and men'. It appears that although there is a definite movement towards achieving this aim in eDikeni, there is a need for a stronger emphasis on the empowerment of women in the study area.

11. DISCUSSION AND CONCLUSIONS

11.1 Role of traditional governance systems in land and water management

In most rural settings during the pre-colonial era in South Africa, traditional authorities wielded authority over natural resources, including decisions regarding water infrastructure development, water allocation and water pollution (Van Koppen *et al.*, 2002). During the Apartheid era various forms of communal tenure were administered through traditional authorities. However, many of the traditional leaders were co-opted by the State or corrupted into furthering the aims of the Apartheid government (Turner and Meer, 2001 as cited in Hauck and Sowman, 2003a). The dislocation of people disrupted traditional forms of governance and customary law. In many instances, the traditional authorities were viewed as agents of the State (Shackleton *et al.,* 1998; Turner and Meer, 2001as cited in Hauck and Sowman, 2003a). In the previous homeland*s* under Apartheid, the homeland government held much of the responsibility and decision making authority for water management (Van Koppen *et al.,* 2002). In terms of the new legal framework governing WRM in South Africa, the role of traditional leaders is unclear. The NWA does not explicitly recognise traditional water management structures (Malzbender *et al.,* 2005), nor customary practices. Based on information gathered from case studies investigated in this research, it is evident that the role of traditional leaders in WRM is not formally recognised.

The study does, however, show that traditional leaders still play a crucial role in their communities, mainly as a communication channel, in conflict resolution and in land allocation. In some villages, traditional leaders have more influence than in others. At present, traditional leaders do not play an active role in the WUAs in the study area because the WUAs are State driven. It seems that State driven systems and traditional governance systems have different structures and values which make it difficult for them to work together. Ray (1996) argues that traditional leaders derive their legitimacy and authority from pre-colonial roots, while the contemporary African State is a creation of, and successor to, the imposed colonial State. Because the State and traditional leaders derive their authority and legitimacy from different sources, their sovereignty and legitimacy in the post-colonial State is divided (Ray, 1996). However, it has been noted by various stakeholders, including DWAF, that traditional leaders need to be more involved in aspects of water management and that their capacity should be developed in this arena. Where traditional leaders' influence is still strong, their role within WUAs could include improving resource user involvement, assisting in conflict resolution and providing guidance or input with regard to water access and management related to land allocation.

A CPR has been defined "as the co-equal ownership of the right to a bounded resource where the community-established rules govern its use" (Samakande *et al.,* 2004). The role of traditional leaders in water management needs to be emphasised within the context of common pool management regimes. This is because traditional governance systems have

played a critical role in managing CPRs at a community level in the pre-colonial era and continue to do so (Dolsak and Ostrom, 2003). Leadership with respect to decision-making generally rests with individuals who are senior in social status within the community (Singh, 2006). Therefore, traditional leaders who are respected by their communities will need to be incorporated in the creation of community rules associated with managing CPRs.

WUAs can be seen as an attempt by government to initiate CPR institutions, as they are set up to manage water resources, which are a type of CPR (Singh, 2006), and run by resource users at community level. Therefore, traditional leaders need to be consulted in the establishment of these WUAs because of their status within communities and their influence in aspects of decision-making. Through community meetings (*imbizos)* traditional leaders are able to understand the needs and concerns of their communities in relation to water resources. Hence, in areas where traditional leaders still have a strong influence they can act as communication mediums between communities and the WUAs to articulate their communities' needs and values. Traditional leaders could then be employed to ensure that the community understands the concepts of WRM, the roles and functions of the WUAs and the communities' role within the WUA. Involvement of traditional leaders will assist DWAF since the traditional leaders could play a crucial role in conflict management should this arise. In this way, the strengths of traditional governance systems can be incorporated into new governance systems for WRM. Therefore, it is important to recognise the value of traditional governance systems and incorporate those elements which are relevant and valuable, thus ensuring robust institutional arrangements for water management.

11.1.1 Role of traditional leaders in land allocation

Another area where traditional leaders still have a strong influence is in land allocation. Most land in rural areas in the Eastern Cape is either State owned, under modified communal tenure or privately owned (Nsonto, 2005 and Cocks *et al.,* 2001). Where land is communal, traditional management systems usually regulate land access and use and therefore also indirectly regulate water access. Water in the study area is a *de jure* CPR in that it is classified as State property, although in practice access is often unregulated. Individuals have the right to use water within the river catchment but have no responsibility regarding its maintenance. In terms of the new dispensation, water users are required to acquire licences. In most cases where land is privately owned, it limits access to water sources for cattle and the general public because access points to water are usually fenced. Thus, the access to water by users in the communal areas is determined by the landownership system. This is evidence that land and water issues are intimately connected. Therefore, the role of traditional leaders in land issues also affects water resources and water management.

In the study area where land is State owned but under communal tenure, there is a need for co-management between the State, relevant stakeholders and traditional management

structures. Given the links between access to and use of land and water resources there is a need for government agents such as DWAF to recognise the influence that traditional leaders have in land ownership and access. This should encourage the involvement of traditional leaders in WUAs. The State needs to work in partnership with traditional leaders when establishing these new WUAs. Traditional leaders can play a crucial role in ensuring the sustainable use of the resource because of their historic role in land allocation. Recognising traditional leaders' role in land allocation and in water use and management is important. The research indicates that traditional leaders are consulted prior to the establishment of the WUAs, but their involvement in ongoing discussions and activities relevant to the WUAs is very limited.

11.1.2 Integration of cultural practices and customary law

Traditional management systems also base their management of CPRs on customary law. These customary laws are based on cultural beliefs and practices which in turn are influenced by IKS. At present, customary laws are not playing a major role in influencing discussions regarding the roles and functions of the WUAs. There is a need to understand these customary laws where they are still being practised, so that informal rules and IKS can be integrated into new local level management systems. Customary practices, such as protecting water sources from cattle with fences, should be acknowledged by the WUAs to enhance their function in achieving conservation goals. Neglect of customary laws may adversely affect the implementation of IWRM, and could have negative consequences for individuals and groups (such as the poor), who were better served by customary systems (NRI, 2004).

Singh (2006) has argued that the relationship between water resources and society extends beyond a materialistic relationship governed by benefit-oriented goals, and is rather representative of symbolic interpretations that in turn contribute to the need to manage water resources as a CPR. The integration of cultural and religious practices into community-established rules concerning the management of CPRs will ensure that the relationship between water and its users does not only encompass the material benefits of water, but also the spiritual association. An example would be religious practices such as baptisms performed by Zionist priests, which are prevalent in the study area. Thus, incorporation of customary law and cultural practices in new water management systems to be implemented at local level becomes important. This ensures that rules concerning the access and management of water are acceptable and respected by water users.

11.2 Common pool management versus demand driven management

The WUAs can be seen to have a dual purpose. They nurture a common pool regime for WRM at the local level but also provide a method for water demand management. These are potentially conflicting aims since the demand driven management regime requires the State to establish WMIs such as WUAs. These are designed to control demand and allocate water, as

well as to protect and conserve water resources through mechanisms such as pricing and licensing. A common pool initiative is a situation where communities have their own resource management regimes and therefore establish the rules surrounding management of the resource. The rules would then be informed by existing indigenous knowledge that is retained by the community. At present, this indigenous knowledge is not being integrated within the WUAs in the study area.

The water users in the study area expressed the need for improved WRM and restoration of defunct irrigation schemes. DWAF, as per their mandate, took this opportunity and initiated the WUAs. At the present time DWAF, with the assistance of the DoA, is driving the process to establish WUAs. DoA is mandated to assist in the revitalisation of defunct irrigation schemes and the upgrading of under-productive ones.

The driving force behind the setting up of the WUAs is the State executing its mandate, as opposed to the community establishing the WUAs based on community values, rules and procedures. The research reveals that the local communities do not fully understand the State's agenda in establishing the WUAs. By incorporating principles underpinning CPRs management, communities' needs will be addressed, as their customary beliefs and values will be incorporated into resource management actions and decisions. Common pool management systems also allow users to create their own rules around water access, use and protection. Hence, it is important to note that it is difficult to integrate water demand management systems and common pool management systems because they seem to have different purposes. Therefore, policy makers need to be aware of such conflicting aims to avoid confusion at local level.

Common pool management is more likely to succeed if resource characteristics include "small size, stable and well-delineated boundaries, relatively small negative externalities resulting from the resources use, ability of resource users to monitor resource stocks and flow and a moderate level of resource use" (Dolsak and Ostrom, 2003 p. 12). External factors are a challenge in CPR management, which can be further exacerbated by demand driven management systems. In the case of the new WMIs in South Africa, negative external factors may result from the demand management pricing strategy which encourages WUAs to charge for water use, licenses and membership fees. Due to the lack of resources in the study area, not everyone can afford to pay for water. This has already caused some users to take advantage of free water through illegal use. This illegal use decreases the ability of WUAs to function effectively. The cost of this illegal use is then borne by the WUAs and their members who are paying for water and for its effective management. The WUAs therefore need to fully understand what illegal use of water entails, to monitor the illegal use and prevent it from occurring. This will also assist in moderating the level of resource use, thereby promoting resource conservation in line with common pool management objectives. Water users will therefore need to agree on the rules surrounding reasonable or fair use of

water resources.

11.3 Institutional dimensions

The new legal framework governing water management in South Africa has led to the creation of a number of new institutions at different levels which are responsible for different management functions. This study has focused particularly on new WMIs at the local level, their mandate, roles and functions and ability to operate effectively.

11.3.1 Complexity of WMIs

One of the objectives and challenges of the NWRS is to devolve certain management functions and decision making powers to the community level so that water resources can be managed by the community through the WUA. The WUAs aim to become self-sustaining institutions that are community driven and that can perform all of the intended functions delegated to them. Their overall objective in carrying out their functions is to ensure that development is sustainable and in line with the principles of IWRM. The NWRS guides the establishment of these WUAs to ensure sustainable development and an integrated approach to WRM. However, the research has shown that although they aim to incorporate principles of IWRM, the extent to which these WUAs can implement this approach is of concern. This is because the functions of WUAs need to be seen within the broader context of their WMA, which is managed by the CMA. It is at this catchment level that relevant stakeholders can be represented and be involved in integrated planning and decision-making. Especially in such areas that lack capacity it would be preferable that the CMAs are set up first or as a parallel process to the establishment of the WUAs. In this way, local representatives from the WUAs could be elected to serve on the CMA at the same time as working with stakeholders at the local level. This would ensure that the stakeholders' needs at a local level are incorporated at the catchment level.

The CMA provides the institutional framework where issues relating to potable water and water used for purposes such as agriculture can be co-ordinated within the broader WRM strategy. The new approach to water management has resulted in district municipalities within the study area being delegated certain functions by DWAF, e.g. the provision of potable water, provision of sanitation and storm water management. It is unclear how these municipalities with their new responsibilities interface with WUAs, which are set up primarily for managing water for agricultural use. As the study area has no CMA, the WUAs do not have the support of this institution and the broader level governance framework it provides. This places undue pressure on the WUAs to co-ordinate issues related to potable and untreated water. However, as they do not have the capacity to do this it becomes important for the WUAs to define their roles and responsibilities from the outset of the process.

The functions and responsibilities of the WUAs have also been questioned by district municipalities and other WSPs such as Amatola Water. They are under the impression that the WUAs have the responsibility for issuing licenses and have control over water allocation for treated water and agricultural purposes. This is because the WSPs would have to buy water from WUAs in order to treat it. There are therefore overlapping roles between these institutions and it is crucial that they work in harmony. After conducting interviews with various stakeholders, it was clear that district municipalities and Amatola Water had little involvement in the establishment of the WUAs thus far. This lack of collaboration creates confusion amongst stakeholders and hinders the establishment and functioning of WUAs.

11.3.2 Co-operative governance

Government policy has emphasised that if inequities of the past are to be rectified through water law, strong vertical and horizontal co-operative governance is essential (Van Koppen *et al.*, 2002). However, the findings show that co-operative governance in water management and implementation of the NWRS is weak and there is confusion amongst the institutions and stakeholders involved. Currently co-ordination within one institution and its different levels of social organisation, as well as between different institutions with WRM responsibilities is poor. This includes the co-ordination between DWAF national and regional offices, as well as other divisions within DWAF that affect integrated service delivery, including the CMA (Van Koppen *et al.,* 2002). In the study area, it became apparent that regional DWAF is not implementing national policy, as it is considered to be too theoretical and scientific. National and regional DWAF departments must improve their communication and adapt policy to suit local or regional conditions. Due to the fact that there is no CMA in the area, there is need for good co-ordination between DWAF national, regional and the WUAs.

There is also need for horizontal co-operative governance. This refers to co-ordination amongst institutions on the same level of social organisation, including the regional departments of DWAF, DoA, and the district municipality. Another example would be the co-ordination between the district municipality and other WSPs such as Amatola Water and the WUAs to ensure clarity on their roles and responsibilities. Horizontal co-ordination between the different departments, such as DWAF and DoA, is necessary to align the technical and financial support needed by the WUAs. DWAF and DoA also need to coordinate with respect to their responsibilities for maintaining water infrastructure, as well as the skills training that is required for WUAs. There is a need for an overall strategic plan for all government departments in order to co-ordinate their activities with respect to the amount of water required and the amount of water available. For example, the housing department needs to co-ordinate its housing development proposals with DWAF, so that they do not build houses beyond the available water capacity. The DPW needs to build infrastructure such as roads, to create opportunity for farmers to be competitive in marketing their produce. Horizontal co-operative governance is being addressed to some extent through

the Integrated Development Plans (IDP), but at this stage WUAs are not providing any input into these plans. The WUAs will need to provide information on community needs and priorities so that these can be integrated into the IDPs. Horizontal co-operative governance also includes the support of other community organisations such as NGOs and private sector players. At this stage NGOs are not involved in the study area. They could play a crucial role in facilitating community engagement and education.

11.3.3 Capacity building, public participation and co-management

The need for co-operative governance has been emphasised so that DWAF, DoA, NGOs and other government departments can support WUAs and assist with developing their capacity to fulfil their functions. The way capacity building is implemented is critical to the sustainability of these institutions. The process needs to ensure that stakeholders are able to make informed decisions about planning, development and management in order to manage water resources effectively (Singh, 2006). The study shows that rural communities in the area do not fully understand many concepts related to IWRM, and the roles and functions of the WUAs. There are strategies in place to enhance public participation and build the capacity of WUAs. These are clearly documented in a number of DWAF policies and guidelines (e.g. DWAF, 2001; DWAF, 2002a; DWAF, 2002b and DWAF, 2004b). However, at this stage the WUAs do not appear to be sufficiently involved in WRM planning and decision-management processes. This is because DWAF provides information and skills training on selected topics such as WRM, basic administration and financial management, but is not actively involved in developing capacity of the WUAs and their members, to a stage where they will be capable of sustaining these institutions.

The communities involved in this study also do not have the capacity to establish WUAs without State support. DWAF needs to facilitate the development process in partnership with WUAs. This kind of partnership where government agencies, local communities and resource users share the authority over and management of resources, as appropriate to each context, is referred as co-management (Hauck and Sowman, 2005a). This partnership is illustrated on the co-management continuum (section 3.4) (Hauck and Sowman, 2005a). The reason this partnership is necessary is because at present the State and the community appear to have differing agendas and are not working towards co-management. They also have different knowledge, skills and resources which need to be brought together. The co-management process should be aligned with the aims of IWRM and NWRS to devolve certain management functions and aspects of decision-making and to involve stakeholders more actively in resource use and management. At present, DWAF is still in control of decision-making, and stakeholders are not being sufficiently engaged or informed to assist in this process. Hence, the activity of establishing the WUAs does not incorporate the principles and approaches of co-management.

The public participation process is critical in that it contributes to empowerment of members and enables them to actively engage in these processes. It appears that DWAF has a different agenda to the WUAs. Although DWAF follows the requirements of the public participation process, in reality stakeholders are not sufficiently engaged prior to the formal public meeting. There is a need for early stakeholder engagement to assist in active participation in the implementation of the NWRS. Communities need to be better informed about the WUA and its functions. DWAF should first identify all stakeholders by undertaking a thorough stakeholder analysis to determine who should participate in the process. These stakeholders can then advise DWAF where they can best assist to improve the implementation of the NWRS. The research generally found various stakeholders who had knowledge and resources to contribute to the development and implementation of the NWRS, yet were not involved in the planning process (such as Rhodes University, HOTL and local NGOs). If collaboration with stakeholders is weak, the use of local knowledge and experience will be minimal. In the context of the Eastern Cape, where resources are lacking, it is essential to harness the knowledge and expertise of all stakeholders.

DWAF can also involve stakeholders in disseminating information. Information can be shared with the communities through channels which are traditionally used and locally recognised, such as village committee meetings before formal public participation is initiated. Water users can then learn about the proposed WUA in an informal way and this would also prevent false expectations of the WUA, often created by State-driven public participation meetings. The inadequate involvement of local communities could result in these communities being poorly equipped to make informed decisions. The WUAs will therefore always be reliant on the State and the desired goal of local management of resources will not be achieved.

11.3.4 Representation within the WUA

The role of WUAs in defunct irrigation schemes creates ambiguity because the expectations of communities are that these WUAs will address all their water needs. However, in practice as evidenced in the study area, the WUAs were mainly concerned with addressing the needs of the agricultural sectors.

Stakeholders in the study indicated that in the Masikhanye WUA, the village representatives did not always communicate the needs of the community at WUA committee meetings. The stakeholders reported that committee members were mainly farmers hence mainly focused on agricultural issues. It was also reported that DWAF only informs farmers about issues concerning the WUAs, therefore farmers always dominate the WUA. However, the eDikeni WUA emphasised that they aim to involve a diversity of stakeholders such as general water users in the election process for their new WUA Board. It is critical that relevant stakeholders are informed of the election process and that there is clarification as to who should be elected

onto the board.

Although the perceptions regarding the role of women in water management in the study area varies, there is a general consensus that if women want to be involved in water management they now have the opportunity to do so. National DWAF has also emphasised that marginalised sectors of society, including women, are not sufficiently involved in local level management structures in the Eastern Cape. Therefore, there needs to be continued emphasis on women's involvement in WMIs and processes.

11.4 Conclusions

The findings from this research reveal that both state and traditional governance systems are relevant to water management in the study area although the former is clearly the dominant system. Water management in South Africa is essentially guided by State-driven policies and strategies which are based on statutory legal systems. However, many rural areas in South Africa have plural legal systems and customary rules still apply. Land and water resources are thus regulated by different legal provisions and institutions, including statutory and customary law.

In terms of current policy frameworks and legislation governing water resource management in South Africa, the new institutional dispensation of devolving aspects of water management to the local level through CMAs and WUAs is concerned with improving service provision and demand management. On the other hand, the traditional governance systems have a CPR management function which involves decision-making based on community established rules and social and cultural practices to control access to, use and ownership of water resources. While these new WMIs actively seek to involve local resource users and key stakeholders in water management decisions through consultation and representation on boards and associations, the overriding purpose of these institutions is to implement State water policy and law. Although these fora do provide an opportunity for traditional leaders to participate, there is no explicit requirement that relevant indigenous local knowledge and customary practices and rules be considered in the formulation of new local level management systems. Thus the extent to which these traditional knowledge and governance systems are incorporated into new management structures and systems is largely dependent on the individuals driving the process and their recognition of the potential value of incorporating this knowledge, customary practices and rules.

The new governance framework for WRM is underpinned by principles of integration, equity, efficiency, participation, devolution and sustainable use. The framework also seeks to address past inequities and to ensure access to water resources for all, especially the marginalised sectors of society. The new institutional arrangements for water management have been built around these principles. These arrangements also encompass the government's intention to devolve certain management responsibilities and decision-making powers to local water users. This is achieved through the establishment of WUAs and CMAs. However, the research indicates that these WUAs have a dual function. They nurture a common pool regime for resource management at a local level but also provide a mechanism

for water demand management. These are potentially conflicting aims and consequently tension is created between promoting a community based approach to managing local water resources and imposing a State-driven agenda to achieve efficient WRM, which is based on rules and systems developed by the government. Consequently, there is a lot of confusion amongst stakeholders, particularly at the local level, regarding the exact objectives, functions and powers of the WUA.

The current approach employed by DWAF to establish WUAs is not achieving common pool management outcomes, as it is State-driven. Such State-driven initiatives have in-built problems because these are not grass roots initiatives. Local stakeholders do not fully understand the State's agenda with respect to devolving aspects of decision making to the local level. Power relationships are unequal, both within the local community and between it and other institutions at local, provincial and national level (municipalities, WSPs, DWAF, traditional leaders etc). For example, communities have to deal with government departments and negotiate with local political elites and so certain groups and individuals are likely to dominate. The communities are also not actively participating in the process and creating their own rules regarding resource use and management.

Despite the existence of polices and guidelines on public participation, it appears that the current procedures and criteria for selecting participants to attend workshops, serve on committees or represent the needs and interests of a particular community, are inadequate. Furthermore, the current opportunities for public participation are limited and the methods employed do not facilitate active engagement of all groupings especially marginalised groups. If the capacity building and public participation processes do not empower stakeholders and the marginalised sectors of society, they remain passive observers in a State-driven process.

Although the NWA and associated policies and guidelines emphasise the need for co-operative governance, in practice this is not occurring in the study area. There is a need for both horizontal and vertical co-operative governance in order to build capacity of the WUAs and enhance WRM. Also due to the fact that water is so fundamental to economic and social development in rural areas, there is a need to strengthen linkages with other relevant government departments and institutions which have an influence on WRM at the local level.

While the establishment of WUAs and involvement of resource users in management activities is consistent with the Constitution, as well as policies and legislation relevant to WRM, these local level WMIs in resource-poor areas such as the Eastern Cape lack capacity, skills and resources to fulfil their functions. To assist the WUAs in achieving their objectives and fulfilling their functions there is a need for improved collaboration between DWAF, WUAs and other stakeholders and consequently, a type of co-management partnership is required. Co-management is a promising alternative to State-driven natural resource management and is being actively implemented in many countries around the world. If this

collaboration occurs, these new local level WMIs can benefit from State input with their knowledge, technical expertise, experience and resources as well as the skills and input from other stakeholders involved in WRM.

Local resource users also have an intimate knowledge of the local area and conditions within which water resources should be managed but lack resources and technical and administrative skills to manage them. Over time, as their capacity is developed and new skills are acquired the WUAs can take on more management responsibilities and decision-making functions, and move towards obtaining greater powers within local institutions. The key to a successful arrangement is to obtain agreement between DWAF, the WUAs and other stakeholders on the principles, processes, management responsibilities and decision-making powers required for effective resource management. As the process develops and capacity is built there will be movement from a State-driven to a user group driven co-management arrangement. The unequal power relations that are evident between the WUAs and other institutions need to be recognised within this co-management arrangement.

12. RECOMMENDATIONS

Based on the findings of this research the following recommendations are made:

12.1 Clarify and communicate the functions of WUAs

- This research indicates that WUAs have a dual function. They nurture a common pool regime for resource management at a local level but also provide a mechanism for water demand management. These are potentially conflicting aims and planners and managers need to be aware of the confusion that may result at local level amongst stakeholders as a result of this. Local stakeholder meetings should therefore discuss the precise mandate, roles and responsibilities of the WUA and its limitations. When established, the constitutions and business plans of the WUAs should also be distributed to stakeholders, so they are well informed of the mandate and functions of the WUAs.

- State-driven initiatives, such as the development and implementation of WUAs and CMAs, have built-in problems because these are not grass-roots initiatives. Local stakeholders do not fully understand the State's agenda to devolve aspects of decision making to local level. Power relationships are unequal, both within the local community and between it and other institutions at local, provincial and national level (municipalities, water service providers, DWAF, traditional leaders, etc.). Local stakeholder meetings therefore need to discuss who the dominant players in the WUAs will be, how other local voices will be incorporated (such as traditional leadership) and how the WUAs will relate to other institutions at local, provincial and national levels.

12.2 Clarify the role of traditional leaders in the new water governance framework

- Traditional leaders have an important role to play in WRM in South Africa and should be involved in the development of national water policies and strategies as well as the institutional arrangements established for their implementation. Although their status and influence varies from area to area, they still play an important role in land allocation, and consequently in the management of natural resources, including water. They also play a role in facilitating communication in the community and are frequently consulted to assist in mediation of conflicts. Thus, their involvement in the new WMIs is desirable and necessary. Ongoing research into the roles they could play in these new WMIs is required.

- Although there may be conflicting agendas between the traditional leaders and the State with regard to WRM, further conflict may arise without their consent and understanding of State-driven strategies. In particular, the HOTL has requested that DWAF hold a workshop which will provide an overview of relevant laws, policy and institutions

related to WRM as well as an overview of the opportunities that could arise from the establishment of WUAs. Empowerment of traditional leaders can also assist the establishment and efficient functioning of WUAs as they can help to inform their communities of the governments' rationale for and approaches to WRM.

12.3 Integrate cultural norms and practices into WRM regimes

- Policy makers should investigate and better understand cultural practices and customary laws related to water management in rural communities where they are still practised. These cultural practices and customary laws still play an important role in determining water access, use and conservation in certain rural communities. Thus, when decisions are being made related to water in river courses, belief systems and cultural norms of the communities who utilise this water need to be considered. Although traditional norms and practices surrounding water management may conflict with State initiatives, they need to be recognised by the State so that the communities feel their values are being incorporated into WRM systems.

- DWAF should ensure inclusion of all relevant stakeholders in processes that lead to the establishment of new WMIs in a given catchment area. This is to ensure that cultural values and norms related to water management are incorporated into decision making.

12.4 Enhance links between research and practice

- Various national policies and strategies relevant to WRM are not being considered and implemented at a regional level. It has been argued that these new policies are too technical and scientific. There is therefore a need to focus on the practical implementation of policy in rural areas. A Research and Development Unit should be created within the regional offices to monitor what information is relevant for WRM and distribute that information accordingly. This unit could also provide an important function by informing national policy through research emanating from areas where policies are being implemented.

- There is little evidence that relevant research which has been conducted in the area by various research institutions is being utilised in the WUA establishment process. DWAF should collaborate with universities and other research institutions in the study area, so that research findings and other useful resources developed, are utilised. This collaboration could also provide DWAF with ideas about methods of participation in IWRM that have been used effectively by other WUAs in the Eastern Cape (Farolfi, 2004; Motteux, 2002).

12.5 Strengthen relationship between CMAs and WUAs

- The purpose and functions of WUAs need to be seen within the greater context of their WMA, which is managed by the CMA. It is at this catchment level that all stakeholders can be represented and be involved in integrated planning and decision-making. It would therefore assist these WUAs to have the CMA set up as a parallel process to the establishment of the WUAs. In this way, local representatives from the WUAs could be elected to serve on the CMA at the same time as working with stakeholders at the local level. This would ensure that the stakeholders' needs at a local level are incorporated at the catchment level.

12.6 Enhance public participation and strengthen capacity building efforts

- The WUAs should focus greater attention on the conservation of water sources. There is a need for capacity building in this field in order to minimise the illegal use of this resource. WUAs must also ensure that they embrace current traditional practices some of which enhance conservation ideals.

- There is lack of capacity at the local level to effectively manage water resources through WUAs as required by the NWRS. The use of stakeholder analyses, community needs assessments and skills audits could assist in determining the capacity building needs and skills requirements of resource users and inform the capacity development programme required for a given area. An evaluation strategy to monitor the progress of the WUAs is also required. Table 2 lists capacity building needs that have been identified by the WUAs and should be emphasised from early on in the process of establishing WUAs.

• **Enhance understanding of legislation such as the NWA , NWRS and constitutional rights**
• **Improve understanding of legal water use as outlined in the NWA**
• **Improve financial management and technical skills (e.g. pipe maintenance)**
• **Strengthen capacity of regional departments to implement NWRS**
• **Develop communication and facilitation skills**
• **Build capacity to create business plans**
• **Improve capacity in administration and functioning of the WUA, including water allocation**

Table 2: Capacity building needs

- WUAs need technical assistance and support from DWAF and DoA to build their capacity as listed in Table 2 so that they are able perform their functions and become self-sustaining.

- The public participation processes implemented in areas investigated are inadequate and methods employed are inappropriate for meaningful stakeholder engagement. Information communicated in public participation meetings needs to be made more accessible to participants and there should be more time for questions and discussion. There is also confusion amongst the WUA members with regard to appropriate lines of communication linked to water related issues. A contact list of key people/institutions within the area that are involved in, or could assist with, various aspects of WRM should therefore be provided to relevant stakeholders in the WUAs.

- Leaders in the community, such as church leaders, should be informed and empowered to enhance public participation processes. NGOs and other community groups could be utilised to assist with disseminating information in the community. Workshops should be held prior to formal public participation events so that stakeholders have an understanding of the purpose and functions of WUAs and the processes involved in establishing them. The evaluation strategy used to monitor the progress of the WUAs should also include an evaluation of the effectiveness of the public participation process.

12.7 Promotion of co-operative governance and co-management

- There is a need to strengthen co-operative governance both vertically and horizontally. This will involve improving co-ordination between DWAF regional and national levels but also within the different divisions of DWAF charged with water resources management. Due to the fact that water is so fundamental to economic and social development in rural areas, there is a need to strengthen linkages with other relevant government departments and institutions whose activities rely on, or may affect, WRM at the local level.

- There is a need for DWAF, water users and other stakeholders to work in partnership to manage water resources. Such partnerships need to recognise the respective knowledge systems, capacity, skills and resources of the different stakeholders and develop management arrangements that reflect the different strengths and weaknesses of these groupings. As the capacity of these new WMIs develops, they can take on increasing management responsibilities and decision-making functions. This approach would ensure that these institutions are sustainable in the long term.

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14. APPENDIX 1: Stakeholder overview

Date	Time	Who/event	Affiliation	Venue
27 March	09:30	Mr Bruce Nicoll	FST Consulting	East London
28 March	10:00	Mr Mashudu Murovhi, Mr Konanani Khorommbi, Mr Mzuvukile Tongeni.	DWAF	East London
29 March	10:00	Public Participation Meeting as observers.	DWAF	Zanyokwe village
30 March	10:00	eDikeni Water Users Association meeting	eDikeni WUA	Alice
30 March	11:00	Mrs Pumla Titus	Resource Development Adhocracy	Cintsa
04 May	11:00	Masikhanye WUA interim committee meeting	Masikhanye WUA	Zanyokwe Village
28 May	09:00	Mrs Lisa van Tonder	Rural Support Services	East London
28 May	12:00	Mr Mashudu Murovhi	DWAF	East London
28 May	15:00	House of Traditional Leaders	HOTL	Bisho
29 May	08:30	Mr Galelo Mbambisa	DWAF	East London
29 May	13:00	Mr Mpumalelo Shiza	Water Services Authority	East London

30 May	10:00	Masikhanye Transect exercise	Masikhanye WUA members	Masikhanye WUA area
31 May	10:00	eDikeni Transect exercise	eDikeni WUA members	eDikeni WUA area
01 June	10:00	Masikhanye Workshop	Concerned community individuals	Burnshill
01 June	10:00	eDikeni Workshop	eDikeni WUA committee	Alice
01 June	15:00	Mr Chris Nair	Amatola Water	Burnshill Purification Plant
04 June	08:30	Mr Siegfried Rousseau	Amatola Water	East London
04 June	13:00	Mrs Kate Rowntree	Rhodes University	Grahamstown
04 July	10:00	Mrs Cindy Minkley	WSAU, District Municipality	East London
05 July	10:00	Masikhanye Feedback	Masikhanye community individuals	Burnshill
06 July	10:00	eDikeni Feedback	eDikeni WUA	Alice

Masikhanye public participation meeting 29th March 2007

People interviewed after meeting:

Name	Role
Chieftainess N Gayike	
Maxwell Njokweli	(Chairman) Vukani Lower Zeingcuka Farmers Association
Nomzi Koyana	DWAF National Stakeholder Empowerment Unit
Tony Amankrah	Dept. Agriculture/Research

eDikeni WUA meeting 30th March 2007

Name	Role
Ms Lulama Luvuno	Agricultural extension officer
Mr Thabo Nosemele	Agricultural extension officer
Mr Walter Vandala	WUA chairman/farmer at Somgxaxa farm
Ms Nokuphumla Mnguni	Mazotshweni Project (Farmer/Committee member)
Mr Sommso	Farmer/Committee member
Gro Haram	University of Cape Town
Richard Hasler	University of Cape Town
Sarshen Marais	University of Cape Town
Mr Mashudu Murovhi	DWAF – Eastern Cape

Masikhanye Interim Committee meeting 4th April 2007

Name	Role
Mr Mandlomzi Adonisi	Chairman
Mr X. Mpangesi	Zanyokwe Irrigation Scheme
Mr M. Gege	Agricultural Office
Mr D.S. Dubasi	Agricultural Office, Middledrift area
Mr Z. Matinisa	Dept. Agriculture
Mr P.N. Ligwa	Zanyokwe Irrigation Scheme
Mr M.M. Njo	Interim Member
Mr T.R. Nonkeuse	Interim Member
Mr F. Mflupu	Ward Committee
Mr N.V. Mekke	Interim Member
Mr S. Masingaraza	Interim Member
Mr Derek Pollard	University of Cape Town
Mr Zoti Gantsho	Interim Member
Mr D. Mdledle	Interim Member
Mr H. Jola	Interim Member

Masikhanye Transect exercise 30th May 2007

Name	Role
Mandlomzi Adonisi	WUA Interim Committee Chairman
Mr Thuswa	Burnshill Headman
Mr Sloni Kalewe	Burnshill Farmer
Other WUA members	(details not recorded)
Sarshen Marais	University of Cape Town
Gro Haram	University of Cape Town
Farai Kapfudzaruwa	University of Cape Town
Derek Pollard	University of Cape Town
Mduduzi Zungu	University of Cape Town/ interpreter

eDikeni Transect exercise 31st May 2007

Name	Role
Ms Lulama Luvuno	Agricultural extension officer
Mr Thabo Nosemele	Agricultural extension officer
Mr Jwambi	Farmer
Mr Sommso	Farmer/Committee member
Ms Sarshen Marais	University of Cape Town
Ms Gro Haram	University of Cape Town
Mr Farai Kapfudzaruwa	University of Cape Town

Mr Derek Pollard	University of Cape Town
Prof Merle Sowman	University of Cape Town
Mr Mduduzi Zungu	University of Cape Town/interpreter

Masikhanye Workshop 1st June 2007

Name	**Role**
Ms Zanele	Agricultural Extension Officer
Ms Thabeka Nciza	Ward Councillor Secretary (Burnshill)
Mr Cyprian Nciza	Ward Commmitte Member (Burnshill)
Mr Tshaka Mbulelo	Ward Commmitte Member (Burnshill)
Mr Skritshi	Masikhanye WUA Interim Committee Member
Not recorded	Zionist Priest/General Water User
Not recorded	General Water User
Not recorded	Burnshill Farmer
Mr Derek Pollard	University of Cape Town
Mr Farai Kapfudzaruwa	University of Cape Town
Prof Merle Sowman	University of Cape Town

eDikeni Workshop 1st June 2007

Name	Role
Mr Thabo Nosemele	Agricultural extension officer
Mr Walter Vandala	WUA chairman/farmer at Somgxaxa farm
Ms Sarshen Marais	University of Cape Town
Ms Gro Haram	University of Cape Town
Mr Mduduzi Zungu	University of Cape Town/Interpreter
Ms Zandile Selem	Msobomvu Youth Project
Ms N. Vara	Masipakame Project
Ms Nomawethu Zeni	Mavuso Project
Ms Nokuphumla Mnguni	Mazotshweni Project (Farmer/Committee member)
Mr R.A. Nqabeni	Phakamani Mazathso Project
Mr H. Sommso	Committee member/Upper Nceca Project
Mr M. Mabandua	Mazotshweni Project
Ms V.S. Prence	Zukanye Project
Ms T. M. Rawula	Msobomvu Youth Project

eDikeni feedback session 6th July 2007

Name	Role
Mzwabantu Stemele	Agri Tourism
H. Somviso	Upper Ncera agriculture co-op
L.C. Pinda	Mamziyitwa agriculture project
Rachael Thqabeni	
Mqukeen Rawula	Zukhanye projects
S.L. Yulsulula	Silwinellala projects
Mrs M.E. Daiman	Zukhanye community garden project
C.C. Kana	Dept. of Agriculture
T. Tsewu	Gqumahashe project
N. Vara	Msobomvu youth project
T. Nofemele	Dept. of Agriculture
D.D. Xoxo	DWAF regional
Sarshen Marais	University of Cape Town
Farai Kafudzaruwa	University of Cape Town
Derek Pollard	University of Cape Town

Masikhanye feedback session 6th July 2007

Name	Role
Mandlomzi Adonisi	WUA Interim Committee Chairman
Mr Thuswa	Burnshill Headman
Mr Sloni Kalewe	Farmer
Thabeka Nciza	Ward Councillor Secretary (Burnshill)
Cyprian Nciza	Ward Commmitte Member (Burnshill)
Not recorded	Chieftainess Gayika's Secretary
Not recorded	Farmer
Not recorded	Farmer
Mr Derek Pollard	University of Cape Town
Mr Farai Kapfudzaruwa	University of Cape Town
Ms Sarshen Marais	University of Cape Town

15. APPENDIX 2: Workshop reports

Workshop with eDikeni WUA committee and other water users

Date: 01 June 2007
Location: DoA and Land Affairs, Alice
Time: 10 am -2 pm
Attendees: see Appendix 1

Aims

The rationale for the workshop was to meet with the WUA committee members and to:

1. Identify the following on a map:

- History of the area;
- Land use activities;
- Land ownership and rights (State vs. communal and private property);
- Water sources (rivers, dams, wells, springs);
- Water infrastructure (dams, treatment works, pipes, taps);
- Access points to water sources;
- Points of cultural importance and where cultural or religious practices occur;
- Problems or issues at access points; identify what is required to improve or resolve these;
- Identify informal rules and behaviour associated with everyday use of and access to water.

2. Understand decision-making processes and power relations in terms of access to, use and management of land and water resources;

3. Understand the establishment and implementation process of WUAs in relation to the following themes:

- Institutional and structural issues;
- Representation within WUAs of stakeholders;
- Stakeholder engagement and public participation;
- Influence of religious and cultural practices related to water;
- Capacity building for effective management of WUAs;
- Communication networks

Limitations and opportunities

The workshop was scheduled to coincide with the monthly WUA meeting held in Alice, which was meant to include water users as well as the committee; this is because the WUA is in the process of electing a new board. Due to a national civil servant strike, the WUA meeting scheduled for that day was cancelled. We therefore had to rely on interacting with those who arrived and were willing to attend. The inclusion of other water users besides committee members, however, proved to be very helpful in identifying different land and water uses in the area.

Objectives

- Understand the issues related to access, ownership and use of land and water;
- Identify the communication channels between WUAs and water users in the communities;
- Identify and assess the communication mechanisms between WUAs and stakeholders;
- Identify and asses how stakeholders are represented in the WUA;
- Identify the customary rules governing the use and management of water resources;
- Understand whether these informal rules, cultural and religious practices are relevant, acknowledged and utilised in the functioning of the WUA;
- Identify and assess the capacity development effort in the WUA;
- Understand any challenges in the setting up and functioning of the WUA;
- Identify recommendations for an improved establishment process.

Methodology of the workshop

- Explanation of the project, aims and objectives to the participants;
- Presented map and explained themes to be identified (see methodology);
- Participants gave information and this was documented on the map by the researchers;
- Presentation of establishment process of WUA; asked questions related to each step of the process;
- Participants explained communication flow (Figure 23) between stakeholders. (The method is explained in methodology section).

Production of a flowchart

We presented the committee with a flowchart (Figure 17) of the establishment process as found in the NWA and asked them to verify whether this model was used in the establishment of their WUA.

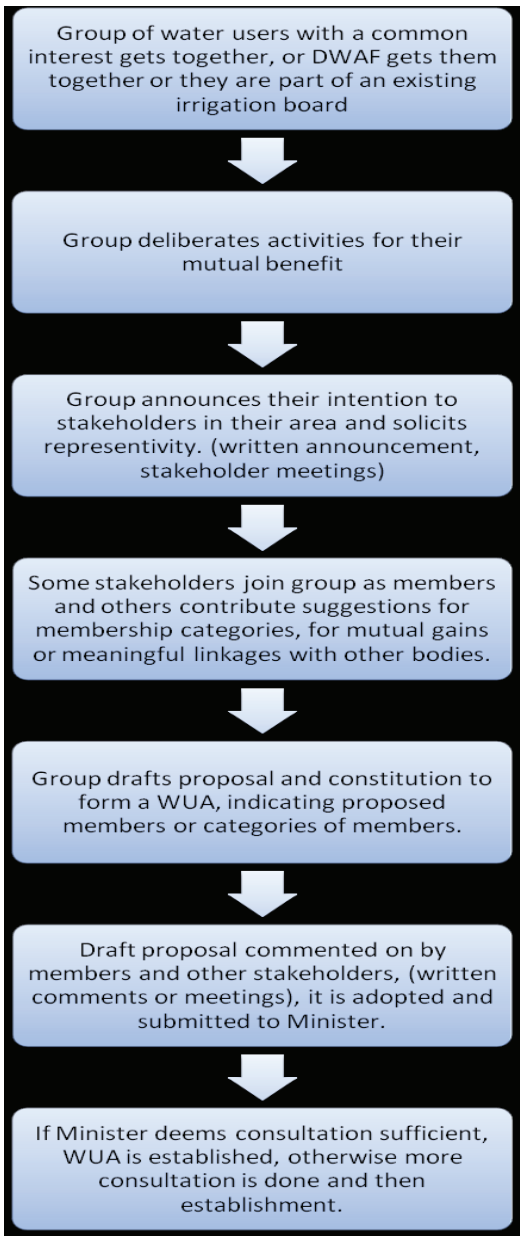

Figure 17: Flowchart, WUA establishment process Source: DWAF (2001a)

We then asked the following questions to understand the establishment process for that particular WUA:

1. Initiation of the WUA

- Did the group get together with a common interest, or did DWAF get them together or were they an existing irrigation board? Do any other water user groups exist in the community?
- How long has the group been established?
- If DWAF initiated the establishment, how did stakeholder identification occur? Was there a public participation process at this stage? Who was then chosen to represent stakeholders and how was this person chosen? Were women and marginalised people included?
- What capacity building was done at this stage?

2. Activities of mutual benefit

    - What are the activities they saw for mutual benefit?
    - What are the functions of the WUA?
    - What are the incentives to be part of the WUA? Who provides the incentives?

3. Water user group announces itself

    - How were stakeholders identified at this stage?
    - Who are the primary stakeholders?
    - Who selects representatives or how are they elected?
    - Who should play a role in the WUA and why?

4. Some become members and some contribute with suggestions

    - Why do some join and others not?

5. Linkages with other bodies created

    - How do the different institutions relate to each other (WUAs, DWAF, etc.)?
    - Do they understand the roles of all the organisations involved, how to contact them and within what context? Is this process efficient and how can it be improved?
    - How and by whom are linkages with other institutions made?

6. Group drafts a proposal

    - What public participation process occurs here and how is input gathered

from other stakeholders?
- What capacity building is given at this stage in terms of support and training by DWAF and outside consultants?

7. Group drafts a Constitution

    - What public participation process occurs here and how is input gathered from other stakeholders?
    - What capacity building is given at this stage in support and training by DWAF and outside consultants?
    - How is information from these capacity builders communicated back to the community?
    - How are any conflict issues dealt with and by whom?

8. Minister approves Constitution

    - Is public participation sufficient at this stage? If not what can be done to improve this process?

9. Election of the WUA board

    - How is the election conducted, and how do they further engage stakeholders and incentivise people to want to be part of the WUA board?
    - Who decides who becomes a representative?
    - How do they engage users in other sectors apart from farmers?
    - How does communication flow between community, WUA and DWAF in this process?
    - What capacity is given prior to this process and is there an understanding of the importance of equal representivity?

Findings

See map (Figure 21) for the following:

- Land use and water access
- Land rights and ownership

History of the WUA

- WUA initiated by the chairman, Mr Vandala, with the help of agricultural extension officers. Some vegetable, poultry and livestock farmers formed a group in order to be able to apply for water use licenses from DWAF.
- Seven chiefs in the area were approached for permission to initiate WUA.
- Dale Cobban from DWAF came to the group to explain to them how to form a WUA.

Public participation

- Traditional leaders and ward councillors informed the villages of the public participation meetings and are important in the process.
- The initial meetings had a good turn-out and water users from other sectors than agriculture attended. There has however been a steady decline in attendance. It was argued that not enough results are seen and the establishment process has taken too long.
- Five of the committee members have left the interim committee for the same reason as above.
- Some water users said they would become a member at the first meeting but have not attended any meetings since.
- Stakeholder engagement is being improved and extended for the election of the governing board.
- Agricultural extension officers have been told to go to each of the projects to ensure representation of all agricultural stakeholders for election.
- Committee feels that before election, stakeholders from all sectors must be represented.

Capacity building and training

The committee felt there was need for much more capacity building. They mentioned a need for the following:

- Administration, functioning and roles of members in the WUA;
- An understanding of legislation and rights in order to have power;
- An understanding of illegal water use and means to enforce the law;
- Financial management and creation of business plans;
- Technical skills to maintain pipes, etc.;
- Communication training.

Communication flow (Figure 23)

- Some communication links were weak or non-existent. It was felt that communication with DWAF, DoA and WSAUs needed improvement.
- Communication with the traditional leaders in this area is good.
- Ward councillors generally did not respond to issues raised.
- Agricultural extension officers provide good communication links but struggle to get response from DWAF and WSPs.
- The WUA does not know whom to talk to in the WSAU.

Representivity

- Other sectors should form bodies to have a representative in the WUA.
- Consider the WUA to be for all water users, not just those involved in the irrigation scheme, and highlighted the importance of including other sectors in the WUA.
- Not much was discussed with regard to the role of women in water management, but they were well represented in the workshop (6 women/5 men).
- Mostly women worked on the projects, and so it was argued that this would ensure gender representivity.
- It was felt by the group that there was gender equality.
- If a woman wishes to be involved, she will have the opportunity to do so.

The role of traditional leadership

- Traditional leaders participated in the public participation process.
- They needed to be consulted for the establishment process but did not play a big part thereafter.
- The group would have liked to see more involvement from traditional leaders in the WUA.

Incentives and functions of the WUA

- Only way to get a license for water use;
- DWAF has subsidies once the WUA creates a business plan;
- Easier access to water: Taps to households and irrigation water;
- Wish to be identified as a group, as they are more likely to be heard by ward councillors, etc.
- Easier to discuss matters within a group;
- To have access to information on water use in the area;
- Job creation, poverty alleviation, and food security;
- Farmers have a representative so they don't all have to attend each meeting;
- Identify illegal users;
- Get funding (also outside of DWAF);
- Get training and develop skills.

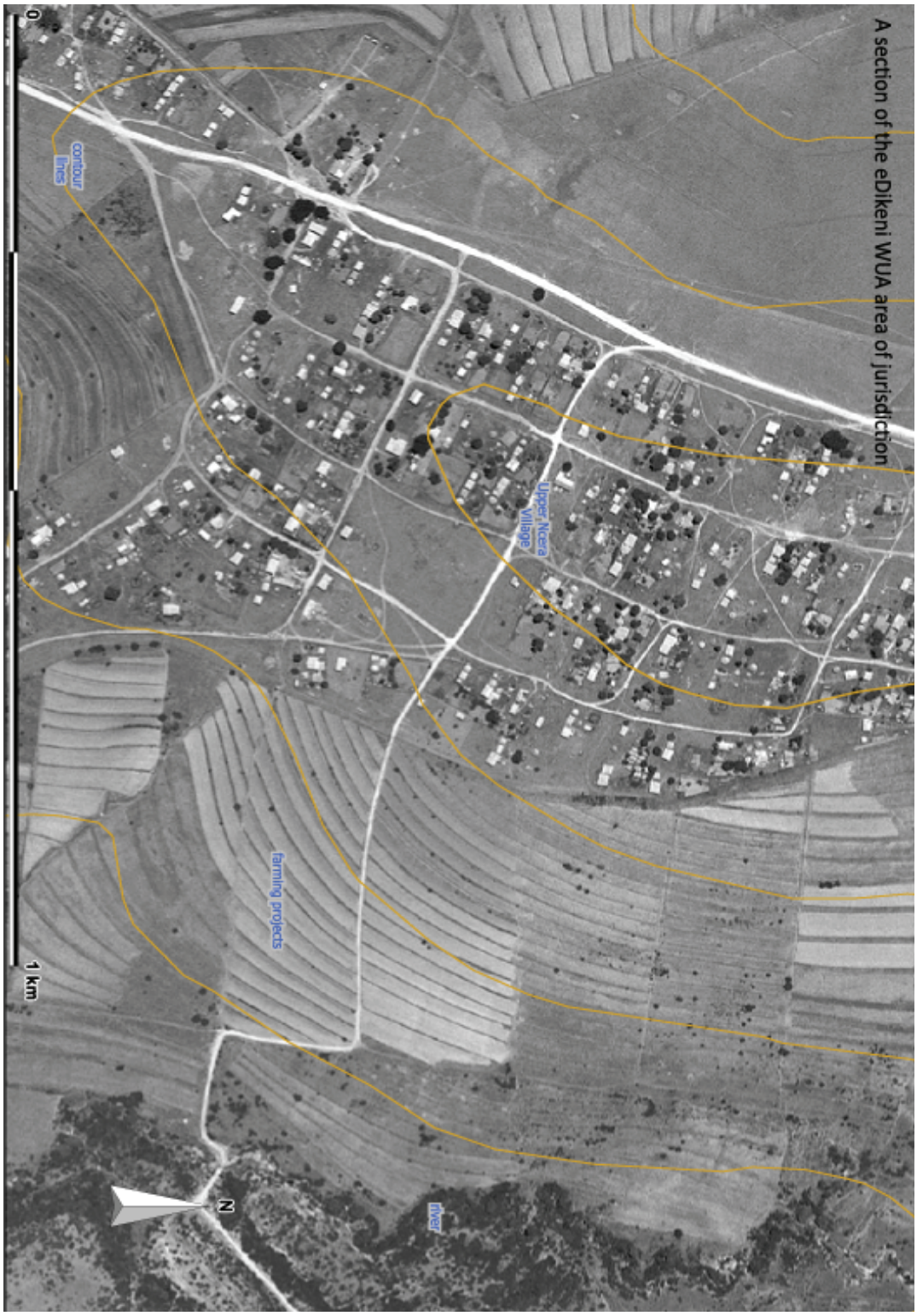

Figure 18: Map of section of the iDikeni WUA area of jurisdiction

Transect exercise eDikeni WUA jurisdiction area
Date: 31.05.2007

Time: 10am-3pm

Attendees: See Appendix 1

Aims

The rationale for the workshop was to meet with water users in the WUA area of jurisdiction and carry out the following activities:

1. Identify the following on a map (Figure 21):

- History of the area;
- Land use activities;
- Land ownership and rights (State vs. communal and private property);
- Water sources (rivers, dams, wells, springs);
- Water infrastructure (dams, treatment works, pipes, taps);
- Access points to water sources;
- Points of cultural importance and where cultural practices and religious practices occur;
- Problems or issues at access points and identify what is required to improve or resolve these;
- Identify informal rules and behaviour associated with everyday use of and access to water.

2. Understand the decision-making process and power relations in terms of access to, use and management of land and water resources.

3. Understand the following with regard to WUAs and water users:

- Representation within WUAs of stakeholders
- Stakeholder engagement and public participation;
- Influence of religious and cultural practices related to water;
- Capacity building;
- Communication networks.

Objectives

- Understand the issues related to access, ownership and use of land and water;
- Identify the communication channels between WUAs and water users in the communities;
- Identify and assess the communication mechanisms between WUAs and stakeholders;
- Identify and assess how stakeholders are represented in the WUA;
- Identify the customary rules governing the use and management of water resources;
- Understand the informal rules, cultural and religious practices with regard to water;
- Identify and assess the capacity requirements for effective membership of the WUA;
- Understand any challenges in the setting up and functioning of the WUA.

Methodology of the workshop (see methodology section)

Our group and an interpreter met with agricultural extension officers Thabo and Lulama at the DoA and Land Affairs office in Alice and drove with them to Upper Ncera. Here we met with a farmer (Mr Jwambo), at his house. He showed us where he accessed water for domestic purposes and then took us to his farmland and showed us important water sources for irrigation purposes in the area.

We then drove to Binfield Park Dam, the largest infrastructure in the area. Here we were shown other farming projects along the dam. The transect exercise ended with a tour of the treatment works where we learnt who controls the distribution of treated and raw water to villages and farms below the dam.

We then drove back to the Department of Land Affairs where we had lunch, after which we intended to visit other farms/projects, but the farmers were unfortunately not available at this time. We instead decided to look at the map and discussed matters further below.

Findings

Matters that were discussed were as follows**:**

See Figure 21 for the following:

- Land use and water access
- Land rights and ownership
- Cultural practices and informal rules associated with access to and use of water.

Communication flow (Figure 23)

- DWAF is not sufficiently engaging stakeholders. It has primarily been left to agricultural extension officers, whose job it is only to inform the agricultural sector.
- Representatives on SANCO committees from the villages meet with councillors to discuss any village matters, including water issues.
- Improved communication when the ward councillor is present.
- It is not expected of the traditional leader to attend meetings but they can send a representative.
- There is never feedback from the traditional leaders through the representative on water issues.

Representivity

- It is felt that farmers should group together and elect a representative for the WUA.
- Women in the area are seen by some as lazy (this was also pointed out by a woman -Lulama). They no longer want to fetch water; they want men to do it so they don't hurt their backs.
- Because agricultural extension officers are most involved with stakeholder engagement, it is known that the agricultural sector will have stronger representation.
- An agricultural extension officer did however note that if approached by other sectors, she would happily help them join the WUA.

Capacity building and training

- DWAF should provide training in the allocation of water in the WUA.
- DoA is training farmers through the agricultural extension officers on vegetable production, land preparation and bookkeeping for financial reporting.
- It is felt that information in the PP meetings is insufficient. The agricultural extension officers feel they constantly have to re-educate about the functions of

the WUA.

Public participation

- DWAF is not sufficiently engaging stakeholders. It has primarily been left to agricultural extension officers, whose job is only to inform the agricultural sector.

Conservation

- There is illegal taking of water from communal taps.
- There is no mechanism in place for the billing of water use, which leads to the irresponsible use of water.

Incentives and functions of the WUA

- WUA wants to see the irrigation schemes running effectively, but it is felt that this has taken too long.
- Control of illegal use of water.
- Water users can be part of a group, together with the agricultural sector.
- Only way to get a license for water use.
- There is uncertainty with regards to the role and functions of the WUA.

Cooperative governance

- It is felt that DWAF and DoA need to decide on the role and functions of the WUA and what role each department plays in this process.

Traditional leadership

- Traditional leaders are primarily involved in land allocation and permission to occupy (PTO); they do not play a major role in water allocation.

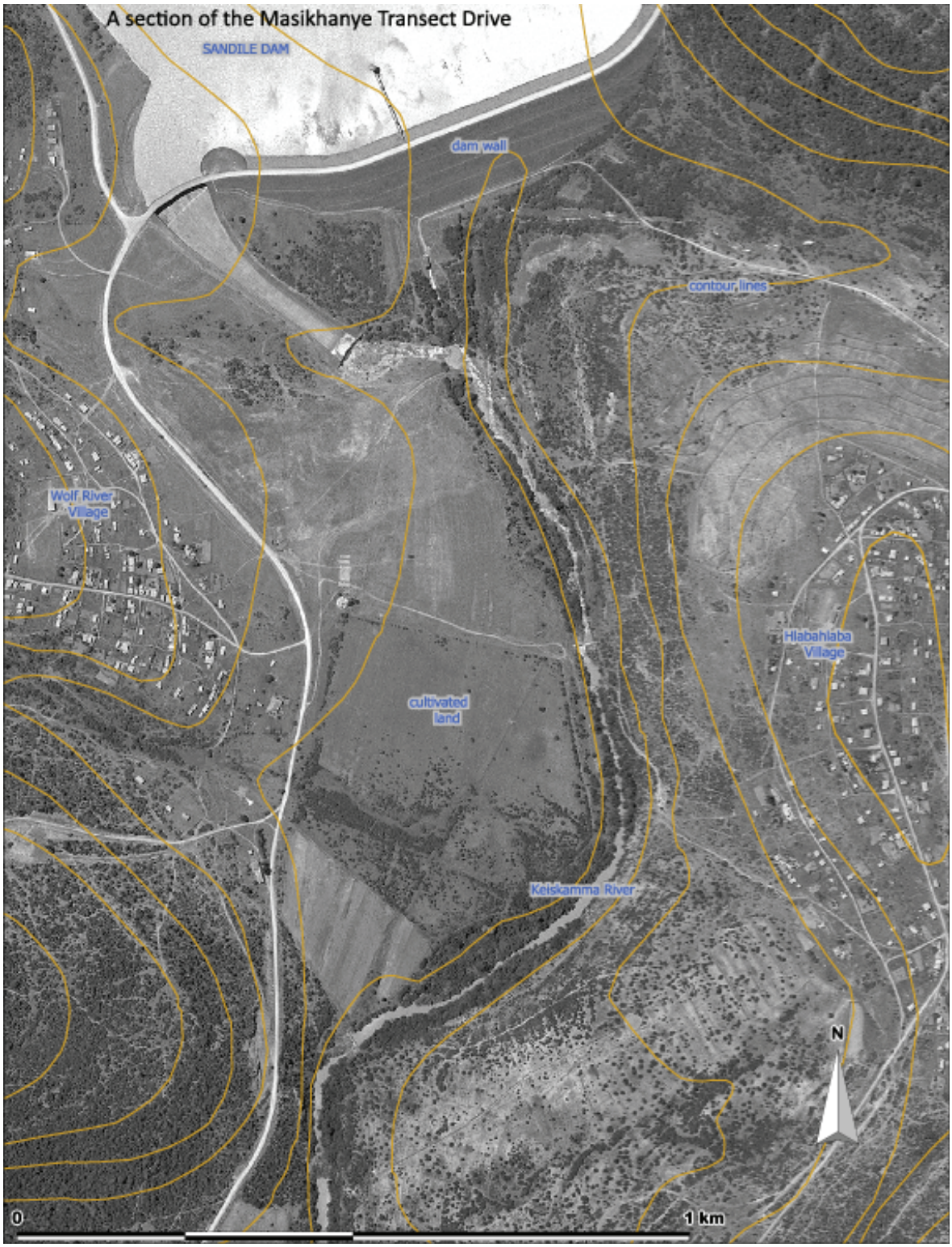

Figure 19: Map of section of the Masikhanye transect exercise

Transect exercise Masikhanye WUA jurisdiction area
Date: 30.05.2007

Attendees: See Appendix 1

Aims

The rationale for the workshop was to meet with water users in the WUA area of jurisdiction and:

1. Identify the following on a map (Figure 22):

- History of the area;
- Land use activities;
- Land ownership and rights (State vs. communal and private property);
- Water sources (rivers, dams, wells, springs);
- Water infrastructure (dams, treatment works, pipes, taps);
- Access points to water sources;
- Points of cultural importance and where cultural practices and religious practices occur;
- Problems or issues at access points; identify what is required to improve or resolve these;
- Identify informal rules and behaviour associated with everyday use of and access to water.

2. Understand decision-making processes and power relations in terms of access to, use and management of land and water resources;

3. Understand the following with regard to WUAs and water users:

- Representation within WUAs of stakeholders;
- Stakeholder engagement and public participation;
- Influence of religious and cultural practices related to water;
- Capacity building;
- Communication networks.

Objectives

- Understand the issues related to access, ownership and use of land and water;
- Identify the communication channels between WUAs and water users in the communities;
- Identify and assess the communication mechanisms between WUAs and stakeholders;
- Identify and assess how stakeholders are represented in the WUA;
- Identify the customary rules governing the use and management of water resources;
- Understand the informal rules, cultural and religious practices with regard to water;
- Identify and assess the capacity requirements for effective membership of the WUA;
- Understand any challenges in the setting up and functioning of the WUA.

Methodology

- Arrived at a meeting point with certain water users in the area, including the WUA Chairman, a Headman, and farmers.
- Introduced ourselves as well as the project and its objectives.
- Using a prepared map of the area we identified sites that we thought important to visit as well as sites they thought were of importance.
- Sites we visited along the drive were as follows:
    - Sandile Dam
    - Sandile Dam Pump
    - A site traditionally used for baptisms in the river
    - Privately owned and communally owned land
    - Forest area
    - Reservoirs
    - Purification plant

Lunch was consumed at one of the reservoirs and the transect exercise ended after we toured the purification plant.

Findings

Matters that were discussed were as follows**:**

See Figure 22 for the following:

- Land use and water access
- Land rights and ownership

Communication flow (Figure 23)

- Farmers are not sure whom to approach when they have problems on their farmland regarding water infrastructure.
- In some villages, information does not always get distributed to the whole community, but select groups only.
- DWAF has been the main driver in setting up the WUA, and so at present it is the main line of communication with the community.
- The ward councillors need to communicate with the villages more often and make themselves accessible to being contacted.

Representivity

- Farmers feel that the WUA should be for farmers only at the moment. Only when it has developed into a functioning body, should other water users be incorporated onto the committee.
- Other water users feel that they do not have any authority to whom they can report their water issues and needs, as they see the WUA being dominated by farmers.
- Considering that no women were present, it was suggested that women do not want to be part of these committees as 'they are lazy'.
- Generally, it was felt that the election process onto the WUA committee needs to involve the whole community so that representatives can be accountable for water issues.

Capacity building and training

- DWAF is responsible for building skills required for the WUA to function properly.
- DoA has been developing farming skills but farmers still feel they need more skills, especially to fix broken infrastructure on their farms, as this has been the main hindrance to water access for the land.

Public participation

- DWAF has held a few PP meetings but many people leave these meetings not fully understanding the concept and reasons for implementing a WUA.
- Farmers have been the main focus of inclusion in this WUA and it is felt that other water users also need to be included.

Conservation

- Forests that are easily accessible to communities are being cut down slowly so people can have a source of fuel.
- Alien vegetation is taking over in a lot of areas causing a loss in grazing areas for cattle.

Incentives and functions of the WUA

- It was felt by some of the farmers that the WUA should initially only include the farmers. Once it becomes fully functional, other water users will see its success and then all water users can be included. The functions are generally not clear.
- Farmers have joined the WUA to gain the benefits of skills training; working together and sharing resources; as well as using the WUA water license to access water.
- WUA committee members get skills training.
- The WUA can be used as a communication medium through which their water needs and irrigation problems can be addressed.

Cooperative governance

- DWAF, DoA and the local municipality need to specify which water and irrigation pipes they are responsible for, so that the correct authorities can be contacted when problems arise.

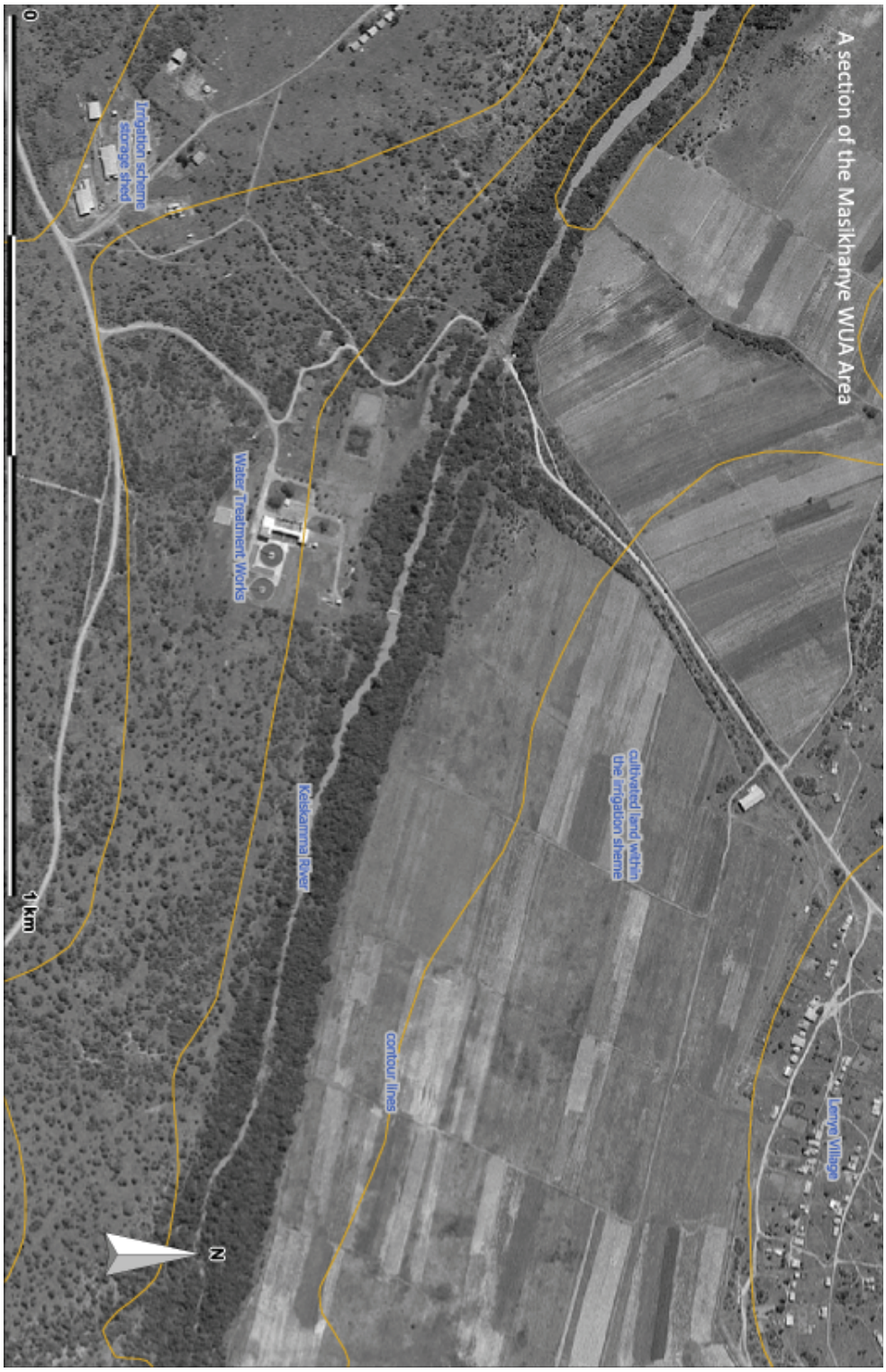

Figure 20: Map of section of the Masikhanye WUA area of jurisdiction

Masikhanye WUA workshop

Date: 01 June 2007

Location: Burnshill Village

Time: 10am -12pm

Participants: See Appendix 1

Aims

The rationale for the workshop was to meet with the WUA committee members and to:

1. Identify the following on a map (Figure 22):

- History of the area;
- Land use activities;
- Land ownership and rights (State vs. communal and private property);
- Water sources (rivers, dams, wells, springs);
- Water infrastructure (dams, treatment works, pipes, taps);
- Access points to water sources;
- Points of cultural importance and where cultural practices and religious practices occur;
- Problems or issues at access points; identify what is required to improve or resolve these;
- Identify informal rules and behaviour associated with everyday use of and access to water.

2. Understand decision-making processes and power relations in terms of access to, use and management of land and water resources;

3. Understand the establishment and implementation process of WUAs in relation to the following themes:

- Institutional and structural issues;
- Representation within WUAs of stakeholders;
- Stakeholder engagement and public participation;
- Influence of religious and cultural practices related to water;
- Capacity building for effective management of WUAs;
- Communication networks.

Limitations and opportunities

The participants who attended the workshop were not members of the interim committee of the WUA because there was a national civil service strike. Therefore, the interim committee members cancelled the scheduled meeting. The participants were general water users and council representatives; hence, the establishment process of the WUA was not discussed in full. Nonetheless, we were able to gather valuable information from these participants.

Objectives

- Understand the issues related to access, ownership and use of land and water;
- Identify the communication channels between WUA and water users in the community;
- Identify and assess the communication mechanisms between WUA and key stakeholders;
- Identify and assess how stakeholders are represented in the WUA;
- Identify the customary rules governing the use and management of water resources;
- Understand whether these informal rules, cultural and religious practices are relevant, acknowledged and utilized in the functioning of the WUA;
- Identify and assess the capacity development in the WUA;
- Understand any challenges in the setting up and functioning of the WUA;
- Identify recommendations for an improved establishment process of the WUA.

Methodology

- Explanation of the project aims and objectives in general to participants;
- Explained objectives of workshop;
- Presented map and explained issues to be discussed; (see methodology)
- Participants gave feedback on issues and questions presented to them and researchers documented responses on the map;
- Initiated a discussion on the process of establishing and functioning of a WUA with participants.
- The communication flow was not presented in this workshop, but in a feedback session on the 6th July 2007. The communication flow provided the same results

as the eDikeni workshop (Figure 23).

Production of a flowchart

We presented the committee with a flowchart of the establishment process as found in the NWA and asked them to verify whether this model was used in the establishment of their WUA. See eDikeni Workshop data in this section for the flowchart and questions asked.

Findings

See map (Figure 22) for the following:

- Land use and water access
- Land rights and ownership
- Cultural practices and informal rules associated with access to and use of water.

Land use and water access

- Most of the land in the area is privately owned but this does not affect access to water points for cattle and the general public because there are access routes to these water points.
- Generally, the land is used for agriculture and animal husbandry.

Cultural practices and informal rules associated with water

- Cultural practices and informal rules associated with water are still practised in the area but they are not prevalent.
- There are different parts along the Keiskamma River and other rivers where baptisms by Zionists and initiation ceremonies are still practised.
- There are no specific sites which have to be protected which are reserved for baptism and initiation.

Communication flow (Figure 23)

- People still need more information from DWAF on the purpose and functionality of the WUAs.

- The information dissemination methods to communities need to be improved, for example, announcing meetings through church leaders.
- The mechanism of feedback from village representatives on the WUA committee to the villages seems weak in some villages.
- There is also lack of clarity in the communities on accountability, for example, where to report water problems.

Representivity

- There is a strong feeling and perception in the community that WUAs are meant for farmers.
- The community feels they could be represented in the WUA by different bodies such as churches.
- There is need for a more transparent election process for the representatives in WUAs.

Incentives

- Most of the people hope that WUAs will assist in supplying water infrastructure for supplying water to their households and backyard irrigation plots.
- WUA will go a long way in curbing the problem of illegal connections to community taps.

Capacity building

The participants felt that they critically needed capacity development in the following:

- Setting up the WUA;
- Carrying out its functions such as allocation and distribution of water.

Traditional governance

- The traditional leaders still had influence in the communities, but their power was restricted.
- Traditional leaders were usually more influential in land allocation in collaboration with councillors.

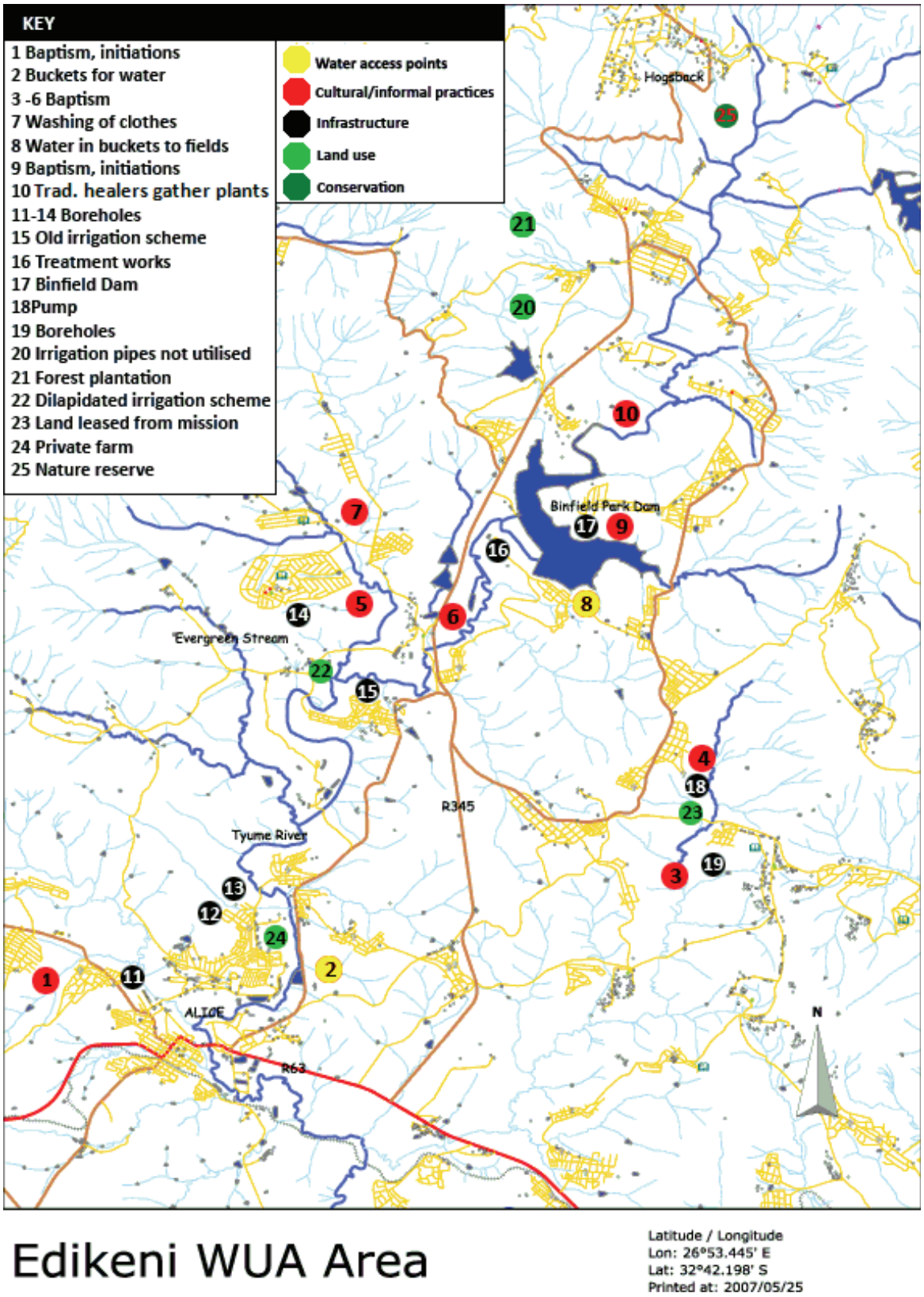

Figure 21: Map of eDikeni transect drive/workshop findings

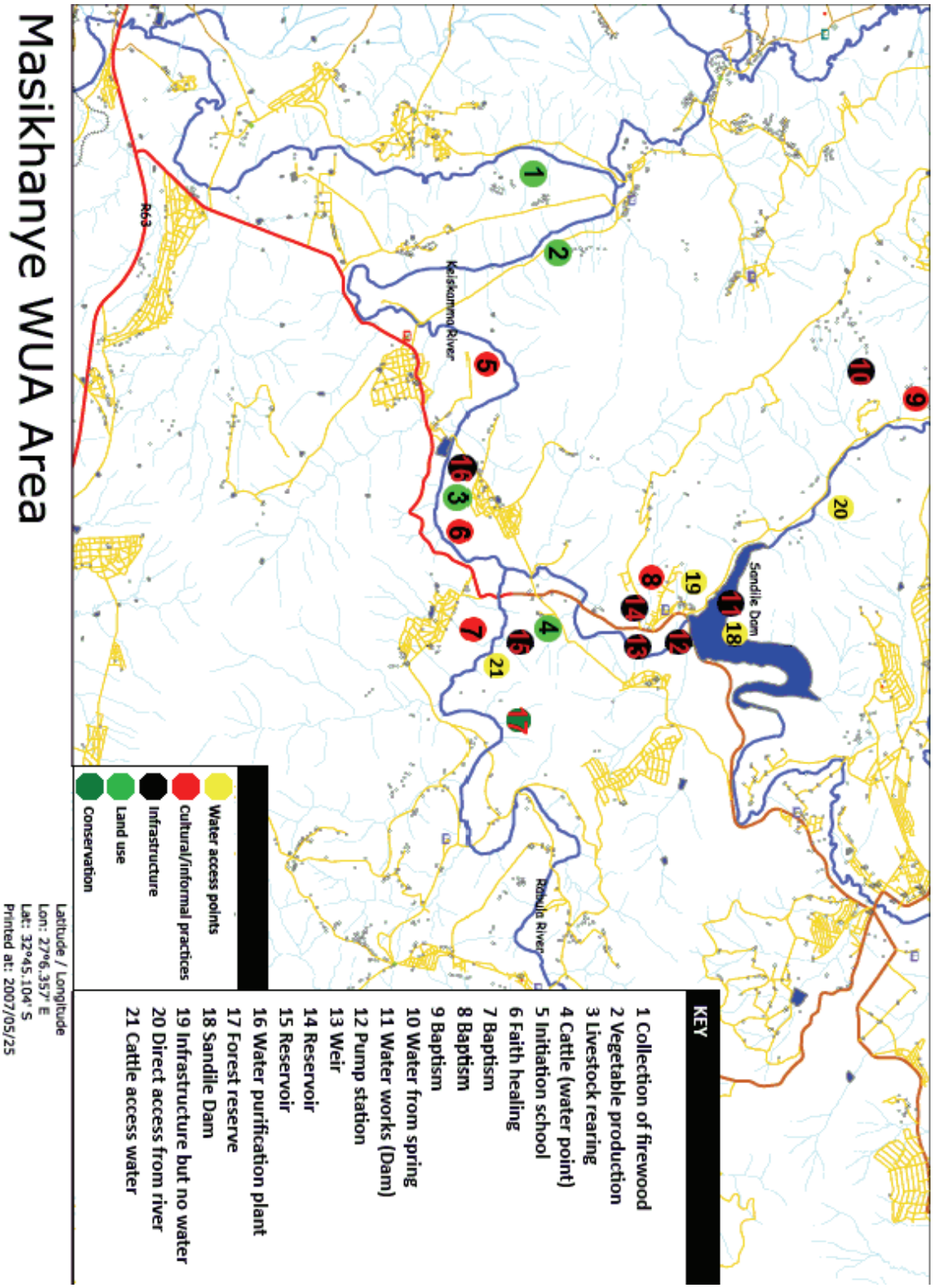

Figure 22: Map of Masikhanye workshop/transect exercise findings

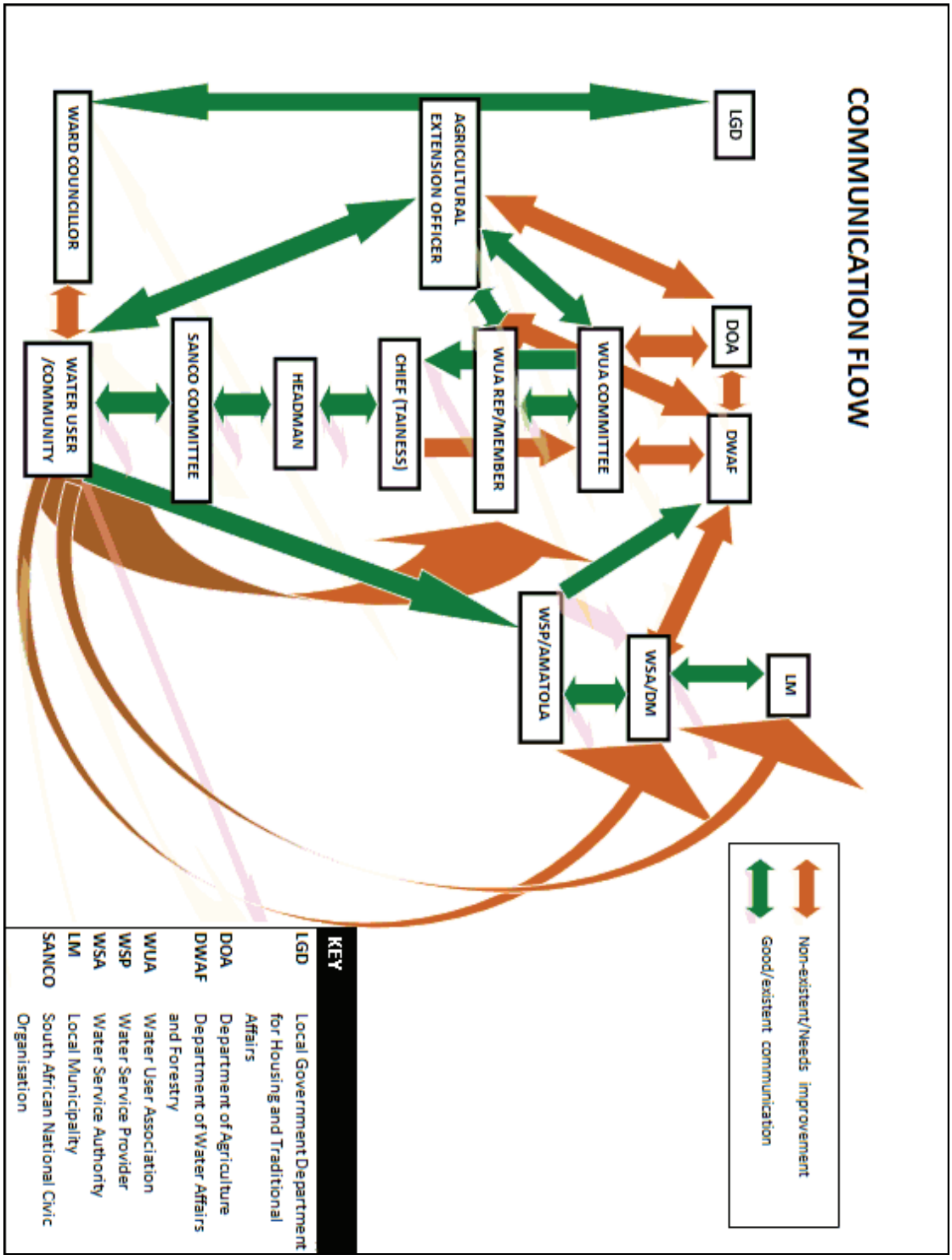

Figure 23: Communication flow

16. APPENDIX 3: Stakeholders interviewed

Name	Affiliation
(HOTL)	House of traditional leaders
Allan Alshlager (AA)	Local Municipality – Engineering and water works
Bruce Nicoll (BN)	Consultant, FST Engineering Consultancy
Chieftainess Gayika (CG)	Chieftainess of Burnshill
Chris Nier (CN)	Amatola Water Board – treatment works
Cindy Minkley (CM)	Amathole District Municipality – Deputy Director of Operations
Dale Cobban, (Zanyokwe workshop) (DC)	DWAF Regional – Eastern Cape
Field observations (FO)	Findings from water users and WUA
Jim Armstrong (JA)	DoA – Eastern Cape (Area of WUA)
Khonanani Khrommbi (KK)	DWAF National – WMI
Mashudu Murovhi (MM)	DWAF Regional – Eastern Cape
Max Fihla – (Zanyokwe workshop) (MF)	DoA
Maxwell Njokweli (MN)	Interim Committee member -Masikhanye
Mpumelelo Shezi (MS)	Water Services Authority (Amathole District Municipality)
Mr Adonisi (A)	Chairperson – Masikhanye WUA
Nomzi Koyana (NK)	DWAF National – Stakeholder Empowerment
Professor Kate Rowntree (KR)	Geography Department, Rhodes University
Pumla Titus (PT)	Consultant for Resource Development

Rural Support Services (RSS)	NGO – water and sanitation
Sieg Rousseau (SR)	Amatola Water Board
WSAU: Galelo Mbambisa (GM)	DWAF National – Water Services Director