A SITUATIONAL ANALYSIS ON THE PUBLIC PARTICIPATION PROCESSES IN INTEGRATED WATER RESOURCES MANAGEMENT IN THE KAT RIVER VALLEY, EASTERN CAPE, SOUTH AFRICA

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ABSTRACT

Public participation in water management processes is one of the internationally recognised and adopted principles of Integrated Water Resource Management. The South African Department of Water Affairs and Forestry aims to facilitate the decentralisation of water management powers to the local community level via the establishment of regional and local water management institutions, namely Catchment Management Agencies, Water User Associations and Catchment Forums. The National Water Act (No. 36 of 1998) acknowledges that the discriminatory laws and practices of the past have prevented equal access to water and the use of water resources. The contribution of water management institutions to social and economic development, in particular poverty eradication and food security, is mentioned in the water act. The participation of poor rural communities living in the Kat valley, an area where an elite minority reap the benefits of water use for agriculture, is the focus of this research. Their participation, perceptions and experiences are documented and explored to determine how the promulgation of post-apartheid water policy and legislation has affected their access to water.

The results of this research are based on data collected from several methods including surveys, workshops and observation. Analysis of these data revealed the complicated and stagnant nature of participation from Kat valley rural communities in local water management initiatives and organisations. Existing water management organisations were not successful in stimulating poor people's participation as they were unable to address their primary concerns, namely a secure source of potable water, employment and access to water for agricultural purposes. This thesis asserts that the Department of Water Affairs and Forestry, as the custodian of South Africa's water resources, has not taken on a supportive, accountable role in assisting marginalised communities with improving their access to water for domestic purposes and securing access to water rights for productive use. This, in turn, has led to dissatisfaction among these communities and a wariness of participatory activities that focus mainly on raising environmental awareness. The establishment of effective accountability relationships among all stakeholders, pro-poor water management structures and initiatives, as well as integrated and co-operative management of natural resources, are needed to revitalise the present participation of poor communities living in rural areas.

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ACRONYMS

ABET	Adult Basic Education Training
AIDS	Acquired Immune Deficiency Syndrome
CF	Catchment Forum
CMA	Catchment Management Agency
CMP	Catchment Management Plan
CMS	Catchment Management Strategy
ULIMCOR	Ciskei Agricultural Corporation
COSI	Community Self Improvement
CSIR	Council for Scientific and Industrial Research
DEAT	Department of Environmental Affairs and Tourism
DWAF	Department of Water Affairs and Forestry
$	Dollar (United States of America)
FARN	Environment and Natural Resources Foundation
FAO	United Nations Food and Agriculture Organisation
GWP	Global Water Partnership
HACOP	Hertzog Agricultural Cooperative
HIV	Human Immune-deficiency Virus
IWRM	Integrated Water Resource Management
MDGs	Millennium Development Goals
MSc	Master of Science
NGO	Non-Government Organisation
NRM	Natural Resource Management
NWA	National Water Act (36 of 1998)
PhD	Doctor of Philosophy
PRA	Participatory Rural Appraisal
R	Rand
RSA	Republic of South Africa
UN	United Nations
UNDP	United Nations Development Programme
USAID	United States Agency for International Development

WMA	Water Management Area
WMO	Water Management Organisation
WRC	Water Research Commission
WSSCC	Water Supply and Sanitation Collaborative Council
WUA	Water User Association

"The problems that exist in the world today cannot be solved by the level of thinking that created them."

Albert Einstein

CHAPTER 1: INTRODUCTION

1.1 Introduction to the research

Water is essential to human survival and well being. It is a fundamental component in agriculture and industrial activity and plays a vital role in social and economic development. In the quest for economic growth governments are faced with the challenge of ensuring that the principles of sustainable development are adhered to and the benefits generated from the utilization of natural resources are distributed to the poor to eliminate poverty. Access to potable water for consumption and water for production purposes affect household living standards. Escalating shortages of water available per person and the widespread deterioration in water quality poses a serious threat to the African continent, particularly in the drier southern and northern parts (Ashton and Seetal, 2002). Water resources in Southern Africa are unevenly distributed at regional and national levels and variability is both temporal and spatial (Turton *et al*, 2003). Because it the poor who are the worst affected by changes in water availability and quality, the link between the management of water resources and poverty alleviation has become increasingly clearer over the years.

The role of public participation[1] in natural resource management (NRM) development projects and processes is becoming more prominent as new policies are approved and adopted. The value of community involvement in decision-making processes lies in the improvement of people's quality of life and the inclusion of those people who have been historically marginalized, such as the poor and women. The South African Department of Water Affairs and Forestry (DWAF) states that if public participation is conducted successfully, it will contribute to the success of DWAF initiatives and accomplishing sustainable development. "Public participation will further assist in rectifying the inequities of the past by offering stakeholders the opportunity to be involved in decisions that affect their lives" (DWAF, 2001: ix). As governments focus their attention on environmental issues and sustainable management of the world's resources, it has become clear that sustainability and poverty alleviation cannot be achieved without community involvement. This thesis aims to identify and explore the obstacles to participatory processes in water management in the Kat valley in South Africa's Eastern Cape Province.

[1] The term public participation is used interchangeably with stakeholder, citizen, or community participation/involvement.

Integrated water resource management (IWRM) is defined as a process that promotes the co-ordinated 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 (FAO, 2004). The international community has embraced the principles of IWRM by ratifying agreements such as Agenda 21, the Rio Declaration on Environment and Development, and the UN Millennium Declaration. Both rich and poor countries have adopted IWRM as the dominant paradigm for water management (Merrey *et al*, 2005). Following this trend DWAF has adopted an approach which recognizes the catchment as the basic unit of water management (Smit, 2003). Public participation in water management activities is one of the basic principles of IWRM.

South Africa receives an average rainfall of 497 mm per year, with nearly two thirds of the country receiving less than the national average and 20% of the country receiving less than 200 mm per year (Turton *et al*, 2003). The country is classified as a semi-arid country with freshwater being the most limiting natural resource and spread disproportionately across the country from east to west; consequently present and future water availability is heavily dependent on climate, water use and management and land-use practices (DEAT, 1999). Under the previous apartheid government access to the country's water resources was based on riparian rights, affording the white population, who owned the majority of arable land, access to water for commercial agriculture whilst the majority black population were without access to infrastructure, land, and water for production purposes. The democratization of South Africa in 1994 led to the reformation of water legislation through the enactment of the National Water Act (No. 36 of 1998, RSA) and the Water Services Act (No. 108 of 1997, RSA). The National Water Act (NWA) states that the South African government has overall responsibility for and authority over the nation's water resources and how they are utilized. The Act acknowledges that the discriminatory practices of the previous government have resulted in unequal access to water and the use of water resources and recognizes the government's responsibility to ensure the equitable allocation and redistribution of water (RSA, 1998). Turton *et al*. (2003) asserts that because water gives land its value, the NWA represents the most important means of redistribution in South Africa.

The NWA divides South Africa into 19 Water Management Areas (WMAs) and aims to bring about the decentralization of management powers through the establishment of regional and local water management organizations, namely Catchment Management Agencies (CMAs) and Water User Associations (WUAs). Figure 1.1 shows the 19 WMAs in South Africa. The intention is that over time "DWAF will gradually withdraw from direct involvement in the development, financing, operation and maintenance of water resources infrastructure and will transfer the responsibility for operating and maintaining infrastructure to other institutions such as CMAs and WUAs" (WRC, 2003: 2).

Figure 1.1 Demarcated water management areas in South Africa
Source: DWAF (2007)

1.2 Water management structures in South Africa

An overview of the various water management structures in South Africa, as described by DWAF (2001), is given below.

1.2.1 Catchment Management Agencies (CMAs)

A CMA is a statutory organization that is responsible for the management of water resources within a specific WMA. Each of the 19 WMAs will be managed by a single CMA that will coordinate the functioning of other water management institutions within their WMA, inducing the decentralization of water management by transferring authority to the regional and catchment levels. A CMA must ensure that all interested and affected stakeholders within its WMA, including marginalized poor communities, are able to participate in the consultation and decision making processes of the organization; additionally the NWA states that CMA governing boards must have appropriate community, racial and gender representation. Presently in South Africa most WMAs are still in the process of establishing CMAs and until a CMA is established and fully functional all CMA duties are performed by the regional DWAF. The NWA states that one of the initial functions of a CMA is to promote community participation in the protection, use, development, conservation, management and control of the water resources in its WMA.

1.2.2 Water User Associations (WUAs)

Chapter eight of the NWA describes WUAs as associations that operate at a restricted localized level, and are in effect cooperative associations of individual water users who wish to undertake water related activities for their mutual benefit. A WUA may be a single sector or multi sector organization. A single sector WUA would act in the interests and on behalf of a group of similar users, such as a group of commercial farmers. A multi sector WUA acts in the interests and on behalf of a combination of different water users, such as domestic users, forestry, mining, agriculture, etc. Their primary purpose, unlike CMAs, is not water management but to "enable people within a community to pool their resources (money, human resources and expertise) to more effectively carry out water-related activities" (DWAF, 2001, 27), hence through a WUA members can benefit from addressing their local needs and priorities. DWAF states that WUAs have an important role to play in poverty eradication and providing food security.

1.2.3 Catchment Forums (CFs)

CFs are defined as non-statutory, local 'grassroots' organizations that are established by interested and affected stakeholders. According to Smit (2003:3), they offer "a potentially effective and efficient approach to the structured promotion of stakeholder participation in water resource management and have become important bodies representing stakeholders in the establishment of CMAs". CFs facilitate communication between the inhabitants of a catchment and between these inhabitants and other institutions such as NGOs, local government departments and municipalities (McMaster *et al*, 2003).

1.3 Study area

The Kat valley was the study area for this research project. The valley has been the study area for a number of research projects (Motteux, 2002; MacMaster, 2002; Soviti, 2002), all of which give background information on the geography of the area. These three sources have informed the subsections that follow.

1.3.1 Biophysical characteristics

The Kat valley is situated in the central part of the Eastern Cape Province of South Africa (refer to Figure 1.2) and is part of the Mpofu district which lies in the foothills of the Katberg Mountains. It falls within the Fish to Tsitsikamma Water Management Area (WMA) and is a tributary catchment to the Fish River Basin. The catchment extends approximately 80km north to south and covers a total area of approximately 1700km^2. Land use activities include commercial citrus farming and stock farming in the lower reaches of the catchment, community-based or small-scale agriculture and stock farming in the middle reaches of the catchment, and commercial forestry in the north-western upper reaches. Vegetation consists of mostly valley bushveld and river thicket type plant cover, although pockets of Afro-montane forest and grassland vegetation are present at high altitudes. Rainfall, as is the case in the rest of the country, is both temporally and spatially variable. The Kat dam, situated in the upper reaches of the Kat River, is the only major impoundment along the river. The dam was commissioned in 1970 and its water is used for irrigation purposes.

1.3.2 Socio-economic characteristics

The population of the Kat valley was estimated at approximately 49 500 people in 2001 (Dinar *et al*, 2006). The town of Fort Beaufort located in the centre of the catchment (refer to Figure 1.3) is the single service centre in the area. It supports a population of approximately 25 489 people but suffers from economic stagnation and high levels of unemployment. Citrus farming occurs mainly in the middle Kat valley and is the main agricultural activity in the area. Commercial citrus farms employ hundreds of workers during the citrus season and communities rely heavily on this seasonal employment. Village communities suffer from high levels of unemployment with a strong dependency on government grants for the survival of entire households.

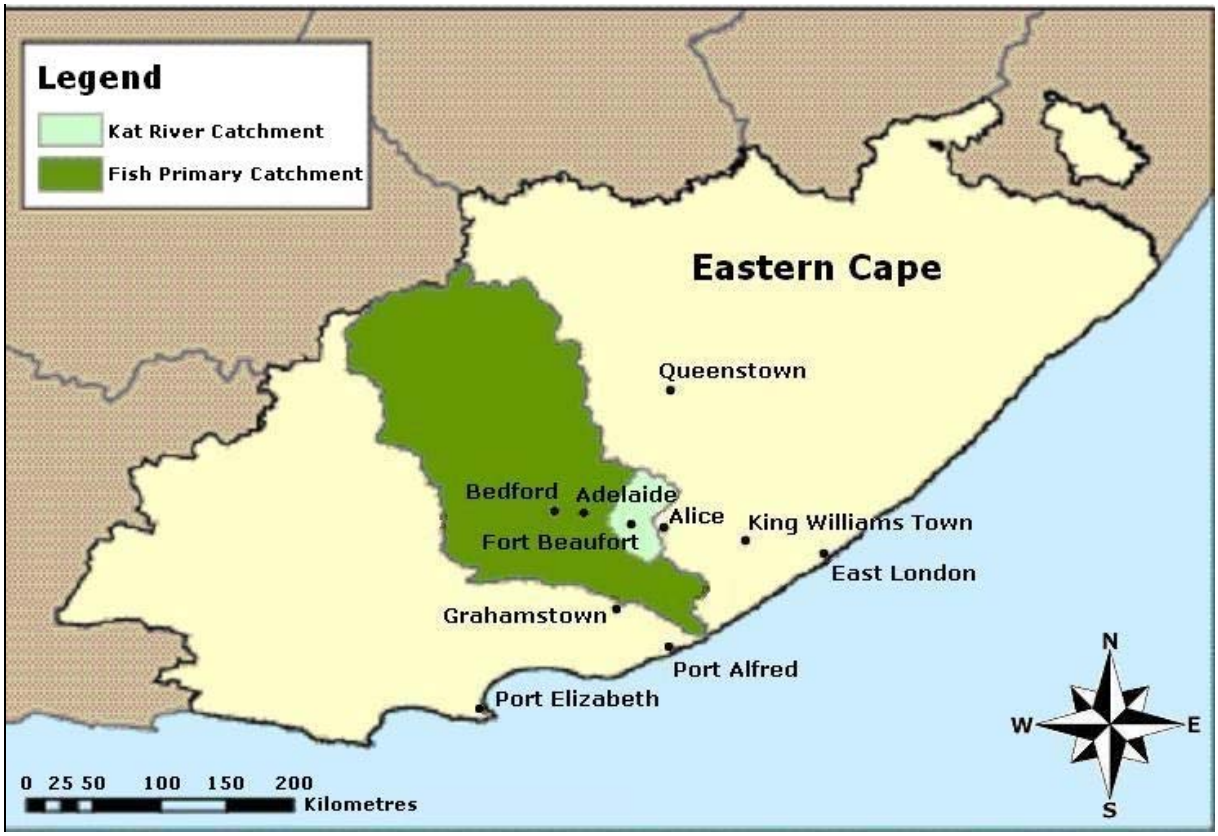

Figure 1.2 The Kat valley within the Eastern Cape province of South Africa
Source: Adapted from Birkholz and Gumede (2005)

1.3.3 Historical background

The Kat valley has been described as having a highly complex history of dispossession and resettlement. In 1829 the original Xhosa inhabitants of the area were forcibly removed by the colonial government and between 1829 and 1850 the area was declared a Coloured area, intended to act as a human barrier between the Xhosa and the White settlers. This period was characterized by conflict over the land resulting in several frontier wars being fought between the British and the Xhosa. These wars led to the expulsion of the Coloured settlers for joining the Xhosa during the rebellions. After the 1850s the government allocated the land to white settlers.

In the late 1970s, in accordance with the 1913 and 1936 Land Acts[2], the land was transferred to the independent Ciskei homeland which led to the displacement of Whites and Coloureds living in the area. McMaster (2002) describes how the government parastatal ULIMCOR assisted in the transfer of some previously owned white farms to selected black farmers. Land that was not used by ULIMCOR remains either unused or farmed by resource poor villagers with little access to equipment and infrastructure, resulting in levels of production being a fraction of what they had been before expropriation. Access to water for irrigation remains a problem for poor village farmers. Some commercial citrus farms fell into areas that were not handed over to the Ciskei government and are still owned by White commercial citrus farmers today. In most parts of the Kat valley land is owned by the state but is occupied communally.

[2] Through the enforcement of the Natives Land Act (No. 27 of 1913) amended in 1936, and the Bantu Homelands Citizenship Act (No. 26 of 1970), Black South Africans were not allowed to own or rent land outside of designated areas that were to become known as Homelands or Bantustans.

Plate 1.1 View of Balfour village in the upper Kat valley

Plate 1.2 Citrus farming in the middle Kat valley

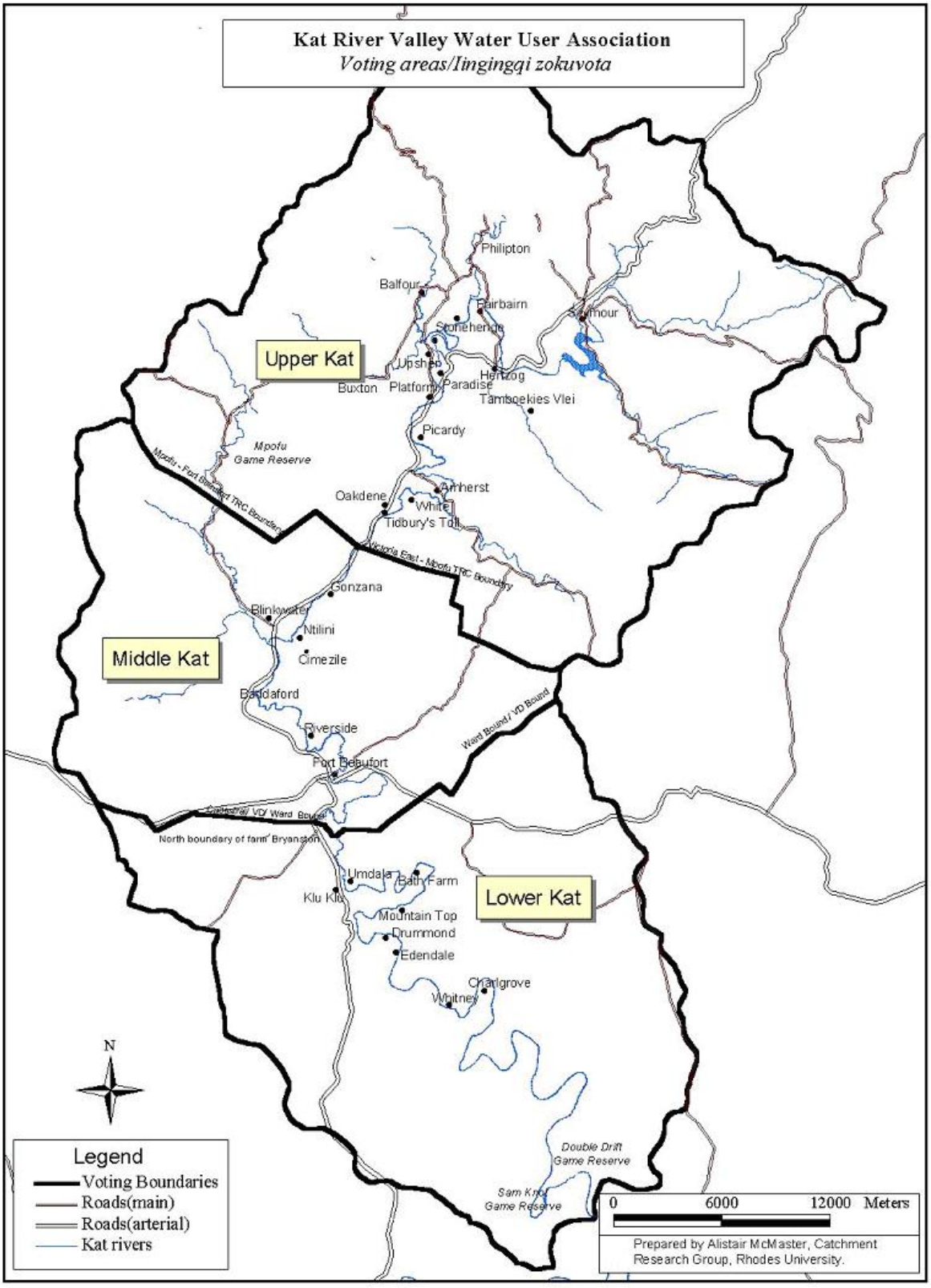

Figure 1.3 Upper, middle and lower regions of the Kat valley

1.4 Contextualizing the research

Much participatory work has been done in the Kat valley to raise environmental awareness and promote public involvement in the establishment of local water management organisations. This research focuses on the participatory processes that have taken place in the Kat valley and the resulting effects on the local communities. It also provides a description of what was taking place during the research process in terms of public participation, household water use, inter-organizational relationships and the opinions of Kat valley residents on local water management. The study looks at some of the long-term outcomes of the work done by PhD researcher Nicole Motteux between 1996 and 2002 in the Kat valley communities. Her work contributed to the formation of the Kat valley catchment forum, a community organization established to address the needs of poor villages in the area with respect to catchment management issues, in particular the management of water resources. Motteux's research focused on the development of research methodologies to bring about sustainable catchment management and rehabilitation via participatory processes.

The research conducted through this project also forms part of a broader research project entitled "*A critical review and assessment of participatory practice in water resources management in South Africa, with a view to promoting a platform for dialogue and capacity building, and developing appropriate resources and methods to assist in the establishment and functioning of Catchment Management Agencies".* The project was undertaken by a project team from the Environmental Education and Sustainability Unit at Rhodes University which the researcher was a part of and was funded by the Water Research Commission (WRC).

There is a growing awareness, at all levels of development, that environmental sustainability is very closely linked to the 'real' participation of beneficiaries in the development process (Kenny, 1997). The participation of rural communities, the country's poorest populations, in sustainable development initiatives is crucial to achieving poverty alleviation goals. Motteux (2001) states that practitioners should not presume to know what communities need and what their priorities are. With this in mind, the research work undertaken for this study focuses on

the water related needs of the Kat valley rural communities and their participation in IWRM activities.

A situational analysis or situation analysis is the main focus of this study in terms of what information it can provide. Rennekamp *et al*. (2007) defines a situation analysis as an examination of a community for the purpose of identifying issues, problems and opportunities. "It is a process of gathering and analyzing information to guide planning and action… [and] concludes with analyzing the information gathered, identifying geographic and programmatic priorities, and making specific recommendations for action" (Williamson, 2000).

1.4.1 Reasons for selecting the Kat valley as a study area

Several factors influenced the decision to select the Kat valley as the study area for the research project. These are listed below.

- Kat valley communities are characterized by low levels of production, exceptionally low levels of employment and a high degree of poverty (Soviti, 2002; McMaster, 2002). The purposes of the NWA include redressing the results of past racial and gender discrimination as well as facilitating social and economic development (RSA, 1998). Taking into consideration the high dependence on agricultural production for local livelihoods and the lack of access to water for domestic and agricultural use by marginalized Kat valley village communities, the Kat valley was well suited to research the results of the participation of poor rural communities in local IWRM activities.

- Since 1996 the Department of Geography at Rhodes University has established and strengthened ties with communities in the Kat valley, thereby facilitating the process of establishing contact with villages and community leaders, and obtaining their support for the research

- Participatory research has been a part of local IWRM activities in the Kat valley for the past ten years and provided the researcher with an ideal opportunity to document the outcomes of the past years participatory activities

- A pilot study administered in the village communities identified local concerns regarding the quality of water available for consumption, access to water resources for production purposes, poverty, and the purpose and activities of water management organisations in the area

- The Kat valley CF and WUA have been active for several years. This provided the opportunity to obtain information on the formation processes, objectives and operation activities of these organizations, through documenting the experiences and opinions of their members.

- The study area is within relatively close proximity to Rhodes University, the researcher's study institution and place of residence. As a result transport and associated costs were minimized.

1.5 Aim and objectives

1.5.1 Aim

To identify and explore obstacles to the participatory process in local IWRM in the Kat valley

1.5.2 Objectives

The primary objectives of the research project are as follows:

1.5.2.1 To determine the socio-economic profile and water supply situation in the Kat valley village communities (Chapter 4)

1.5.2.2 To study the functioning of local water management organizations in the Kat valley by identifying their objectives and determining if and how these are achieved (Chapter 5)

1.5.2.3 To investigate the relationship between the Kat valley village residents and local water management organizations (Chapters 5 and 6)

1.5.2.4 To make recommendations to improve the participation of poor marginalized communities in local IWRM (Chapters 6 and 7)

1.6 Structure of thesis

Chapter one contextualizes the research by presenting a brief description of the present global and national water management trends and scenarios. The historical, socio-economic and biophysical profiles of the Kat valley are put forward as well as the aim and objectives of the research.

Chapter two provides a theoretical framework on participation and participatory activities, their relevance to poverty alleviation and IWRM, and the resulting benefits and challenges of people's participation.

Chapter three describes the approaches, methods and data gathering tools selected for the research. An overview of the research paradigm and issues of validity are presented, as well as a description of the data analysis processes and the limitations of the methodology adopted.

Chapter four describes the results of the data gathered on household socio-economic characteristics and household water supply for domestic use and food production.

Chapter five describes the results of respondent's perspectives on local water management organizations and water management activities in the Kat valley. Results obtained from

questionnaires answered by Kat valley CF and WUA committee members on the objectives and mode of operation of these organizations are also provided.

Chapter six discusses the main themes identified in the literature review and results chapters. In this chapter the role of water management institutions and their interactions with rural communities are explored, as well as the need for accountability, cooperation and sustainability in community development initiatives together with changes in existing IWRM approaches.

Chapter seven concludes the research by presenting a summary of the main research findings, reflecting on the entire research process and providing recommendations for future IWRM participatory initiatives in rural poor communities.

CHAPTER 2: THE AGE OF PARTICIPATION

2.1 Introduction

In the past two decades the concept[3] of participation has become very popular among governments, NGOs and international organisations and support for participatory initiatives continues to grow. Together with democracy, governance and the stakeholder it has taken on an iconic appearance in almost all international and national documents (WRC, 2004a). It is "a frequently articulated requirement within the context of community development" Neves (2002: *i*) and is seen as an 'agent of change', particularly within the context of the developing world where "hardly a project...is now without some 'participatory' element" (White, 1996: 6). However, participation can be ambiguous, lacking substance, overused, or merely included for the purpose of getting policies and projects approved. The title of this chapter has been adopted from the book by McLagan and Nel (1995) in which the authors talk about the inevitable shift towards participatory governance and the resulting end of authoritarianism. With the current popularity of participatory initiatives, it may seem that we are indeed living in the 'age of participation'; however the outcomes of these activities, depending on various factors which will be explored in this chapter, may prove to be for the poor food for thought, rather than food for the stomach (Simpungwe, 2006). This chapter critically evaluates the relevant literature on participation and participatory practices in an attempt to explore (1) the meanings of participation; (2) the main issues associated with participation; and (3) the purpose and outcomes of participatory initiatives.

2.2 Defining participation

Participation is defined as a process through which stakeholders[4] influence and share control over development initiatives and the decisions and resources which affect them (World Bank, 1996). In most cases this definition is considered the standard; however participation means

[3] Participation is viewed as both a process and a concept or idea, because its meaning and relevance in any situation is interpreted by the participants, as their interpretations, expectations and actions will determine how it is translated into practice and therefore determine its true meaning within a specific context.

[4] A stakeholder is an institution, organization, or group that has some interest in a particular sector or system. Stakeholders may also be individuals and/or constituencies contributing, either voluntarily or involuntarily, to wealth-creating activities, and who are therefore potential beneficiaries and/or risk bearers of its operations (FAO, 2004).

many different things to different people and different interest groups under different circumstances, as a result "clarity around the concept is a critical factor determining how it is translated into practice" (WRC, 2004b: 2).

Scholars have categorised participation into different types or levels in order to define and distinguish between the different ways people participate. Brynard (1996: 41) broadly divides participation into two main categories: (1) citizens merely receiving information from authorities about proposed actions, and (2) the sharing of power with citizens to shape the final decisions. These two definitions are broadly defined extremes of participation. Pretty (1995) delves deeper into the process and identifies seven levels of participation, beginning with participation as a facade and ending with participation that facilitates the self-mobilisation and independence of people. These are described in Table 2.1.

Table 2.1 A typology of participation (Source: Adapted from Pretty, 1995: 1254)

Typology	Characteristics of each type
1. Manipulative participation	Unelected 'representatives of the people' sit on official boards but have no power. Participation is simply pretence.
2. Passive participation	People are told what has already been decided or what has already happened by an administration or project management. People's responses are not listened to and the information being shared only belongs to the external professionals.
3. Participation by consultation	People participate by being consulted or by answering questions. External agents define problems and information gathering processes, so as to control analysis. Such a consultative process does not concede any share in decision making and professionals are under no obligation to take on board people's views.
4. Participation for material incentives	People participate by contributing resources e.g. labour, in return for food, cash or other material incentives. Farmers may provide the fields and labour but are not involved in

	experimentation or the process of learning. It is very common to see this called participation, yet people have no stake in prolonging technologies or practices when the incentives end.
5. Functional participation	Participation is seen by external agencies as a means to achieve project goals, especially reduced costs. People may participate by forming groups to meet predetermined objectives related to the project. Such involvement may be interactive and involve shared decision making, but tends to arise only after major decisions have already been made by external agents. At worst, local people may still only be co-opted to serve external goals.
6. Interactive participation	People participate in joint analysis, development of action plans and formation or strengthening of local institutions. Participation is seen as a right, not just the means to achieve project goals. The process involves interdisciplinary methodologies that seek multiple perspectives and make use of systemic and structured learning processes. As groups take control over local decisions and determine how available resources are used, they have a stake in maintaining structures or practices.
7. Self-mobilization	People participate by taking initiatives independently of external institutions to change systems. They develop contacts with external institutions for resources and technical advice but retain control over how resources are used. Self-mobilisation can spread if governments and NGOs provide an enabling framework of support. Such self-initiated mobilization may or may not challenge existing distributions of wealth and power.

Siraj (2005) asserts that while Pretty's typology covers most types of participation, it has limitations. Firstly, Pretty does not include a type of participation that describes non-participation and this significantly restricts the analytical application of the typology to a programme or project. Secondly, low levels of participation are attributed to external factors and not to deficiencies on the part of participants, such as a lack of adequate knowledge and information.

2.3 Origins of participation

Where did participation or participatory thinking begin or come from, and how did it emerge as one of the most popular worldviews of today? Skrbina (2001: 247, 228-229) asserts that a "participatory consciousness" is inherent in the human condition and as human beings we have an active role in creating truth and subsequently creating our own reality through our cognitive efforts, proving our desires and ideals to be real forces in shaping our world. Barfield in Skrbina (2001: 243) suggests that society is founded on a form of participation and defines participation as "the extra-sensory relation between man and phenomena." Skrbina cites Merleau-Ponty's description of how 'the outside' has certain ways of invading us, and we, in turn, have certain ways of meeting this invasion. This description according to Skrbina is clearly a 'participating approach' to sensation and perception. It can therefore be suggested that a participatory nature is inherent to all human beings as a means of responding to certain external factors or stimuli in our environments and in so doing creating our own reality. Kliksberg's (2000: 186) sixth theory on participation supports this thinking stating that "participation is inherent to human nature" and that "the need to participate is ingrained in the basic identity of human beings."

McLagan and Nel (1995:2) assert that humanity's move towards increased participation has been ongoing throughout history, and cite the following attempts to spread "national and community power, rights, and responsibilities": Athenian democracy in the fourth century B.C., the Magna Carta in Britain (1215), the Declaration of Independence in America (1776), the Declaration of the Rights of Man in France (1789), and the United Nations International Declaration of Human Rights (1948). By studying these historical events, one can see that public participation and democracy represent an inextricable unity.

Democracy[5] is defined as a political method by which every citizen has the opportunity of participating through discussion in an attempt to reach voluntary agreement as to what shall be done for the good of the community as a whole (Bassett, 1964). Without public participation in government activities, a government fails to function as a democracy.

[5] Democracy involves the pooling of ideas and views. It implies a willingness to persuade and openness to persuasion. It is based upon tolerance and necessitates compromise with the ultimate aim of reaching agreement (Bassett, 1964: 94).

Because citizens cannot risk becoming politically and economically isolated from the 'government machine', they need to be part of collective decision making to influence government policy. A democracy provides each citizen with an inalienable right to participate and therefore requires that (1) "the right of every citizen to participate in those government decisions, policies and actions that directly affect him or her be legally protected" and (2) "facilities and instruments of participation be accessible to every individual citizen" (Clapper, 1996: 56).

According to Almond and Verba (1963: 369-370), a global "participation explosion" was brought about by industrialisation and economic development because increased modernization brings about a simultaneous increase "in the belief that the ordinary citizen, who has traditionally been outside politics, has become politically relevant and has to be accommodated and allowed to participate in the political system." Clapper (1996: 66) affirms this view by stating that "research evidence substantiates the proposition that participation tends to be higher in more modern societies than in the less modernised societies."

2.4 Exploring the concept

It is important to understand that the character of participation changes over time (White, 1996) as the process continually evolves and participants adapt to changes, and that people become involved in participatory activities for specific reasons with specific objectives in mind. Government departments and NGOs have their own goals behind their sponsorship and planning of participatory initiatives. Brynard (1996) outlines some of the objectives behind citizen participation initiatives:

- provide information to citizens
- get information from and about citizens
- improve public decisions, programmes, projects and services
- enhance acceptance of public decisions, programmes, projects and services
- supplement public agency work
- alter political power patterns and resources allocation
- protect individual and minority group rights and interests
- delay or avoid complicating difficult public decisions

The success of these initiatives is dependent on whether or not the participant's objectives have been achieved through their involvement in the activity. Therefore the outcomes of any participatory initiative may for some participants be regarded as a success and to others a waste of time. More often than not individuals choose to participate in and through organisations with which they have common interests and objectives. According to Bekker (1996: 32-34) participation via interest groups occurs for the following reasons:

- to ensure that local government is run according to the principles of good governance and that the expectations of the local inhabitants are met
- interest groups tend to stabilize the relationship between local authorities and inhabitants
- members feel 'safer' and protected when in groups
- the need of individuals to share social interaction within a community[6]
- members of interest groups often enjoy high status in their communities
- greater power to act and negotiate with local authorities collectively than individually
- through collective activities and the combination of the knowledge, skills and experience of the individual members, groups are in a more favourable situation than individuals to reach their objectives

Public participation is strongly associated with the empowerment of citizens, in particular the poor. The ability to make decisions and realise them through a process of action in order to improve one's quality of life (development in its widest sense according to Ashton & Seetal, 2002) is the fundamental meaning behind empowerment and is strongly associated with the democratic ideals people value. Empowerment is defined as the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives (World Bank, 2004). Empowerment must involve action from below and while supportive outsiders can help facilitate the process, they cannot bring it about (White, 1996). Practitioners view participation as a means to ensure that government authorities meet the needs of the people and do not abuse their powers by

[6] The word community refers to people grouped together on the basis of geography, common interest, identity, interaction or exposed to a particular risk, depending on whether a planner, politician, social scientist or an epidemiologist is the one defining it (Olico-Okui, 2004:9).

adopting an authoritarian approach to decision-making. This ensures democratic ideals are upheld and participation is therefore sometimes viewed as democracy's watchdog. Understandably the words "power", "control", "equality" and "capacity building" are often linked to public participation initiatives. Capacity building is an evolutionary process that "liberates ideas, emotions and sensations, in the encouragement of self-growth" (Motteux, 2001: 20), and goes hand in hand with the participatory process.

Abrahamsson (1977: 224) cites Bachrach's assertion that because different groups in society have large differences in their possibilities of using economic and material resources, power should be sufficiently diffused throughout society to "inculcate among people of all walks of life a justifiable feeling that they have the power to participate in decisions which affect themselves and the common life of the community, especially the immediate community in which they work and spend most of their waking hours and energy." For Abrahamsson a critical issue is how to inculcate this feeling among society's poor.

> *"But how are underprivileged groups to be given that feeling unless they have something to decide on? Does not the feeling of having the power to make decisions come from the actual command over resources, the distribution of which one is entitled to determine?"* Abrahamsson (1977: 224)

By asking the above question, Abrahamsson brings the main issues in the participatory debate to the fore. Why do people not have a 'justified feeling' that they have the power to make decisions, even though it is their democratic right to do so? Who is responsible for ensuring that the public have this 'power' and is this a realistic expectation? Even though democracy provides the public with a right to participate, very few people do so. The majority participate very infrequently and minimally and some withdraw completely (Clapper, 1996). Clapper identifies four broad, overlapping categories that determine a person's intensity of participation: (1) factors associated with the stimuli a person receives from their environment, (2) personal factors, (3) factors pertaining to an individual's social position and (4) environmental variables. These factors are elaborated on in Chapter 6.

Attempting to simplify the analysis of participation, Chambers (2005) asserts that participation can be conveniently analysed in three ways: who participates (government staff, local inhabitants of an area or both), what institutions are involved, and lastly the objectives and functions of participation. "Local participation can be analysed in terms of two streams of initiatives, communication and resources: those which are top down, originating in government headquarters and penetrating towards and into the rural areas; and those which are bottom up, originating among the people in the rural areas and directed upwards into the government machine…" Chambers (2005: 87). In top-down approaches, professionals are predominant in decision-making while in bottom-up approaches stress is placed on the importance of communities learning to decide what is best for them and the process of how to achieve the change they desire (Olico-Okui, 2004). The failure of development projects to eradicate poverty led to people questioning the top-down expert driven approach and encouraging development from the bottom up. "By encouraging a structured bottom-up approach, the benefits of stakeholder wisdom and empowerment will be brought to the fore" (Van Wilgen *et al*, 2003: 5).

There is an immense gap between the discourse on participation and the reality of putting it into practice. Kliksberg (2000) asserts that at the discourse level there appears to be total consensus and a tremendous will to promote participation; however, in practice, this is not being followed by serious, systematic processes for its implementation.

2.5 Participation in poverty alleviation and IWRM

The United Nations Conference on Environment and Development in 1992 and the subsequent conference report, Agenda 21, highlighted the following environmental issues: protection of the earth's ecosystem, sustainable development, poverty eradication, public participation in decision-making processes, access to information, cooperation between states and peoples; social, environmental and economic interdependency, the vital role of women and indigenous people, the polluter pays principle, the enaction of effective environmental legislation, and capacity building (UN, 1999; 2005). Agenda 21 set the stage for global transformation in an effort to create sustainable societies, bridge economic divides and eradicate poverty.

Poverty is viewed as a state of being without something that is crucial for one's well-being; whether it be access to food and water, health care, education or political power. It is a "denial of opportunities and choices most basic to human development to lead a long, healthy, creative life and to enjoy a decent standard of living, freedom, dignity, self-esteem and respect from others" (Statistics SA, 2000: 54). In terms of income the World Bank defines the condition of extreme poverty as a person living on less than $1 per day, and poverty is defined as a person who earns less than $2 a day. Poverty in South Africa has a strong rural bias (Van der Berg *et al*, 2002). The causes of poverty are complex, multidimensional and interdependent; consequently they require a thoughtful, inclusive and integrated approach to resolve. The failure of large development projects that adopted a western idea of what development was and did not "consider the needs of the people living in the context within which the development was taking place" highlighted the need to include local people in the design and implementation of the development process (WRC, 2004a: 8,9).

Rapid deterioration in the quality and quantity of natural resources, present and potential enviro-socio-economic effects of global climate change, and the failure to eliminate poverty among the world's marginalised communities, has put pressure on governments to invest in developing solutions to the world's environmental problems. Governments recognise that the successful management of natural resources is complex and integrally linked to political, economic and social issues. In response, they have decentralised[7] power to local government organisations in the hope that "by drawing on the human resources within civil society…local resource issues can be dealt with more efficiently at a local level with the participation of local users" (WRC, 2004c: 14).

Agriculture accounts for most land use in developing countries and is the principle livelihood of the rural poor (Scherr, 2000). Subsistence farmers and other small-scale resource users are the key and often neglected stakeholders in NRM (Grimble and Wellard, 1997). A major challenge for resource managers worldwide is the question of how to balance socio-economic and environmental trade-offs associated with resource management decisions (Merritt *et al*,

[7] Decentralization is any act in which a central government formally cedes powers to actors and institutions at lower levels in a political-administrative and territorial hierarchy (Ribot, 2002: 4).

2004). Janssen and Goldworthy (1996: 262) assert that the complexity and range of dimensions of many NRM problems means that they cannot be resolved by a single individual or discipline, but only through "multidisciplinary teamwork".

According to Bessette (2006), activities that promote environmental sustainability must be designed and implemented with the active participation of those families and communities who are struggling to ensure their livelihood in changing and unfavourable environments. Van Wilgen *et al.* (2003) suggest that empowering people to participate in resource management processes would give rise to immense political and environmental rewards while (Bekker, 1996: 42) asserts that environment-sensitive organisations help bring about a greater convergence between citizen participation and technological development, because "as the public become less satisfied with the impact of technology on the environment, citizen participation in complicated technological matters tends to become a more likely option". Public participation in development decisions is fundamental to achieve lasting solutions to meet the "challenge of a development pattern striving to harmonize economics with social and environmental needs" (FARN, 2001).

NRM comprises of several sectors, including IWRM[8]. USAID (2006) defines IWRM as "a participatory planning and implementation process, based on sound science that brings stakeholders together to determine how to meet society's long-term needs for water and coastal resources while maintaining essential ecological services and economic benefits". The UNDP (2003), states that IWRM is a cross-sectoral policy approach to respond to the growing demands for water in the context of finite supplies.

> *"By aligning and integrating interests and activities that are traditionally seen as unrelated or that, despite obvious interrelationships, are simply not coordinated, IWRM can foster more efficient and sustainable use of water resources to achieve the MDGs. It must be emphasised however that an IWRM approach will support not just achievement of the MDGs but also the long-term economic development, poverty*

[8] Refer to COSI (2007) for a summary of IWRM

reduction and environmental sustainability that will be needed to sustain that achievement." (Muller, 2006)

At the international political level the IWRM approach seems to have first been developed at the 1992 International Conference on Water and the Environment in Dublin and "can be regarded as the vehicle that makes the general concept of sustainable development operational for the management of freshwater resources" (Hilderling, 2004: 32). Four guiding principles that underpin the IWRM process were formulated at the conference. These also contributed to the 1992 Agenda 21 plan of action. The four Dublin principles are:

1. Freshwater is a finite and vulnerable resource, essential to sustain life, development and the environment.
2. Water development and management should be based on a participatory approach, involving users, planners and policy makers at all levels.
3. Women play a central part in the provision, management and safeguarding of water.
4. Water has an economic value in all its competing uses and should be recognised as an economic good.

According to USAID (2006), IWRM assists in protecting the world's environment, fostering economic growth and sustainable agricultural development, promoting democratic participation in governance and improving human health. The organisation states that globally, water policy and management are beginning to reflect the fundamentally interconnected nature of hydrological resources and IWRM is emerging as an accepted alternative to the sector-by-sector, top-down management style that has dominated in the past. Many countries, including South Africa, have adopted stakeholder participation as a foundation for integrated practices within the IWRM arena (Pollard, 2002).

2.6 Challenges to public participation

People's participation is a complicated process and there are no straight pathways to success (Da Rocha Severo, 2002). Various factors determine the outcomes and success of participatory initiatives. Clapper (1996: 70-77) eloquently puts forward several ideas on the advantages and disadvantages of participation. I have adapted some of the main points he

presents and included the ideas of other authors. This section deals with challenges to the public participation process. Section 2.7 will discuss the benefits of participation.

***Manipulation of the process*:** When agencies (government and non-government) sponsor citizen participation in order to achieve their own goals, citizens become mere ratifiers of government plans without any significant empowerment of participants during the process. Only activities that support the implementing agency's goals are favoured, while those that go against them and transfer power to the public are considered unsafe and discouraged. In this sense, according to White (1996), participation rather than exclusion is often the best means of control by those in authority.

***Low citizen participation*:** Hosting participatory initiatives does not ensure that the public will participate and low levels of public participation are common. Reasons for non-participation are various and include a lack of awareness, lack of resources such as transport and time, as well as feelings of distrust and apathy among potential participants.

***Potential for conflict*:** The potential for conflict is inherent in citizen participation and is seen as one of its major disadvantages. Because goals are largely undefined and people have different opinions on which goals are the most important and what the outcomes should be, conflict between citizen groups and conflict between citizens and public officials may result from the pursued goals of citizen participation. Some practitioners, however, view 'good conflict' as a means to bring about positive change. Motteux (2001: 33; 87) asserts that while most people fear conflict and perceive it to be negative, "conflict offers opportunities for growth, reconciliation and change", while White (1996) states that the absence of conflict in participatory programmes should raise suspicion because change hurts.

***Time, costs and benefits*:** Often the benefits of participatory activities are only seen in the long term while personal and financial costs are incurred immediately. Consequently the poor view participation as too costly while government officials see the poor as only being concerned with the immediate gratification of selfish interests and not seeing the 'big picture' in terms of long-term benefits.

***Attitude of public officials*:** Public officials feel that they know what the public need and that the public are not qualified enough to participate in decision making. There is resistance to giving up control. Public participation is seen as a threat to their expertise which they fear will be questioned. As a result citizen participation is seen as cumbersome and a waste of time and money. This causes resistance among officials in establishing or becoming involved in participatory initiatives.

***Participation mechanisms*:** Citizens may become frustrated and discouraged from participating due to the establishment of inflexible institutional arrangements and work procedures designed for efficiency rather than responsiveness to public preferences. Because not all parties involved in participatory initiatives are equal in their competency in terms of the way they express and organise themselves, as well as their access to information and finances, small groups of elites are often at the forefront of public participation programmes while the majority of the public are unwilling to participate due to a lack of incentives. As a result the interests of the majority are not represented.

***Citizen competence*:** In order to effectively participate in initiatives the public have to display a level of competency to grasp the intricacies of the planning process, develop workable plans, ensure the effective and efficient application of public funds, and ensure that their participation benefits the entire community and not just the interests of the participants. Often people are not equipped with these skills and are subsequently not able to participate effectively.

2.7 Benefits of public participation

From the above information one can conclude that public participation processes are complex and pose various challenges to those involved. However, participatory initiatives also yield the following benefits:

***Reduction of apathy and psychological suffering*:** Participation develops the individual's personality by making him aware that he is part of the total society, and therefore responsible

not only to himself but to society at large (Abrahamsson, 1977). Involvement in citizen participation activities reduces psychological suffering and overcomes the apathy and sense of powerlessness of ordinary citizens. Citizens' belief that they have the ability and competence to influence government planning and decision-making is increased via the participation process.

***Empowering citizens*:** Citizen participation can serve as a means of converting dependency into independence by converting the poor from passive consumers of the services of others, into producers of those services. According to White (1996) the idea of participation as empowerment is that the practical experience of being involved in considering options, making decisions, and taking collective action to fight injustice, is itself transformative, and leads on to greater consciousness of what makes and keeps people poor, as well as bringing about greater confidence in their ability to achieve positive changes.

***Information dissemination*:** In order to promote citizen participation, optimal goal achievement and relationship building the effective and efficient distribution of accurate information to the public is essential. Abrahamsson (1977) states that participation informs and educates those who participate, thereby making them permanently able to defend their own interests.

***Restraining the abuse of authority*:** Citizen participation groups may be an effective check on the exercise of the discretion of public managers, forcing them to be more sensitive and accountable to the implications of their decisions to act or refrain from doing so.

Table 2.2 Contributions of participation to poverty reduction

DIMENSIONS	CONSEQUENCES OF PARTICIPATION IN DEVELOPMENT INTERVENTIONS	CONTRIBUTIONS TO POVERTY REDUCTION
Empowerment	▪ Breaking down the mentality of dependence ▪ Increasing the poor's sense of control over their lives ▪ Acquiring new skills and abilities ▪ Building the poor's social capital ▪ Strengthening the voice of the poor	▪ Improving quality of life ▪ Creating social safety nets
Effectiveness	▪ Better targeting and coverage ▪ Use of indigenous knowledge ▪ Primary stakeholder's monitoring and evaluation	▪ Including more people ▪ Increasing equity ▪ Ensuring that projects/programmes meet the needs of the poor
Efficiency	▪ Reducing overall costs ▪ Using local resources	▪ Increasing the quantity and quality of development interventions
Accountability	▪ Sharing of information	▪ Increasing equity
Sustainability	▪ Assuring local ownership and responsibility	▪ Increasing the durability of project/programme benefits

Of particular importance to this research, is the contribution of participatory initiatives to poverty alleviation. In Table 2.2 Da Rocha Severo (2002:20) summarises the contributions of participation to poverty reduction in terms of five dimensions: empowerment, efficiency, effectiveness, accountability and sustainability.

2.8 Conclusion

As societies move towards decentralised, inclusive, participatory governance and focus their attention on sustainable development, NRM, IWRM and poverty alleviation initiatives, it is becoming apparent that these cannot be achieved in isolation from each other. Emphasis is placed on the adoption of public participation approaches to achieve desired outcomes. However, there is the danger that participation may be used merely as a means to achieve the goals of government officials and professionals rather than the empowerment and development of poor communities. This chapter describes the origins and different meanings of participation, as well as its contributions to democratic society, including its role in IWRM and poverty alleviation initiatives in the developing world. The potential challenges and benefits of participation in development initiatives are various and determined by many factors, including the objectives of the initiative as well as the attitudes and experiences of the participants themselves. While the ideas on participation and participatory processes are ample and diverse, putting them into practice to achieve a significant betterment of society remains the biggest challenge. Issues such as accountability, cooperation and the diffusion of power, play a crucial role in this process.

The themes identified in this chapter put this research into a social, historical and literary context and will be further discussed and elaborated on with specific reference to the Kat valley context in Chapter 6.

CHAPTER 3: METHODOLOGY

3.1 Introduction

In this chapter I present the research methodology, the approach or strategy used to produce knowledge through research. The methodology provides a rationale for the way the researcher proceeds in her pursuit of this knowledge and provides reasons for using specific methods to collect, analyze and interpret information in relation to the kind of knowledge or understanding the researcher is seeking. A research method is defined as a technique for, or way of proceeding in gathering data for a research study. In this chapter I present and justify the research approaches and research methods I have chosen for this study. Each data collection tool is described in detail. I also discuss the analysis of the data, limitations of the methodology, and the efforts to ensure the reliability of the data and the themes extracted from them.

3.2 A qualitative approach

The aim of the research was to identify and explore obstacles to participatory processes in local integrated water resource management (IWRM) in the Kat valley village communities. In order to achieve this I had to adopt an approach that was best suited to an investigation into respondent's perspectives on local water management organizations and their associated participatory activities; an approach that would facilitate the pursuit of an in-depth social inquiry and allow me to "talk with people about their experiences and perceptions" (Patton 2002: 5). The nature of qualitative inquiry made this possible. Ramsden (2002) states that qualitative enquiry provides opportunities to better understand what works, what does not work and ways to improve programmes currently being facilitated. This is possible because it provides the opportunity to work with individuals in designing programmes that are meaningful to them rather then meaningful to the practitioner.

Qualitative researchers speak a language of cases and contexts with emphasis on conducting detailed examinations of cases that arise in the natural flow of social life in order to present authentic interpretations that are sensitive to specific socio-historical contexts (Neuman, 2000). This differs from the research approach of quantitative researchers who place

emphasis on the collection of empirical data, the calculation of exact measurements and the testing of hypotheses.

Merriam (1988: 19; 20) mentions six assumptions of qualitative research which underlie this research project:

1. Qualitative researchers are concerned primarily with process rather than outcomes or products.
2. Qualitative researchers are interested in meaning i.e. how people make sense of their lives and experiences.
3. The qualitative researcher is the primary instrument for data collection and analysis i.e. data are mediated through this human instrument.
4. Qualitative research involves fieldwork. The researcher physically goes to the people, setting, site or institution to observe or record behaviour in its natural setting.
5. Qualitative research is descriptive in that the researcher is interested in process, meaning, and understanding gained through words or pictures.
6. The process of qualitative research is inductive, in that the researcher builds abstractions, concepts, hypotheses, and theories from details.

The methodology adopted for this research is aimed at interpreting human experiences and opinions, and is for the most part qualitative. However, quantitative assessment has also been used to analyze the actual numbers and values obtained from the data to produce the social statistics that support the information presented in chapter four of this thesis.

3.3 The interpretive paradigm

The interpretive paradigm has its roots in hermeneutic philosophy, with the term hermeneutics "derived from the Greek word ***hermeneuein*****,** meaning to understand or interpret" (Patton 2002: 114). According to Anon (2003), interpretive research is designed to deal with social reality i.e. the web of relationships, institutions, organizations, shared beliefs, cultures and meanings that exist in a group of people. This research paradigm in fundamentally concerned with meaning and seeks to understand people's definitions and understanding of situations as

well as produce descriptive analyses that emphasize a deep understanding of social phenomena (Henning, 2004). Neuman (2000: 71) asserts the following:

> *"An interpretive researcher wants to learn what is meaningful or relevant to the people being studied, or how individuals experience daily life."*

Interpretive research is based on the subjective and inductive interpretation of people's attitudes and behaviours. Knowledge is created via interpretation and independent thinking within a specific context. The interpretive paradigm is well suited to the qualitative approach as it enables the researcher to extract meanings and themes from data rich in detail and description. While scientific methods that rely on empirical and measurable evidence can only give us an incomplete account of a social reality, the interpretive researcher constructs knowledge through the analysis of human opinion and behaviour, and by studying the factors that determine them.

3.4 The case study method

A case study is a specific research strategy of social science in which the researcher investigates a single entity or phenomenon bounded by time and activity (i.e. a programme, event, process, institution or social group), collecting detailed context-driven knowledge by employing a variety of data gathering techniques during a sustained period of time (Merriam, 1988; Yin, 2003). Cohen *et al*. (2000) states that case studies strive to portray what it is like to be in a particular situation, allowing us to catch the close-up reality and thick descriptions of participants. This method is based on "context-dependent knowledge" and the "concrete experiences achieved via continued proximity to the studied reality and via feedback from those under study" (Seale *et al*, 2004: 421).

> *"A case study investigates the answer to specific research questions (that may be fairly loose to begin with) and which seeks a range of different kinds of evidence…which is there in the case setting, and which has to be abstracted and collated to get the best possible answers to the research questions. No one kind or source of evidence is likely to be sufficient (or sufficiently valid) on its own. This use of multiple sources of*

evidence, each with its strengths and weaknesses, is a key characteristic of case study research." (Gillham, 2000: 1)

Because the case study method is a sociological approach that attempts to highlight the features or attributes of social life (Hamel *et al*, 1993), it allows for an in-depth study of various factors that influence the attitudes and behaviour of participants. It is therefore a method adaptable to the subject matter and complex real-life situations, making it a valuable tool in the study of social systems, institutions and behaviour. To extrapolate information from a case study the unique features of the area, together with the more general features that would allow for extrapolation, need to be clearly defined. The defining characteristic of the Kat valley, that has affected the results of this research, is the history of IWRM participatory initiatives in area, in particular the upper and lower regions, facilitated mostly by Rhodes University researchers. This makes the Kat valley unique in that it has been the focus of several experienced researchers working in the area for more than 10 years, promoting environmental awareness and facilitating the formation and operation of local water management organizations. General features allowing for extrapolation would be the socio-economic situation of the rural village communities, their resulting marginalization from water management processes, as well as the dominance of White commercial farmers in the local economy, land ownership and local water management processes.

3.5 Triangulation

Qualitative researchers are subjectively involved with data collection and data analysis, where "data is collected in units of words or language" and measurement is excluded from the process; accordingly steps need to be taken to ensure that the data is impartial and trustworthy (Rossouw, 2003: 179;180). The triangulation method was used to confirm the accurateness of the data collected and involved collecting different sets of data using different data gathering methods to explore one set of research questions. Arkey & Knight (1999:21) assert that "by collecting diverse sets of data derived by different methods, there was thought to be less chance of making errors or of drawing inappropriate conclusions", and if the different methods provide you with corresponding data then you can be reasonably ensured of validity. If not, the researcher has to explain the discrepancy.

3.6 Methods

Data accumulated by different methods but concentrating on the same issue are part of what is called the multi-method approach (Gillham, 2000). Although the multi-method approach is simple, it is powerful in that even though individual methods might be flawed, the flaws of each are not identical; consequently "each new set of data increases our confidence that the research results reflect reality rather than methodological error" (Brewer and Hunter, 2006: 4). Several data gathering tools were used in this research and these are described below.

3.6.1 Document analyses

To contextualize the study and to evaluate work undertaken by researchers, both within the research field and the study area, related primary and secondary data sources in the form of journals, books, progress reports, theses, minutes of meetings and government publications, were collected, examined and critiqued. This was the first step in the research process and continued from the start of the project to its conclusion. A systematic perusal of the relevant literature provided information on national water policy and legislation requirements, the biophysical characteristics and history of the study area, and the establishment processes and functions of local water management institutions. The main advantage of document analyses is that it provides information not easily accessible by other means as well as information that may otherwise have been overlooked.

3.6.2 The pilot study

A pilot study was conducted in August and September 2004 to test the feasibility of the household interview schedules, the main data gathering tool of the research project. A pilot study or survey is defined as a small-scale version of a study that is carried out before the actual investigation is done to determine how realistic or workable a research method or methodology is. In the context of this research the pilot study was undertaken to test the appropriateness of the interview method i.e. were respondents able to understand and answer questions with ease, was the amount of time taken to complete the interview reasonable, were respondents willing to answer the type of questions asked?, etc. The survey consisted of 10 household interviews which were conducted with households in five randomly selected

villages in the Kat valley. From the information gathered through the administration of the interviews, the interview schedule was edited and simplified.

3.6.3 Selecting the sample

The Kat valley is unofficially divided into three sub areas according to the voting and operation procedures of the Kat valley WUA. These three regions are the upper, middle and lower Kat valley (refer to Figure 1.3). It was therefore necessary to include villages from all three regions in the household interview sample to ensure equal representation. The number of households selected per village was based on an estimate of the total number of households per village. Table 3.1 below shows the number of households interviewed in each village as well as the number of CF representatives per village.

Table 3.1 Location, number of interviews and number of CF representatives per village

Kat Valley region	Village	Number of households interviewed	Number of CF representatives
Upper	Fairbairn	10	2
	Ekuphumleni	10	2
	Hertzog	12	2
Middle	Tidburry-Toll	5	2
	Cimezile	12	1
	Gonzana	10	2
	Blinkwater	6	1
	Oakdene	6	1
Lower	Sheshegu	11	None
	Charl Grove	2	None
	Mildenhaal	6	None

A minimum of three villages were selected per region, with each region having different levels of representation in the catchment forum. For example, the upper Kat valley villages had two CF representatives per village, the middle between one and two, and the lower villages had none. This ensured that information was gathered from a variety of households, not only those who were familiar with the catchment forum and vice versa. Careful

consultation with Monde Ntshudu, a field researcher who had been working in the area since 1997, resulted in the selection of a total of 11 villages included in the interview sample (Refer to Figure 3.1).

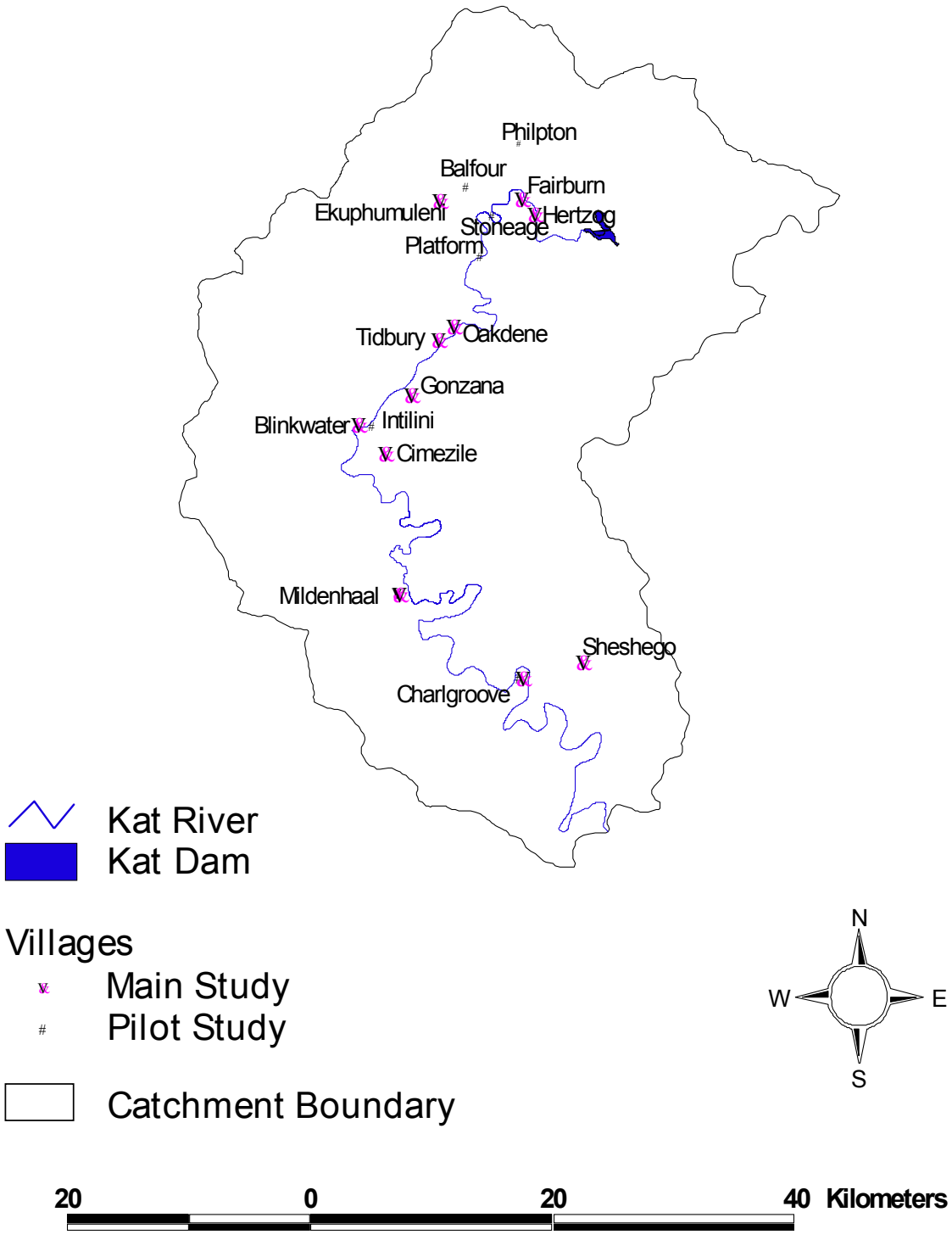

Figure 3.1 Villages selected for the research sample

The systematic sampling method was used to decide which households in each village would be interviewed. It ensured that the sample was as representative of the entire population as possible. Every household in each village had an equal probability of being included. The selection process was based on a sampling interval *n*, in which very n^{th} household was chosen from the total number of households present in the village selected, with n equalling to the total number of households in the village divided by the number of interviews required from each village.

3.6.4 Household interviews

According to Rubin and Rubin (2005: 6; 7), the purpose of conducting an interview is to find out "what happened, why and what it means more broadly…to discover causes and to explain or understand a phenomenon." Research interviews assume that "the individual's perspective is an important part of the fabric of society and of our joint knowledge of social processes and of the human condition" (Henning, 2004:50). The interview process allowed one on one questioning of households in their private homes. This presented the opportunity to engage with respondents on a personal level and to record in-depth, spontaneous information on their viewpoints. A total of 100 household interviews, including the pilot study interviews, were conducted in all three areas of the Kat valley.

A structured household interview schedule was designed with both closed and open-ended questions (refer to Appendix A). Closed questions required either yes or no answers or respondents selecting from a list of answers provided. Open-ended questions required detailed opinions as answers and respondents had to explain their answers. The interview schedule was divided into three sections: (1) household socio-economic characteristics, (2) water sources and water uses and (3) level of awareness of water management organizations. The first section included questions on respondents' personal details, household income and land ownership. The second section focused on access to and sources of water for domestic and productive use. The third section required the most detailed answers and questions focused on respondents' awareness and opinions of water law, state of the river and local water management organizations. Household interviews were conducted by a Xhosa speaking interpreter trained in the administering of interviews.

3.6.5 Questionnaires

Questionnaires play a central part in social research as they provide a rapid and relatively inexpensive way of discovering the characteristics and beliefs of the population at large (May, 1993). "If a site-specific case study is required, then qualitative, less structured, word-based and open ended questionnaires may be more appropriate as they can capture the specificity of a particular situation…where rich and personal data are sought…There is a clear structure, sequence, focus, but the format is open-ended, enabling the respondent to respond in her/his own terms. " Cohen *et al*. (2000: 248). Self-completion questionnaires were answered by executive committee members of the Kat valley CF and WUA (refer to Appendix B and Appendix C respectively), who were selected as target groups because they were the most familiar with the organizations' past and present activities and management processes. Questionnaires were personally delivered to respondents and collected in February 2005. In total 6 CF questionnaires and 6 WUA questionnaires were answered. Questionnaires were structured in the same style as the household interviews i.e. closed and open-ended questions that focused on respondents' opinions of CF and WUA activities, functions, and the relationship between the two organizations.

3.6.6 Focus group workshops

Cohen *et al*. (2000) define focus groups as a form of group interview which brings together a specifically chosen sector of the population to discuss a particular given subject. From these interactions data and outcomes are generated.

Plate 3.1 A group leader providing feedback at a workshop in Blinkwater

Focus group workshop participants are a relatively homogeneous group of people who reflect on the questions that the interviewer poses while getting to hear each other's responses and to make additional comments beyond their own original responses as they hear the opinions of others (Patton, 2002). The inclusion of this data gathering tool gave me the opportunity to gather village communities together and discuss the main issues identified in the household interviews. Participants were also able to engage with their fellow village members and residents from other villages to identify and discuss issues they considered important. The workshops played a vital role in adding to the validity of the research findings by increasing the number of participant responses, and allowing the comparison of data collected from the two workshops and the household interviews. Through these comparisons I was able to determine if the two sets of data correlated and was able to identify new issues that were previously undetected.

Two workshops were held in the upper and middle Kat valley on the 1st and 2nd of June 2005 at Blinkwater and Fairbairn community halls respectively (refer to Appendix D). Participants

were given the opportunity to determine the dates, venues and time structure of the workshops to ensure the best possible turn out. Invitations were distributed to 15 villages two weeks in advance of the events. A total of 133 participants attended the two workshops; these included village residents, community leaders and CF members. Participants were divided into groups according to their villages and each group elected a group leader responsible for documenting participants' responses. Groups were given a list of questions translated into Xhosa which they were asked to discuss and answer. Once all groups had completed discussing and answering the questions, each group leader presented the results to everyone present. At the end of the sessions all participants were asked to put forward any questions or comments they had with regards to the information presented or any issues they felt would be relevant to the research. Three Xhosa-speaking facilitators were present at each workshop to assist groups by clarifying any issues they were unsure of and answering the questions they had. Both workshops lasted approximately two hours. All communication was done in Xhosa by the workshop facilitators and two Xhosa translators were present to write down the participants' responses. At the end of both workshops the main workshop facilitator and myself sat down together to translate all the information recorded into English.

3.6.7 Observation

Throughout the research process I have adopted a non-participatory observer role at CF and WUA meetings and workshops. By observing the interactions taking place I was able to add to and improve the research data collected. Observation has played a vital role in determining what kind of participation takes place, the priorities of participants as well as who participates at meetings and workshops and who does not. I was able to gather data from situations as they happened instead of relying solely on second hand information from interviews and questionnaires that could be biased or avoid certain topics. From the start of the research project, the observation method has helped particularly with separating the reality of the research situation from preconceived ideas, and has showed that what is said or assumed to be happening 'on the ground' is not necessarily taking place. Cohen *et al*. (2000: 305) states that the observation method "enables researchers to understand the context of programmes, to be open-ended and inductive, to see things that might otherwise be unconsciously missed, to discover things that participants might not freely talk about in interview situations, to move

beyond perception-based data (e.g. opinions in interviews) and to access personal knowledge."

3.7 Data analysis

The analysis of qualitative data has been an ongoing, in-depth process that began with the transcription of raw data into separate spreadsheet documents. The transcribed data was then carefully read, analyzed and divided into separate groups, based on their related meanings. Rossouw (2003: 166) describes this division of related data (coding) as a subjective approach that requires the researcher's interpretation of the underlying symbolic meaning of the data, and requires that value judgments about the measurement be made. Through the interpretation process, themes were extracted, described and compared with each other to generate the research results. Analyzing quantitative data involved assigning codes to each answer, where questions required yes or no answers or respondents were asked to select from a list of given answers. Using these codes the percentage of each response was calculated. Table 3.2 below links the research objectives with the data gathering tools and type of data analysis used to achieve them.

Table 3.2 Research matrix

OBJECTIVE	METHOD	ANALYSIS
1. To determine the socio-economic profile and water supply situation of village communities	Primary data: Household interviews, observation	Quantitative and qualitative
	Secondary data sources: Analysis of theses and research reports	Qualitative
2. To study the functioning of local water management organizations by identifying their objectives and determining if and how these are achieved	Primary data: Observation, questionnaires administered to CF and WUA executive committee members	Qualitative
	Secondary data sources: Review of minutes, government publications and related reports	Qualitative
3. To investigate the relationship between Kat valley village residents and local water management organisations	Primary data: Household interview schedules, questionnaires, focus group workshops, observation	Qualitative
	Secondary data sources: Research reports and minutes	Qualitative
4. To make recommendations to improve the participation of poor, marginalized communities in local `IWRM	Primary data: Household interviews, questionnaires, focus group workshops, observation	Quantitative and qualitative
	Secondary data sources: Review of international and national publications and case studies	Qualitative

3.8 Limitations of the research methodology

The issues of subjectivity and bias have surfaced repeatedly in the literature and during the data analysis and interpretation process. Information extracted from documents contain the author's bias, information supplied by participants in workshops, interviews and questionnaires contain the respondents' own personal biases, and the researcher, through her observation of events and interpretation of the data, attaches her personal understanding to the interpretation process. As such, interpretive research draws its conclusions from the researcher's interpretation of the data collected. The conclusions abstracted are therefore subjective and the researcher has to take great care in ensuring they are not merely a reflection of her sentiment, but the true, reliable views of the participants. Creswell (1994), points out that qualitative research is interpretive research; as such, the biases, values, and judgment of the researcher become stated explicitly in the research report. While the subjective nature of qualitative research is often cited by its detractors as its main flaw, Creswell states that the 'openness' of qualitative research is useful. It allows us to study the complex, social issues inherent to communities that cannot otherwise be fully explored through the limited numeric approach of quantitative analysis. While the overall interpretations and conclusions drawn from the extracted themes remain those of the researcher, ensuring that all the information described has remained true to the meanings of participants' responses has been a crucial, continuous process in this research.

While some scholars argue that conclusions drawn from a single case study cannot be applied to other cases as each context is unique and dynamic, it is the researcher's belief that while every situation is unique and influenced by a variety of distinct internal and external factors, similarities are also present. McMaster (2002) states that while interpretive research is situation specific and therefore cannot be replicated, ideas and themes can be transferred to other settings. Researchers working within the IWRM field can easily identify recurring patterns and apply this information where and how they see fit.

Due to the large surface area of the Kat valley, the many villages located within the area, and financial and time constraints, a limited number of household interviews were conducted within selected villages. Although it would have been preferable to include more villages and

thereby increase the total number of interviews, the above factors had to be taken into consideration. In addition, the household interview method required the most amounts of time and work in its design, implementation and analysis of data. Including more interviews would have increased these and therefore would not have been feasible.

3.9 Conclusion

Through the examination of various documents and consultation with several experts on social science methodology, the approaches and methods described above were determined to be the best suited for this research project, in relation to the types of data required to achieve the research aim and objectives. The qualitative research framework and the associated data gathering techniques selected have complemented and completed each other throughout the research process. The multi-method approach has helped address the issue of validity and the rigorous data analysis and interpretation procedures have yielded reliable research findings. The information provided in this chapter underlies the planning, fieldwork and write-up phases of the research project and provides a holistic view of the research path undertaken.

CHAPTER 4: SOCIO-ECONOMIC AND WATER SUPPLY SITUATION

4.1 Introduction

Chapter four describes the results of the data gathered on (1) household socio-economic characteristics and (2) household water sources and water uses for both domestic use and food production. Results are presented in table and graph format. Brief explanations of the results are also given. The information presented originates from the data gathered using the household interview method.

4.2 Household socio-economic characteristics

Merrey *et al*. (2005), states that in integrated NRM the household is characterised as the decision-making unit. Collecting primary socio-economic data at the grassroots community level allowed for the analysis of the existing socio-economic situation in village households and for the identification of the crucial factors that affected people's attitude and actions. Furthermore, in order to undertake a community case study, with the aim of providing effective and sustainable recommendations for community issues, collecting such data is essential as the socio-economic situation of a community largely defines their priorities and behaviour.

A total of 100 households were interviewed (refer to Table 3.1). The results demonstrated that households were characterized by a lack of amenities. Seventy households were without electricity and depended on paraffin and gas as their source of light and heat. Fifty-nine households were constructed of mud and tin and the remaining 41 were constructed of brick and tin. All households interviewed utilised pit latrines located a few metres away from the house.

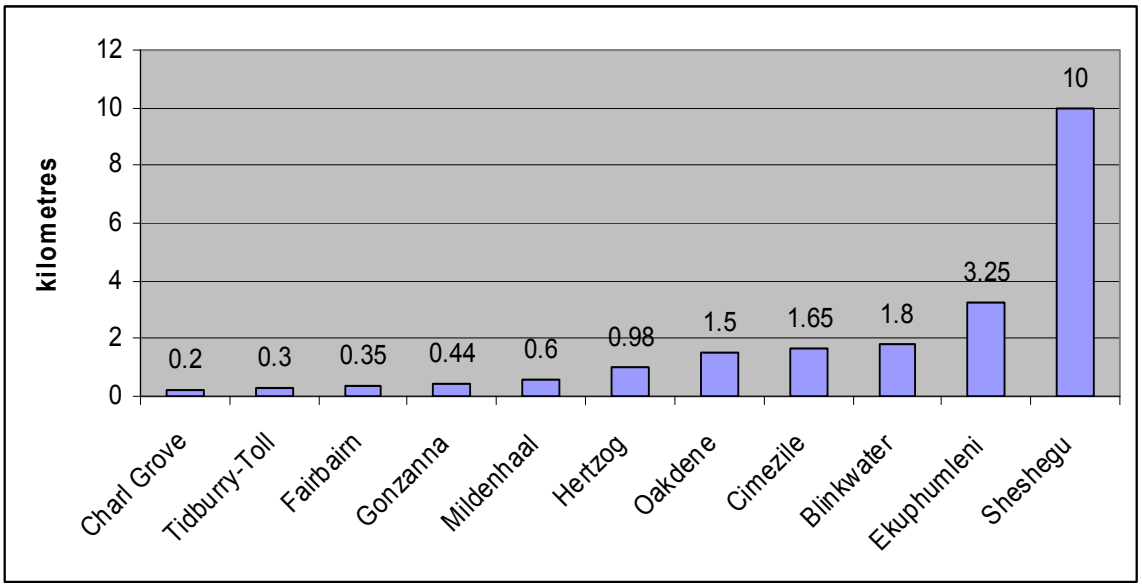

Figure 4.1 Average distance from households interviewed per village to Kat River

Figure 4.1 shows that Charl Grove was the village situated closest to the Kat River (approximately 0.2 km) and Sheshegu was situated the furthest away (approximately 10 km). The following data on household members were generated:

Average age of head of households	=	59 years
Average level of education for head of households	=	Grade 6
Percentage of female head of households	=	49 %
Average age of respondents	=	48 years
Percentage of female respondents	=	57 %
Average number of residents per household	=	5

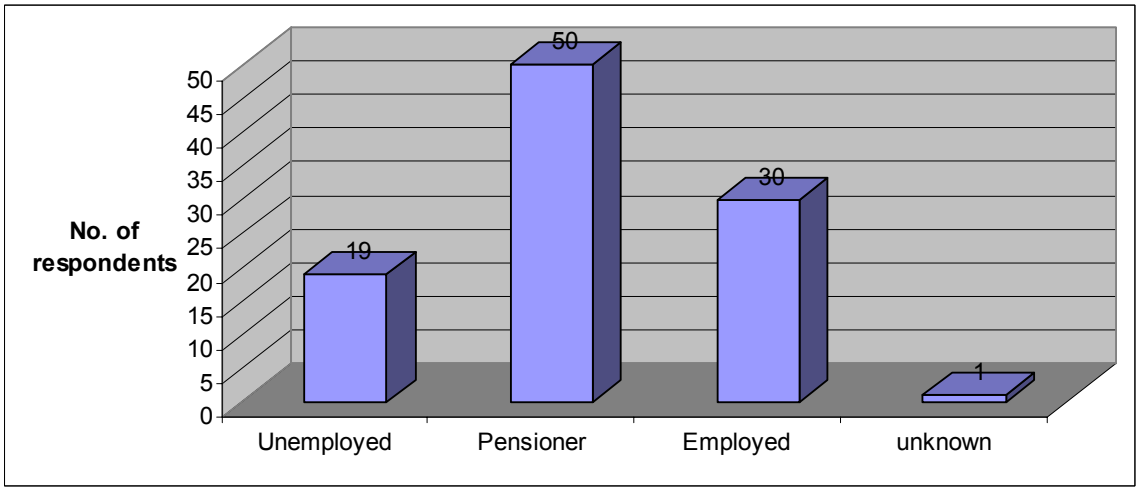

Figure 4.2 Employment status of heads of households

The average number of household members earning an income in the last 12 months was one member per household. Figures 4.2 and 4.3 indicate the employment status of head of households and their job descriptions respectively. Residents receiving government pensions were included as earning an income. Fourteen head of households had no formal education, three held teaching diplomas and one had attended Adult Basic Education Training (ABET).

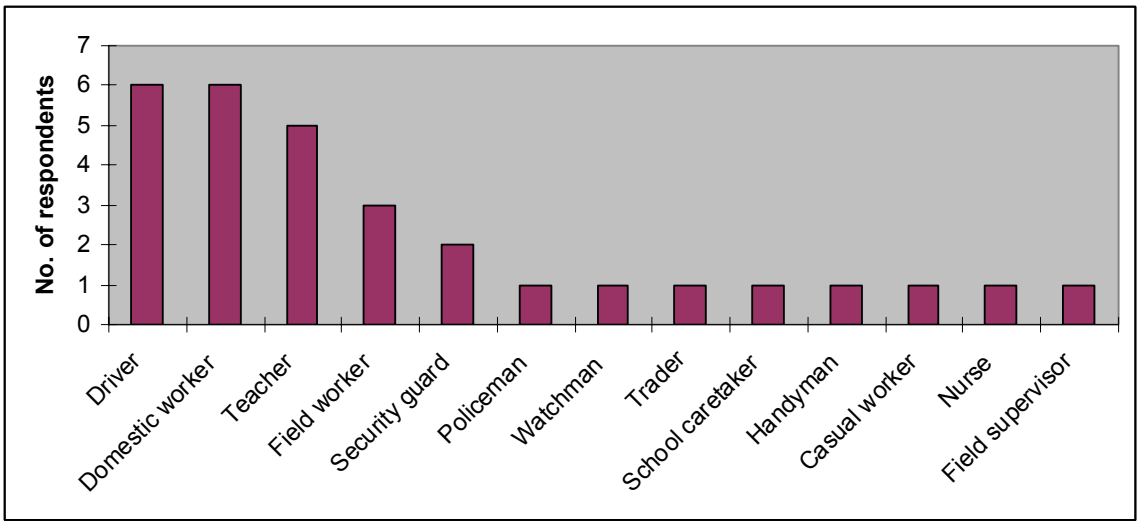

Figure 4.3 Job descriptions of employed head of households

Forty two households were entirely supported by government grants and had no alternate source of income. Out of the 100 households interviewed, 74 received government grants in

the form of pensions, child grants and disability grants. Thirty two households received more than one government grant. Of these households 24 received two grants and 8 received three grants per month.

Table 4.1a Monthly income brackets for head of households[9]

Income bracket	Number of households
< R200	2
R200 - R500	11
R500 - R800	39
R800 - R1200	11
R1200 - R1500	14
R1500 - R2000	4
R2000 - R2500	1
R2500 - R3000	5
>R3000	1
Not willing to provide	12
Total	100

[9] Quarterly Rand-US Dollar exchange rate (October-December 2004) : 5.9461 (Department of Labour, 2005)

Table 4.1b Total household monthly income brackets

Income bracket	Number of households
<R500	11
R500 - R700	2
R700 - R1000	31
R1000 - R1300	12
R1300 - R1700	14
R1700 - R2000	7
R2000 - R2500	4
R2500 - R3000	4
R3000 - R3500	2
R3500 - R4000	1
>R4000	0
Not willing to provide	12
Total	100

Tables 4.1a and 4.1b provide information on head of household monthly income brackets and total household monthly income brackets respectively. Of the 88 households willing to provide information on monthly incomes, 39 stated that the head of the household earned a monthly income within the R500-R800 income bracket. Thirty one households indicated that their total household monthly income fell into the R700-R1000 income bracket.

Of the 100 households, 49 did not know who the land they lived on legally belonged to. Seven households claimed they had title deeds to the land they occupied. Twenty four households stated they had property rights or access to land for agricultural use. Of these 24, 20 households had communal property rights and the remaining 4 stated that they owned the land they farmed on. Figure 4.4 shows the ownership status of land occupied by households.

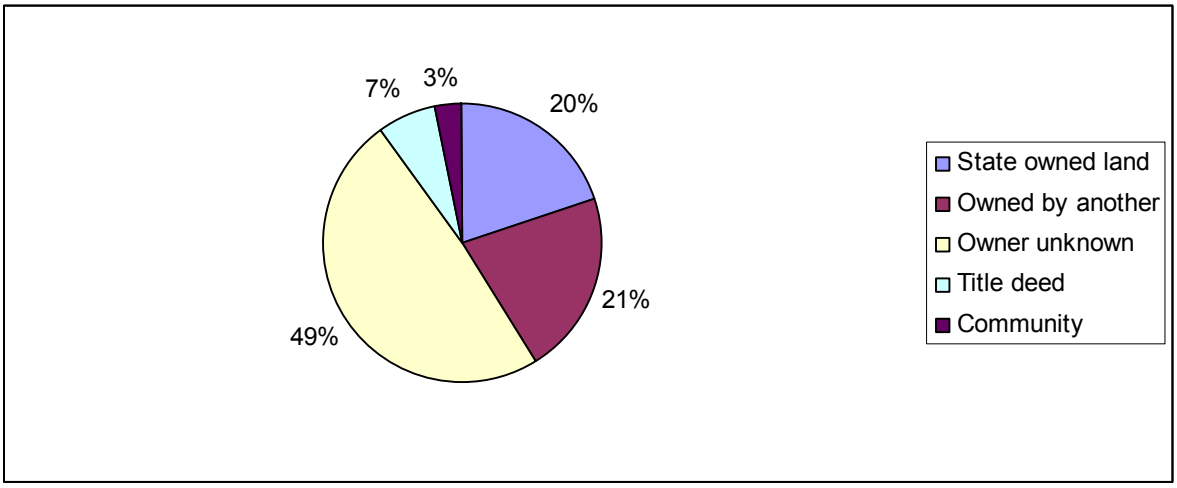

Figure 4.4 Ownership status of land occupied by households

4.3 Water sources and water uses

Information on the main water sources utilised by villages for both domestic use and food production is provided in this section. Results on respondents' perceptions on the quality of water they used and the challenges they experienced with respect to water supply are provided.

4.3.1 Water for household use

Of the three villages interviewed in the upper Kat valley two of them, Fairbairn and Hertzog, relied on the river as their main water source for household use. Households living in Ekuphumleni, situated the furthest away from the Kat River in the upper region, used water from street taps which they did not have to pay for. Of the five villages interviewed in the middle Kat valley, Cimezile and Blinkwater, located the furthest from the river, did not rely on the river as their main water source and depended on community taps instead. All households interviewed in the lower Kat valley stated that their main water source for household use was taps located outside their homes. Mildenhaal and Charl Grove are settlements located on land owned by commercial citrus irrigators while Sheshegu is a rural village located approximately 10 km away from the Kat River.

Eighty four households made use of a water storage system such as a water storage tank or drum to harvest rainwater. These households had made use of such systems between a period of several months to 26 years, with the water supply lasting between one week and two months, depending on the size of the household and the amount of rainfall in the area. Table 4.2 lists each village and their main water sources for household use in order of the primary sources utilised. Figure 4.5 shows the main water sources for household use and the number of households utilizing each source as their main water supply for domestic use.

Table 4.2 Village water sources for household use

Village	Water sources
Fairbairn	River, drums, tanks
Ekuphumleni	Taps, drums, river, stream, tanks
Hertzog	River, drums, tanks
Tidburry-Toll	River, drums
Cimezile	Taps, river, drums, tanks
Gonzana	River, drums, tanks
Blinkwater	Taps, river, drums, tanks
Oakdene	River, drums
Sheshegu	Tap, tank, drums
Charl Grove	Taps
Mildenhaal	Tap, drums, tanks

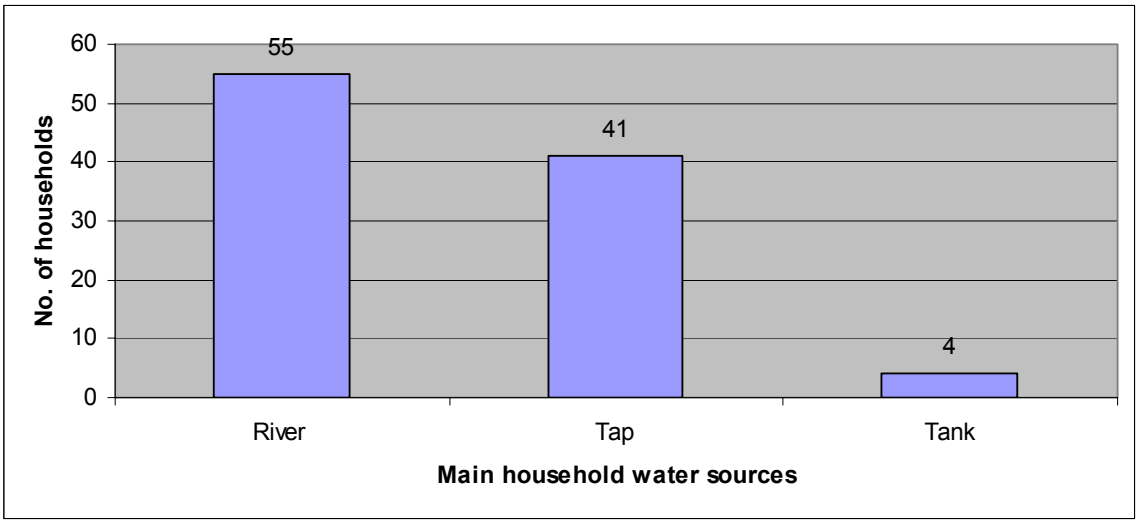

Figure 4.5 Main water sources for household use

Sixty nine respondents walked to their main water sources to collect water. One respondent, a 63 year old female pensioner, paid young boys in her village to fetch water for her three times a week. Figure 4.6 shows the different methods of water collection utilized by households. The distance to the main water sources ranged from a few metres from the household to 1.5 kilometres away. Water was collected between 1 to 5 times a day depending on the size of the household and distance to the water source. Either women or children were responsible for collecting water in 80 of the households. Figure 4.7 shows who in the household is responsible for water collection. Households collected between 40 and 200 litres of water per day. In 77 households, individuals used the water collected according to their own needs and no particular person decided how it was used.

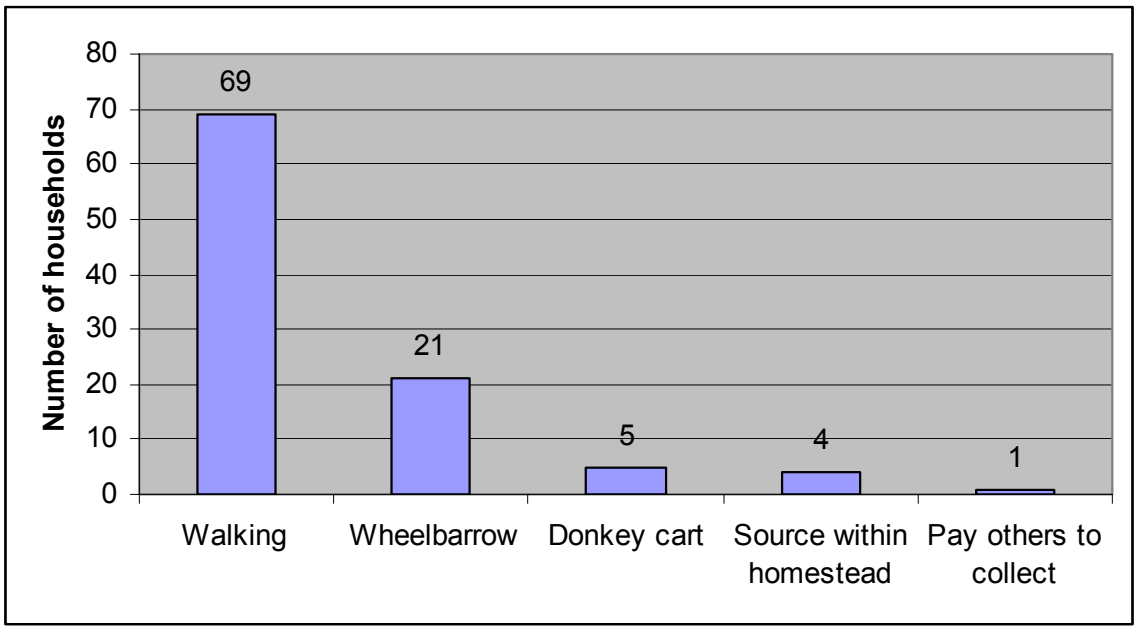

Figure 4.6 Methods of water collection

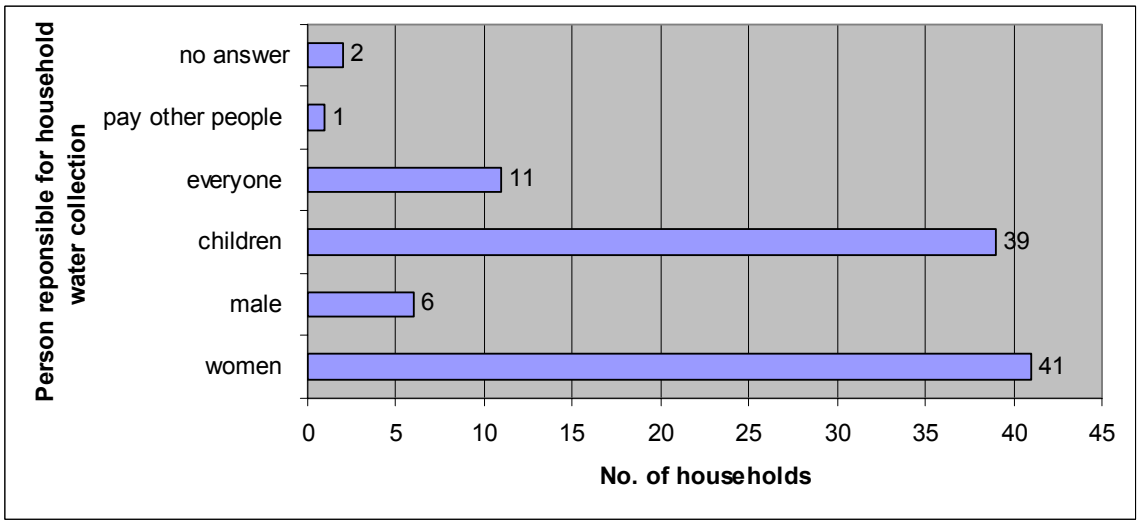

Figure 4.7 Person responsible for water collection for household use

All 12 households interviewed in Cimezile paid between R10-R30 per month for water from prepaid street taps. However, when households ran out of money to purchase water from the taps, they used water from the river. The two households interviewed in Charl Grove paid between R70 and R150 per month for water from taps. Two households from the pilot study living in the village of Ntilini in the middle Kat valley, paid between R10 and R20 per month (R10 per 100 litres) for water from prepaid taps. In total 16 households paid for water from

taps while the remaining eighty-four households interviewed did not pay for water for household use.

Fifty nine households indicated a willingness to pay for both a tap and a flush toilet system in their homes. Table 4.3 shows the water services households indicated they would be willing to pay for. Twenty eight households indicated they would be willing to leave the Kat valley if they were offered housing elsewhere with water services such as household taps and flush toilet systems.

Table 4.3 Willingness to pay for water services

Willing to pay for water services (taps and toilets)	Number of households
Yes	59
No	29
Tap only	10
Toilet only	0
Do not know	2

Households were asked to rate the quality of water from each of the sources they utilized. Figures 4.8a, 4.8b, 4.8c and 4.8d show these ratings. The quality of water used from the river was rated bad by 47 households out of a total of 70. The quality of water from rainwater storage drums was rated the best of all the water sources with 47 out of 55 respondents stating that the water acquired from them was good. Eighty one households did not boil the water they used for drinking. Ten households, 3 of them from Tidburry-Toll, stated that diarrhea was a problem in the area and cited contaminated water as the cause.

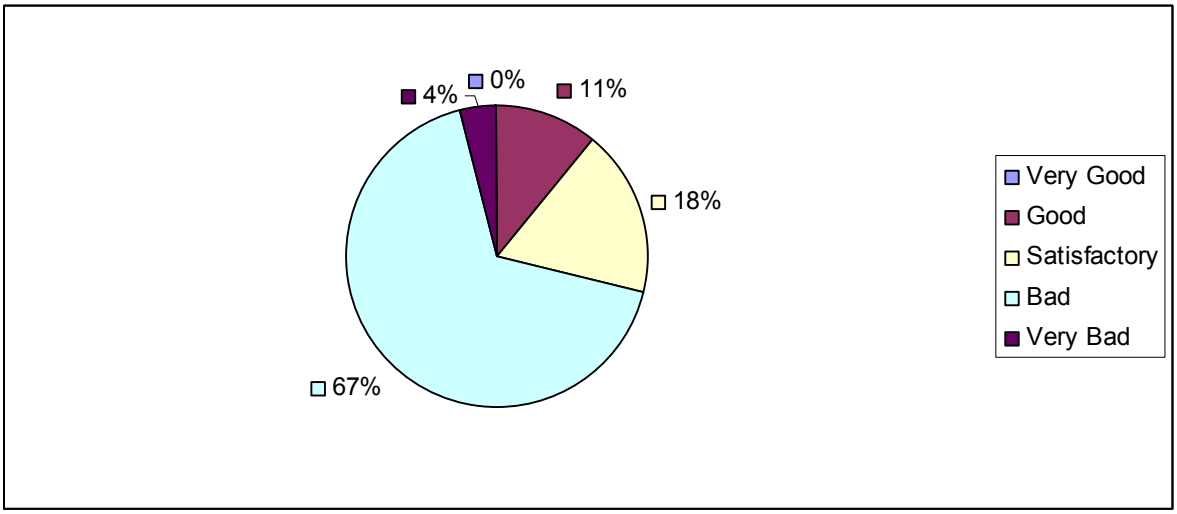

Figure 4.8a Households' ratings of the quality of water from the Kat River

Number of households = 70

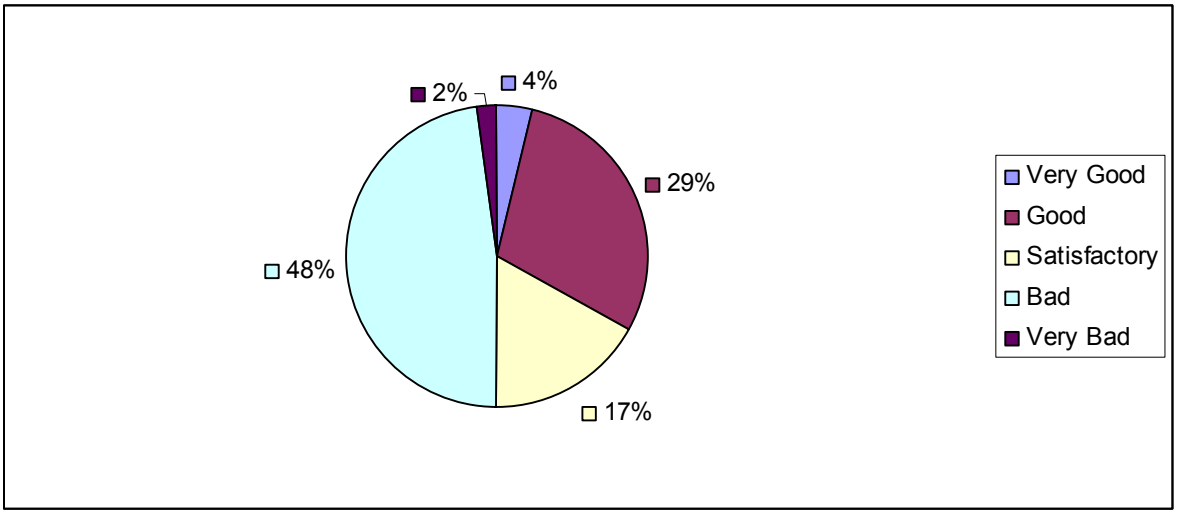

Figure 4.8b Households' ratings of the quality of water from village taps

Number of households = 51

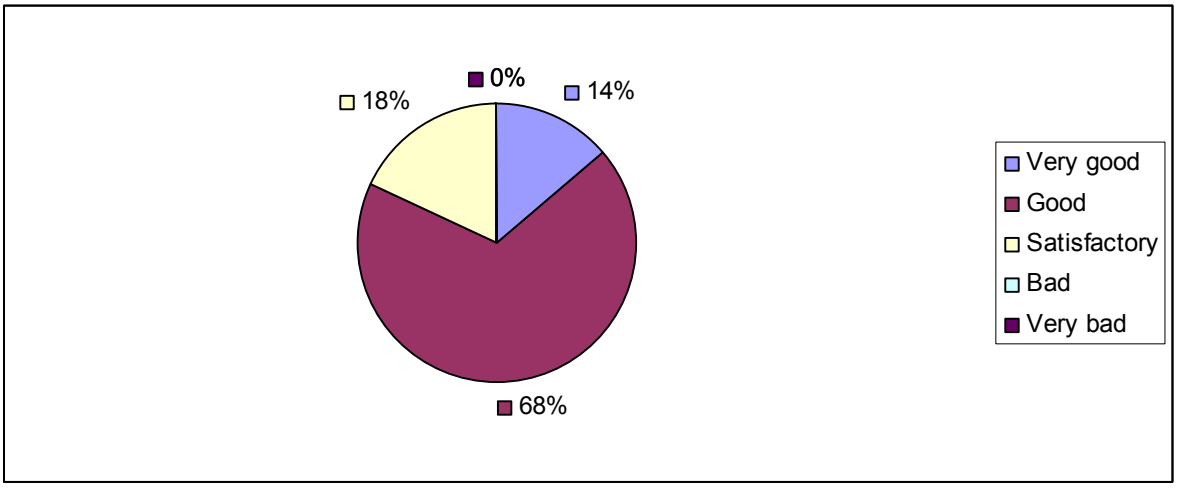

Figure 4.8c Households' ratings of the quality of water from rainwater storage tanks

Number of households = 21

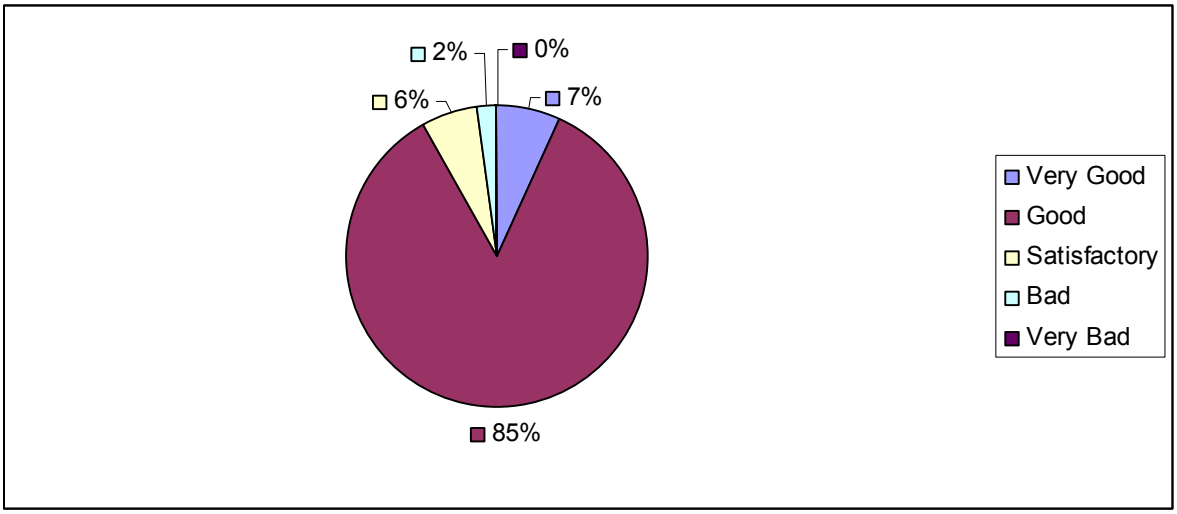

Figure 4.8d Households' ratings of the quality of water from rainwater storage drums

Number of households = 55

Households were asked to provide information on the main challenges they faced with respect to their water supply. They stated that not having access to a reliable and easily accessible water source in terms of distance, water quality and availability, were the main problems they experienced. Table 4.4 provides a list of the main water supply challenges faced by households. Fourteen households stated that taps were either damaged or the engines used to pump water to the taps were not working properly.

Table 4.4 Main water supply challenges

Challenge	Number of households
Distance to water source	30
Clean water not available	29
Pump engines broken	10
Broken taps	4

Number of households = 73

4.3.2 Water for food production

Thirty nine households used water for food production. Of these, 24 households engaged in subsistence agriculture and the remaining 15 households engaged in small-scale agriculture. Table 4.5 shows the main sources of water used by households for food production.

Table 4.5 Sources of water for food production

Water source	Number of households
River	22
Tap	10
Rainwater	4
Dam	3

Total number of households = 39

Three households paid for the water they used from prepaid taps to grow crops. Four households paid for electricity to irrigate their fields and monthly electricity payments were between R70 and R200. The remaining 32 households got their water for free. Households relying on taps were not always assured of water as the supply was often cut off. The river was the only constant supply of water for irrigation. Distances to water sources ranged between 10m to 3km from the irrigation plot/vegetable garden. Water was transported via irrigation pipes, buckets, donkey carts and wheelbarrows. All 39 households engaged in crop

production, including those who engaged in small-scale agriculture, consumed a portion of the vegetables they produced. Eight households from Fairbairn belonged to the HACOP[10] micro-project irrigation group.

Table 4.6 Reasons for not growing crops

Reason	Number of households
No land	14
Lack of water	11
River too far	10
No fence	9
No seeds	4
Too old	4
Bad soil	2

Total number of households = 54

The main reason provided by households for not growing crops was the lack of access to land followed by the lack of a constant, nearby source of water. Table 4.6 provides a list of the reasons given by households for not growing crops. Forty nine households that did not grow crops stated that they would like to do so in the future because it would provide them with an extra source of food, save money that was used to purchase food, and for those wanting to sell their produce, provide an extra source of income. Eleven households indicated that they would not want to grow crops in the future and cited a lack of labour and interest as the reasons why.

4.4 Conclusion

Details on the socio-economic profile of the Kat valley village households interviewed for this research highlighted the low levels of household incomes, extremely high unemployment rate

[10] Hertzog Agricultural Cooperative was established in 1994 by small-scale vegetable farmers from the upper Kat valley villages of Hertzog and Fairbairn. (Refer to Motteux, 2002).

and high dependency on government grants. This, together with the overall dissatisfaction with access to clean water for domestic use, access to land and water for production purposes, as well as a lack of amenities, indicate socio-economic similarities between Kat valley communities and other rural village communities in South Africa and other developing nations. The analysis of data classifies Kat valley village communities as living under a state of poverty.

CHAPTER 5: LOCAL WATER MANAGEMENT INSTITUTIONS

5.1 Introduction

Chapter five presents the results from section three of the household interviews which focuses on households' perceptions of issues related to local water management organisations. The results of the CF and WUA questionnaires are also presented. Results are qualitative and are quoted directly, presented as written explanations and in bullet format. Results from observations and focus group workshops will be used in Chapter 6 to triangulate the findings given here.

5.2 Awareness of water management issues and local organisations

The third section of the household interviews focused on households' awareness of and opinions on the NWA, their rights to water, the Kat River ecosystem, the Kat valley CF and WUA, and local socio-economic issues.

5.2.1 Households' perspectives on water law and their rights to water

Eighty five households stated that they had a right to clean water for drinking and household use because clean water was essential for their survival and good health. Nine households did not know of any rights they had to water and three households stated they had no rights to water. A 62 year old female respondent from Fairbairn stated:

"I do not have any rights to water because there is no one for me to go to and ask where is the water when there is no water available."

Eighty one households did not know about the existence of NWA. Eighteen households had heard about the NWA from awareness workshops hosted by Rhodes University researchers in the upper and middle Kat valley or from announcements made via the radio. One respondent, a 33 year old female from Hertzog, had read about the NWA in an agricultural booklet.

Twelve households were able to comment on aspects of the new water law they felt would help them. They stated that the law would help them by giving everyone access to water and would help prevent them contracting waterborne diseases such as cholera. Households stated that they were concerned that certain aspects of the law would prevent them using water the way they wanted to. The main concerns expressed were:

- Having to use a limited amount of water each day (17 households)
- Paying for water (13 households)
- Water being too expensive to afford (6 households)
- Not having access to water for irrigation (5 households)

It was explained to households that two of the main aims of the NWA were to (1) enable previously disadvantaged communities to participate in the management of local water resources and (2) ensure that everyone has access to water and to the benefits of using water. Households were asked to comment on what these aims meant to them. With regards to the first aim respondents answered that it meant they were now equal and would have a say in how water was used. They would be kept informed on important water issues, such as when water would be released from the Kat dam, and be able to complain about issues they were unhappy about. A 42 year old female from Ekuphumleni stated:

"I am glad that someone is going to listen to us. This has never happened before."

While most responses to this aim were positive and hopeful, six respondents stated that the aim meant nothing to them because they had seen nothing being done to implement it.

According to households the second aim meant they would have access to clean water in their homes whenever they wanted and that this would result in them not having to travel long distances to fetch water. They would also be able to access water to irrigate their fields, plant vegetables at anytime of the year without having to rely solely on rainwater to water their crops, as well as increase the amount of crops they planted.

Respondents were asked to comment on how effective they felt the new water law had been in achieving the above two aims in their communities thus far. Of the 88 responses, all stated that they had seen no evidence of work being done to achieve the above aims and the new water law was therefore not effective in achieving them.

5.2.2 Households' perspectives on the Kat River ecosystem

Eighty eight respondents had not heard of the ecological Reserve,[11] while twelve had learnt of it through reserve determination workshops hosted by Rhodes University researchers. Respondents who had learnt about the Reserve defined the ecological Reserve as the amount of water that must always flow in the river in order for it to be healthy. Sixty two respondents stated that the health of the river was threatened because of the following reasons:

- Communities were threatening the river's health (24 households)
- There was not enough water in the river (13 households)
- Livestock polluted the river (13 households)
- People used the river as a toilet (6 households)
- People used the river as a dumping site (3 households)
- People did their washing in the river (3 households)

Twenty seven respondents felt that the health of the river was not threatened because the river always had water and they had been using and drinking river water for many years with no ill effects. Six respondents stated that they did not know whether the health of the river was threatened or not, as they lived far away from the river and did not come into contact with it often.

Fifty seven respondents felt that the river should be protected for the following reasons:

- To ensure the wellbeing of the river ecosystem (24 households)
- To prevent livestock from polluting the river (16 households)
- To ensure that the water residents drank was clean (14 households)
- To prevent sewage from entering the river (2 households)
- To prevent people from washing in the river (1 household)

[11] The quantity of water determined and set aside for each major water resource to sustain and protect the river ecosystem. The amount is extracted from the total amount of water available and from this resulting amount other water users such as farmers, municipalities, industries, etc. are allocated water. Refer to Van Wyk *et al*, 2006. Providing information about the ecological Reserve was a major component of environmental workshops held in the upper and middle Kat valley during the formation of the Kat valley CF.

Eleven respondents felt that the river should not be protected because it was not at risk. Some respondents stated that if it were protected livestock would not be able to drink from it. A 75 year old male from Fairbairn stated: *"It is impossible [to protect the river] because no one can control people's actions here."* Ten respondents did not know whether the river should be protected or not.

Respondents were asked how the quality of water resources could be improved or protected for the use of future generations and provided these answers:

- The river should be fenced (30 households)
- The river should be cleaned on a regular basis (5 households)
- People should be employed to look after the river (5 households)
- The installation of taps and toilets would mean the river would not be disturbed (3 households)
- Prevent soil erosion (2 households)

It was explained to respondents that water users who use water other than for domestic use, such as irrigation for commercial purposes, will have to apply for licenses so that the amount of water they use can be controlled and charged for. They were asked for their opinions on this and provided the following answers:

- It was good because it would prevent the overuse of water from the river (32 households)
- It was good because it would prevent wealthy farmers exploiting the resource (17 households)
- It would facilitate the equal use of water i.e. everyone would pay the same amount per unit (10 households)

The response to the control and payment of water for commercial purposes was very positive because village residents did not see themselves as present or future bulk users of water and therefore did not expect the requirement to affect them. The large-scale citrus farmers were considered by many as using large amounts of water without considering the needs of the

village communities. Respondents felt that these farmers should pay because they were making a lot of profit through their use of river water for irrigation.

5.2.3 Household's perspectives on the Kat valley CF

Respondents were questioned on their knowledge of the CF which included their awareness of its existence, purpose and their opinions on the functioning of the organisation. Of the 100 households interviewed, 48 had heard about the CF through community meetings, CF workshops or via other community members. All households that had heard of the CF lived in upper and middle Kat valley villages, with either 1 or 2 CF village representatives. None of the lower Kat valley households interviewed knew about the CF. Respondents who were able to comment on the functions of the CF stated the following:

- To protect the environment and solve environmental problems (24 households)
- To create jobs (5 households)
- To fix dongas and prevent soil erosion (5 households)
- To look after the communities (2 households)

Respondents referred to the Landcare project[12] and environmental awareness workshops as the CF activities they were aware of. Most of those who were able to comment on the functions of the CF, had either been involved in the Landcare project or had attended CF workshops. They knew who their CF village representatives were and stated that their representatives did keep them informed of CF activities. These respondents were also able to provide the names of the CF executive committee members. Thirty nine of the 48 respondents who knew about the CF stated that the organisation was needed in the Kat valley to create jobs for the communities, rehabilitate eroded land and deal with environmental issues. A 33 year old male from Gonzana stated: *"[The CF] helps us by providing us with new information, contacts and taking some steps in trying to improve our living style. They are our voices to people who can bring change in our catchment and they bring light to us because before we were thinking only white people knew about how we should live, undermining our knowledge."*

[12] A 2 year project funded by the Department of Land Affairs to curb soil erosion in the area. The project was managed by a CF steering committee together with Rhodes University researchers. Refer to Chapter 6.

Six of the 48 respondents stated that they did not know if the CF was really needed in the area. Most, while knowing of its existence, were unsure of its purpose and mode of operation. A 50 year old male from Blinkwater stated: *"I don't know the full story of how [the CF] operates and who is responsible to make sure that things are happening the way they should."* A 45 year old female from Cimezile stated: *"I've never had a clear picture of what they want to achieve in the end."*

Respondents were asked if, in their opinion, the CF adequately represented the water needs of their village communities. Eighteen answered yes. Of these several were unable to provide a reason for their answers. Those who did stated the following:

- They fixed dongas through the Landcare project and helped prevent sediment getting into the river (4 households)
- They helped look after the river (4 households)
- The CF represented them on the WUA (2 households)

Seventeen respondents answered that they did not know. Nine respondents stated that the CF did not adequately represent their community's water needs because of the following reasons:

- People still drank dirty water from the river (4 households)
- Even though the CF was present people did not have access to water (2 households)
- The CF did not provide solutions to water issues (2 households)
- The CF only concentrated on soil erosion (1 household)

Twenty four respondents indicated that either they or another member of their household had attended a CF meeting or workshop. They became aware of the meetings through written invitations or via CF representatives in their villages. On most occasions respondents had travelled to the meetings using transport provided by Rhodes University. Others had walked or used public transport. Respondents stated that they found proceedings at the meetings easy to understand because discussions took place in Xhosa or because interpreters were very efficient. They stated that processes were effectively demonstrated and translated into Xhosa. One respondent stated that because they worked in groups, if someone did not understand something they would ask other members of the group for clarification. Another stated that

the only aspect he liked was the drama group[13] that performed at a workshop. Respondents appreciated the fact that they were given the opportunity to ask questions and discuss issues in a group. A 31 year old female from Blinkwater stated: *"The facilitator explained very clearly and you get a lot of chances to ask questions."*

Those who had attended CF meetings were asked if they experienced any difficulties or problems with participating in the organisation. All respondents answered no, stating that they were always given the opportunity to voice their opinions and that people were treated equally at meetings. Participants were asked what they felt they had gained from participating in CF meetings and workshops, and stated the following:

- Knowledge and awareness about environmental issues (6 households)
- Negotiation and problem solving skills (4 households)
- Opportunities to participate in discussions (1 household)
- Employment through the Landcare project (1 household)

Respondents who did not participate in CF activities provided the following reasons:

- They had not heard about the organization (18 households)
- They were too old to participate (10 households)
- They had not been elected to represent their villages (5 households)
- They did not know how to get involved (1 household)
- Rhodes University researchers were no longer visiting their village (1 household)
- They did not attend meetings unless there was a job available (1 household)

Twenty nine respondents, who had not attended a CF meeting or workshop before, indicated that they would consider participating in future CF activities because the organisation would represent their needs and opinions, possibly offer employment opportunities, and keep them informed on important issues. Twenty eight stated that they did not know if they would consider participating in the future as it would depend on the organisation's activities and

[13] Part of the environmental awareness workshops facilitated by Nicole Motteux and other researchers prior to and during the formation of the Kat valley CF included using drama as a method to communicate certain concepts to the village residents.

objectives. Twelve stated that they would not participate in future activities, 10 because they felt they were too old and 2 because they did not live in the Kat valley full time.

5.2.4 Households' perspectives on the Kat valley WUA

Respondents were questioned on their knowledge of the WUA and their opinions on the functioning of the organisation. Of the 100 households interviewed, 18 had heard about the WUA through workshops hosted by the CF. Eight of these were unable to provide details on the organisation's functions. Ten stated that the WUA had the following functions:

- Ensure that all water users participated equally (4 households)
- Control the use of water (2 households)
- Ensure that people paid for water according to how much they used (2 households)
- Collect money from farmers (1 household)
- Ensure that people obeyed the law (1 household)

It was explained to respondents that WUAs had an important role to play in poverty alleviation and food security. They were asked to provide their opinions on this and gave the following responses:

- They were happy with this function of the organisation (7 households)
- So far they had not seen anything being done by the WUA that indicated this role (4 households)
- The WUA would create jobs (4 households)
- People would be provided with food (3 households)

Respondents were asked if they had seen any evidence of the WUA playing a role in poverty alleviation or food security issues in the Kat valley. They answered that they had not seen the WUA produce any results yet and that they had not heard anything more about the organisation since 2002. This was when the executive committee was elected and the village residents were invited to vote for their WUA representatives (i.e. domestic user and small-scale/emerging farmer representatives).

Respondents were asked if they felt that their village or community was given adequate opportunities to participate in the management of water resources in the Kat valley. Thirty six stated that they did not know whether this was true or not. Sixteen answered yes. The following reasons were provided:

- They voiced their opinions at workshops and meetings (5 households)
- They received feedback after meetings were held (3 households)
- They were involved in the Landcare project (2 households)
- They elected people to represent them (1 household)

Twenty four answered no and those who provided reasons stated the following:

- They had no say concerning water resources (5 households)
- They did not have proper access to water (4 households)
- They had not seen any results (4 households)
- They were not informed about water management issues (2 households)
- They were not told how to participate (2 households)
- They were not told when water from the Kat dam was going to be released (2 households)

Respondents were asked to provide their opinions on what would have to be done or changed to enable them and their communities to effectively participate in the management and conservation of local water resources. They provided the following information:

- Environmental awareness workshops and meetings were needed to educate communities (22 households)
- More information was needed to keep communities up to date with what was happening in the Kat valley (13 households)
- People should explain to community members how to participate (12 households)

A 32 year old male from Gonzana stated: *"We need to know exactly how to participate and there should be workshops now and again so that we are always aware of what is happening."*

5.2.5 Household's perspectives on poverty and socio-economic development

It was explained to respondents that one of the main functions of a CMA is to contribute towards social and economic development. They were asked what they would like a CMA to do for their village or community and provided the following responses:

- Create jobs (20 households)
- Provide clean water (10 households)
- Establish agricultural projects or provide agricultural training (4 households)

A 63 year old female from Balfour stated: "*More emphasis should be put on community farming. People are trying to farm but accessing water is a problem*."

Respondents were asked to explain what they understood by the meaning of the word 'poverty' and provided the following answers:

- Someone who is unemployed and has no money (58 households)
- Someone who does not have basic needs such as food, water and proper housing (35 households)
- Someone who does not have land to grow food and livestock (4 households)
- Someone who has no one to support them (2 households)

In total seventy five respondents considered themselves poverty stricken. The following reasons were provided:

- They were unemployed (31 households)
- They were dependent on government grants (14 households)
- They did not have enough money to buy food (12 households)
- They did not have clean water to drink (4 households)
- They could not plant vegetables (3 households)
- They relied on other people for financial support (2 households)
- They lived in a mud house (2 households)

A 55 year old male from Hertzog stated*: "I am unemployed & have children to feed and send to school. The little money that I get from selling vegetables goes to them."*

The remaining 25 did not consider themselves poverty stricken and provided the following reasons why:

- They had sufficient money to meet their needs (8 households)
- They received financial support from others (6 households)
- They had a source of income (5 households)
- They received a pension (3 households)
- They planted vegetables to feed their families (3 households)

Respondents were asked what should be done to improve the standard of living in their households and other households in their communities in terms of (a) access to water resources and (b) access to water services. They stated that with regards to access to water resources they needed better access to the river so that they could plant crops throughout the year and that they should be provided with pipes to irrigate their fields. With regards to water services they stated that each household should have a tap with purified water and they should be provided with proper toilets.

5.3 Results of CF questionnaires

The purpose of the CF questionnaires was to achieve the research objective of identifying the goals of the Kat valley CF and to obtain opinions from those most involved in the organisation's activities on whether these were being achieved or not. In addition, the researcher aimed to gain an understanding of the organization's mode of operation. The questionnaire was answered by six members of the CF executive committee who began their involvement in the CF at different times ranging between June 1999 and September 2003. These members included the chairperson and vice-chairperson. Members were asked to provide information on what motivates their participation in the CF as well as the progress and major achievements of the organization. They were also asked to comment on the difficulties experienced by the CF, possible solutions to these problems and their opinions on the Kat valley WUA.

The establishment of the Kat valley CF was closely associated with Rhodes University and the participatory research undertaken by Nicole Motteux and funded by the WRC. The two

were credited with bringing about its establishment by hosting a series of environmental workshops in the upper and lower Kat valley villages. During these workshops between 1 and 3 representatives from each participating village were elected to the CF.
"There was research done by Nicole [Motteux] in 1996 and 1997 at Fairbairn and Hertzog and the issues raised by the community made the researcher go to other communities of the Kat valley and the CF was formed" - Male respondent, Fairbairn.

Respondents began participating in the CF through the Landcare project or through being elected by their village communities to represent them at CF meetings. A female committee member from Blinkwater joined due to the influence of a relative:
"[I joined] through the influence of my cousin who was a CF member before I saw its vision and became interested."

Respondents stated that the main reason for their participation in CF activities was because the CF focused on community development and environmental awareness.
"I saw its vision and became interested, since it was based on community development, especially the water"- Female respondent, Blinkwater.

Members' responses differed with regards to how often the CF held meetings, stating that it largely depended on the availability of funds. Invitations were sent to village CF representatives or they were notified via telephone. Representatives then informed village residents of the meeting and provided them with the relevant details. On average CF meetings were attended by approximately 40 people.

Respondents stated that the following were the main issues discussed at CF meetings:

- Securing funding to finance new projects and reduce unemployment
- Getting government departments and other stakeholders to attend CF meetings
- Motivating CF members to participate more actively in CF activities
- Getting more villages involved in the CF
- Building capacity among members

The main functions of the CF were stated as being:

- Reducing poverty
- Keeping the rivers clean and ensuring a healthy environment
- Encouraging communities to become self reliant
- Developing strong relationships and good communication between villages

Members also viewed the CF as a representative body to 'bigger' organizations such as the Kat valley WUA and the yet to be established CMA.

"[The CF] is responsible to bring that 'grass roots' thinking to organizations like [the] WUA, CMA and local government as the CF is closest to the people,…foster co-operation between various stakeholders with a view to achieve a common understanding,…serve as a viable channel/platform were water related issues can easily reach people and where their voice can easily be conveyed to such organized bodies like the CMA or WUA" – Male respondent, Fairbairn.

Four respondents rated the progress made by the CF since its establishment as satisfactory and stated that if it were not for the lack of funds, resulting in transport and communication problems, as well as a lack of new projects, progress would be very good. Other reasons for a satisfactory rating were the fact that the CF is still in existence in spite of financial difficulties and that the organization has organized and hosted successful workshops.

A male respondent from Fairbairn stated: *"Whereas [the] CF has a problem of funding in terms of communication, transport and projects, [the] CF is still existing since 2000 because the members are still keen to serve as the CF."*

Two members rated progress as good and cited the successful management of the Landcare project for two years as their reason.

The following were cited as the CF's major achievements thus far:

- The mobilization of more than 18 villages in the Kat valley resulting in enhanced stakeholder participation
- The successful management of the Landcare project for two years

- The establishment of relationships with various stakeholders such as Nkonkobe municipality, the Department of Agriculture and Land Affairs, DWAF, as well as CFs from Umtata and Kwa-Zulu Natal
- Providing certain members of the CF with skills through involvement in the Landcare project and the management of CF activities

Members identified the following problems experienced by the CF since its formation:

- No reliable source of funding
- Lack of commitment from CF village representatives and CF members
- Lack of education and exposure to environmental and managerial tasks
- Lack of skills to write proposals
- Lack of capacity in handling challenges

The absence of a secure source of funding was identified as the major obstacle to the CF fulfilling its functions. Respondents suggested that in order to overcome this problem government and the local municipality should become deeply involved in CF activities and assist in empowering its members. Involving stakeholders other than village residents was seen as a way forward in acquiring funding. The money acquired would be allocated to educational workshops and training programmes for CF members. One respondent suggested that the CF approach the Uthingo Trust, a social investment initiative that operated the country's national lottery at the time and provided funds for small-scale community projects in the country's most disadvantaged areas. When asked what could be done to make the functioning of the CF more effective, a male respondent from Fairbairn stated:

"CF members [need] to be trained in what it means to be a CF member. To elaborate, it is easy to commit someone to action when they have an understanding of who they are and what they are supposed to be doing."

Another male respondent from Fairbairn stated: *"CF members themselves must respect the CF and make use of it."*

Answers varied when members were asked to rate the participation of local residents in CF activities. Two members gave ratings of very good stating that residents always attended

meetings and took part in workshop discussions, and two members rated participation as good because the CF had created job opportunities for residents through the Landcare project. Two members rated the response from local residents as bad and both stated that unless participants stood to gain something they felt was worthwhile, they would not participate. Respondents stated that the main reason for the non-participation of residents was because they were either not aware of the existence of the CF, or did not know of the importance of the forum. A male respondent from Fairbairn stated:
"During the CF establishment period research funds were a limiting factor and led to the research being continued in certain villages of the Kat, hence we are talking of broadening the base of the CF in the Kat valley."

All six respondents agreed that Kat valley village residents should participate in CF activities. Reasons included the fact that the CF was a community-based organization and residents' participation would therefore contribute to its success, that their participation would lead to a greater understanding of the purpose and activities of the CF and in knowing their responsibility in water-related issues. Respondents stated that their main interest in the CF as water users was to get clean water, access to water services and maintain a healthy river and environment.

All members rated the condition of the Kat River in terms of water quality as bad, citing the reasons below:

- Village residents living next to the river polluted the river e.g. washing was done on the river banks and the water used was disposed of in the river
- Farmers used chemicals on their crops and these were washed into the river
- The river was contaminated with faecal waste because people did not have access to proper sanitation
- Livestock polluted the river
- Soil erosion

Respondents were asked to comment on what they felt could be done to improve the water quality of the Kat River and provided the following answers:

- Taps and toilets should be installed in homes
- The river should be fenced
- Livestock should be fenced into grazing camps
- Projects that improved the condition of the river should be set up
- Awareness programmes/workshops that educate residents on how to protect the river should be organized
- Households should be provided with electricity so that they did not have to disturb the riverbank in search of firewood

All respondents agreed that the potential for business opportunities in the agricultural sector was good, if residents were given improved access to water resources.
"There is no industry in this area so all we are dependent on is soil. If we can cultivate our land it will be better." – Male respondent, Fairbairn.

One of the objectives of the questionnaire was to study the relationship between the CF and the WUA. Two members were under the impression that the WUA was no longer in existence because they had not heard about it for a long period of time. One respondent stated that because the WUA was a statutory body and the CF was not, some of the issues addressed by the WUA would help the CF and the CF could approach the WUA for funding. Another stated that the relationship between the CF and WUA was good because certain members of the CF were also members of the WUA, and they reported back to the CF on the progress of the WUA. Respondents stated that the purpose of the WUA was to license water users for business purposes, monitor water quality, transform old water laws and engage with all the different water users in the Kat valley. All respondents stated that the WUA was not fulfilling the above functions. Two respondents stated that the lack of involvement of the WUA in the CF was an issue of concern.

5.4 Results of WUA questionnaires

The purpose of the WUA questionnaire was to obtain information about the objectives and functioning of the Kat valley WUA. Questionnaires were answered by six members of the WUA, including one commercial citrus farmer, two small-scale/emerging farmers, two

domestic water users and a DWAF representative. Members began their involvement in the WUA between April 2001 and May 2005. Upon completion of the questionnaires certain members requested that their responses remain anonymous, therefore no description of the respondent is provided when quoting responses.

Under the new water law former Irrigation Boards were required to transform into WUAs. A respondent provided the following information when asked how the WUA was established: *"The interested group of farmers contacted DWAF…from then DWAF arranged a meeting with those interested water users. Minutes of agreement were kept, then DWAF [went] ahead and notified all the stakeholders i.e. local municipality, councillors, chiefs, churches. From then we set the date for the public participation meetings. We put the notice in [the] Daily Dispatch, local radio station and designed notice posters. From that we drafted the constitution with the farmers."*

Respondents became members of the WUA because they were part of the former irrigation board and stayed on to represent their interests, they were elected by communities or water user groups as their WUA representatives, or they experienced problems with the release of water from the Kat dam and became involved to attempt to resolve the problem. According to the WUA constitution members had to meet at least once a month. They were notified of meetings through written invitations, phone calls or email. WUA meetings were attended by approximately 7 to 12 members. According to respondents, the main issues addressed at meetings were the following:

- Provision of water licenses to farmers
- Water availability and conservation
- New memberships
- The Catchment Management Plan (CMP)[14]
- Outstanding accounts
- Water for lower Kat valley citrus farmers

[14] A CMP will determine how the water resources in an area are going to be allocated and utilised. The Kat valley WUA in partnership with Rhodes University is currently developing a CMP for the Kat valley.

According to the respondents, the main functions of the WUA were:

- To manage water releases from the Kat dam and water abstraction
- To collect water rates for the state
- To prevent unlawful acts that reduce water quality
- To determine the ecological Reserve
- To allocate the amount of water to be used by users

Three respondents rated the progress the organisation had made in achieving its purpose as slight, two rated it as satisfactory and one answered that there was no progress made. One member who rated progress as slight stated that there were no educational programmes in place to counter pollution, with sewage and other waste material still prevalent in the river. Another stated simply that there was still much more work to be done and a third respondent stated the following:

"People living in the catchment are represented at management level but no progress has been made on how the water should be allocated in the future and to whom."

One member stated that progress was "expected to be satisfactory" for the following reason:

"Because the constitution has been drafted well with details. All the functions are well defined and how things should be done is well stipulated. We have already had a number of workshops informing them about what to expect in principle."

According to the respondents the major achievements of the WUA were the development of a constitution, registration of the organization with DWAF, the effort to bring people of other races on board, and the fact that transition had occurred without any major conflict arising. Members cited the following problems experienced by the WUA since its establishment:

- Transport and communication problems, especially for members who were village residents, most of whom were unemployed.
- Lack of funding for education and agricultural projects
- Continued expansion of citrus farming in the unscheduled area[15]

[15] While all farms in the middle and lower Kat valley rely on the Kat River for irrigation water, there are two systems of access in place. The first is that of scheduled use, were annual allocation fees are paid according to the area of a farm that has been scheduled for irrigation. Lower Kat farmers opted out of the scheduled scheme. They therefore do not pay for their water each year and are referred to as 'unscheduled users'. They rely on

One respondent stated the following:

"The problem that I experienced during the establishment [of the WUA] is the level of understanding. If they don't understand they won't participate. Only a few will. These poor resource farmers are hands on farmers. They don't want to hear about things but they want to see. Attending a meeting is [not important] but rather a waste of time."

Suggested solutions were that a decision should be made on how much water could be allocated to the lower Kat valley farmers without damaging the strategic position of the scheduled area, the acquisition of funds for communication and transport costs from DWAF, and the involvement of government departments in the WUA, so that they could find a way to win the trust of all water users.

Respondents were asked to rate the participation of water users in the area in WUA activities. Two members rated participation as very good and one stated this was because the benefits of being members were well defined and clear, and that members realized that they needed the WUA because it was made up of a group of water users with the same water use objectives. One member rated participation as good and two rated participation as satisfactory with one of them stating that because irrigators are the major users of water, they are vulnerable to new developments in water use which results in their keen participation in the WUA. One respondent rated local participation in the WUA as bad and provided the following reason: '*Because communities started to lose confidence in associations which did not fulfil their promises*".

Four members stated that the main reason for water users not being involved in the WUA was that they did not know about the organization and its activities. One respondent stated the following:

"Because they think they are going to be robbed and lose what they have and it's better to go on their [own] way. They do not believe they could transform from subsistence farming to commercial. [They have] fears of disbelief."

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storing the excess water flowing past the upstream farmers in large instream weirs (Adapted from Farolfi & Rowntree, 2005).

Another respondent stated that there was no need for some water users to be involved in the WUA: *"There is no need. The water is there. The problem is infrastructure for supply and the WUA is not involved in that yet."*

Respondents gave the following reasons why water users should be involved in the WUA:

- It is a legal entity that will receive a share of a 54 million rand national subsidy from DWAF
- Pollution will be minimized
- It is an association that involves all the different water users in the Kat valley
- The WUA will look after the interests of all water users
- People are entitled to use water
- It is a useful forum for raising problems

Three members rated the water quality of the Kat River as bad because the water resource was shared with livestock and the problem of soil erosion decreased water quality. The water was therefore not considered suitable for human consumption unless treated. One member stated the following:

"Based on the last meeting of the WUA, one tends to have the feeling that some portions of the river have a problem. Some commercial farmers were complaining about sewage spilling into the river. But those are literate white farmers, illiterate farmers won't know whether the river is polluted or not."

Solutions to improving the water quality of the Kat River were the hosting of workshops to educate communities on the importance of the river's water quality, the involvement of DWAF in the WUA to assist with pollution problems, the interception of polluted water into the water course, improving the water release system from the dam and fencing the river.

For members who lived in the Kat valley village communities, their main interest in the WUA was ensuring access to potable water. The main interest for commercial farmers was securing access to water for irrigation.

Members were asked what was done to make the WUA as representative of all water users in the area as possible. They stated that the issue of representation was addressed in the WUA constitution, meetings and workshops were held throughout the catchment to make sure everyone was involved, and representatives of all water user groups (i.e. domestic water users, small holder farmers and commercial farmers) were elected. One member stated:

"We tried to make sure everyone was involved. We held general elections, posters were hung up everywhere, meetings were held to explain the elections and there were different candidates in each category."

When asked to comment on the relationship between the WUA and the Kat valley CF, respondents provided the following answers:

- There are members that are involved in both the CF and the WUA
- The forum has a representative on the WUA management committee who submits a report at CF meetings
- The CF was involved in the formation of the WUA and reports its activities to the WUA

One member stated that he was not clear about the relationship between the two organizations:

"This is the question I asked during the steering committee [meeting] at Rhodes [University] and nobody gave me a straight answer. The CF do not know what they are doing. They are just made up of community members. They need to be advised."

Three members stated that the purpose of the CF was to improve environmental conditions in the area. Another stated that its purpose was to empower people in order to use water most effectively. One member stated that he could not define the purpose of CFs:

"[The Kat valley CF] is responsible for catchment management but the WUA is an integrated WUA and is not only for farmers. What [catchment] forums are doing I cannot define at this stage."

With regards to whether or not the CF was fulfilling its purpose, one respondent answered no and did not provide a reason; two did not provide an answer to the question. Three respondents answered yes, stating that the CF had a representative from each village; it had

secured funding for erosion control, and had been very active in educating Kat valley water users.

One respondent stated that the Kat valley WUA and CF did not know each other well and that DWAF should act as a mediator and assist in establishing a stronger relationship. Members stated that in order for the WUA to be more effective in achieving its aims, the processes of drawing up the CMP and determining the Reserve should be speeded up, and that DWAF should hand over some of its responsibilities to the WUA. They stated that all stakeholders in the Kat valley should be involved in the WUA. One member commented that the organisation should support subsistence farmers in becoming financially independent.

5.5 Conclusion

The information provided in this chapter documents the opinions of those involved in and affected by IWRM processes in the Kat valley, in particular the rural village communities. In order to gain insight into rural community water issues and to facilitate effective participation from marginalised communities, attention must be given to the difficulties they experience with accessing water, what they feel can be done to improve their situation, and how they view water management institutions in their area. The results provided in this chapter give insight into these issues and represent a crucial step towards water management transformation in South Africa, which is, listening to and documenting the views of the rural poor. The final two sections in this chapter shed light on the functioning of the CF and WUA, their objectives, priorities and challenges, as well as their level of interaction with the surrounding rural communities.

CHAPTER 6: DISCUSSION

6.1 Introduction

The defining aspects and achievements of public participation in water management initiatives in the Kat valley are identified and reflected on in this chapter. The research results are discussed in relation to the main themes identified in the literature and factors that block the effective participation of poor Kat valley communities in local IWRM activities are explored. Where relevant, the results from focus group workshops and observation are used to substantiate household interview and questionnaire results. Participation is analysed from the perspective of rural community development. The relationships between rural village communities and local Kat valley water management organisations and authorities are discussed, as well as the mode of operation of these organisations. The conditions influencing residents' participation and non-participation in IWRM and the significance of focusing on rural women's participation in water sector reformation are also looked at. Finally ways to encourage a pro-poor, integrated/co-operative approach within and between water management institutions and government departments are explored.

6.2 Local water management in the Kat valley

The starting point for the establishment of local water management organisations in the Kat valley was in 1996 when Nicole Motteux began her research work in the upper Kat valley villages of Hertzog and Fairbairn. Motteux collected and analysed data from surveys and workshops and found that communities were unhappy with the quality of water they used from the Kat River for domestic use, including drinking water. The lack of decision making power regarding the release of water from the Kat dam for food production was also a serious issue within village communities. Together with other researchers from the Catchment Research Group based at the Geography Department at Rhodes University, Motteux successfully tendered a proposal to and secured funding from the WRC to address the concerns of village residents and deal with broader water management issues in the area. Subsequently the Kat River Valley Project was formed in 1998 and was managed by researchers from Rhodes University, including Motteux, who used participatory rural

appraisal (PRA)[16] techniques and action research[17] to build environmental awareness among the upper and lower Kat valley communities, specifically focusing on riverine management. Through this project the Kat valley Catchment Forum and Water User Association came into being. Subsequently, researchers from the Catchment Research Group have been undertaking a WRC funded project in collaboration with the WUA to develop a stakeholder driven plan for guiding water allocation in the catchment. The field research reported on in this thesis was carried out between January 2004 and July 2006. The information provided therefore relates to the situation during this timeframe.

There had been extensive participatory work done in the Kat valley which attempted to bring about greater environmental awareness among poor rural village communities (e.g. Motteux (2001, 2002), Burt *et al.* (2004), Rowntree (2006), McMaster (2002), etc). These researchers had a key role in guiding the nature of participation. My research has focussed on exploring the results of these participatory activities on the lives of the participants and is therefore not participatory research, but rather an analysis of its results. Consequently it has not directly influenced the direction and nature of participation in the Kat valley, and when I refer to work undertaken by participatory researchers in the area my own research is not included.

6.2.1 The Kat valley catchment forum

The first step towards the formation of a catchment forum (CF) in the Kat valley was a series of environmental awareness building activities that took place through meetings, workshops and transect walks planned by the researchers involved in the Kat River Valley Project. As a result of these workshops, the Kat valley CF was established in 2000 to fulfil a need expressed by workshop participants to become involved in catchment management issues Representatives from 17 villages in the upper and middle Kat valley were elected to represent the interests of their communities on the CF. The CF executive committee, responsible for the management of all CF activities, was elected in 2001. While there is no statutory

[16] PRA is an approach that promotes decentralization and the empowerment of communities using techniques that make use of graphic presentations such as transect walks, maps, diagrams and matrices (refer to Chambers, 1994 for more information).

[17] Action research is defined as a reflective process undertaken by an individual researcher or a group of researchers to solve a problem or bring about positive change within a community, while the researcher simultaneously attempts to improve her understanding of the problem.

provision for CFs in South Africa, their role in facilitating stakeholder participation in the establishment of CMAs and local water management issues is crucial to DWAF's vision of inclusive, participatory water management. Box 6.1 below quotes Simpungwe (2006) on the value of CFs in transforming South Africa's present water management setting.

Box 6.1 *There are more than 200 [CFs] that have emerged in various catchments in South Africa. They have become the first level of participatory catchment management. Ironically however, the current South Africa's National Water Act No. 36 of 1998 (NWA) makes no mention of [CFs] specifically, except that section 90 (1b) mentions the requirement to establish 'consultative forums'. Nonetheless, this research asserts that [CFs] represent the only water institution in South Africa capable of achieving the NWA's appeal for maximum participation in the decision-making process by representatives of all water users. The intended level of participation in water resource management hinted by the law is very high. An ideal situation is asserted to be a level where all residents of a catchment are in a position to negotiate water allocations and resolve resource based conflicts in an equitable way, through democratic channels. The Act requires, in section 2, that all institutions must have "appropriate community, racial and gender representation". Currently, I see [CFs] as the only medium through which this expectation can be achieved.* (Simpungwe, 2006: 15)

Results from CF questionnaires indicated that the most significant achievement of or activity undertaken by the organisation was the successful management of the Sisonke Landcare project. The questionnaire findings were confirmed by household interviews and focus group workshops. The project proposal was developed by researchers from Rhodes University together with members of the CF, to address the problem of soil erosion caused by unsuitable grazing practices in the area. The project work involved erosion control through stone packing, planting vegetation and fencing. Plate 6.1 shows the type of structures that were built to curb soil erosion and their effectiveness in promoting grass growth. The two year project, which ran from 2002 to 2004, employed members from the local rural village communities to assist in curbing gully erosion and secured 1.5 million rand from the Department of Agriculture. Participants credited the project with providing those who were involved with the skills and confidence to successfully undertake Landcare project activities.

For the first time CF members were given the opportunity to participate in the management process, thereby providing members with a sense of ownership for the project. The success of the Landcare project showed that given the correct financial and technical support, Kat valley communities were able to successfully undertake NRM projects. However, the shortcomings of the project, noted by the project facilitators, were the following: the absence of a long-term project sponsor as funding from the Department of Agriculture was limited to two years and the project was thereafter discontinued, a lack of involvement and assistance from other government departments, and no voluntary culture among village participants who were paid for their labour and time (Burt *et al*, 2004; Rowntree, 2006).

Plate 6.1 Landcare rock structures at an eroded gully in Fairbairn (Photograph supplied by Kate Rowntree)

The Kat valley CF represented the interests of poor rural village communities living in the upper and middle regions. Villages from the lower Kat valley were not represented and had

no involvement in CF activities. CF executive members stated in their questionnaire responses that a lack of sufficient funds was the reason for the exclusion of lower Kat valley villages during the establishment processes of the CF and subsequent IWRM activities in the area. Several of the settlements in the lower Kat valley were situated on land owned by commercial citrus farmers. Households living on these properties were in most cases employed by the farmers. Those included in this research accessed water for domestic purposes via taps provided and did not use water from the river. It should be noted that when interviewing households in some of these villages, access to them was regulated by the employers who in some cases insisted on being present at the interviews or only permitted a few number of households being interviewed. Other lower Kat valley villages, such as Sheshegu, are located considerable distances away from the regular CF and WUA meeting venues, therefore attending meetings would have been difficult for these residents. None of the lower Kat valley households interviewed knew about the existence of the CF or WUA. Bringing lower Kat valley villages into the CF was one of the main aims of the organisation because until this happens the forum cannot claim to be representative of the entire catchment.

Involvement from other stakeholders in the Kat valley i.e. commercial citrus farmers, local municipality and DWAF, was limited because the forum's primary objectives, related to community development and catchment management issues, differed from other major stakeholder groups. The village communities represented the area's poorest populations, with high levels of unemployment and a lack of basic services and amenities. They remained marginalized and largely ignored by government authorities. The CF was heavily dependent on outside funds for the scheduling of meetings and workshops, as well as the establishment and running of projects. Most monies were received via WRC project funds secured by researchers from Rhodes University's Geography Department, undertaking research on catchment management issues. This research involved the participation of Kat valley village residents via the CF. Hence the organisation's mode of operation was very restricted because it was largely determined by outsiders who decided how and when funds were used and for what purposes. This was observed during group meetings with researchers to plan forthcoming activities and while attending the planned activities. Informal discussions with senior CF participants confirmed this.

An issue identified from the CF questionnaire results and brought up during one of the focus group workshops, was that CF village representatives were not informing their fellow village residents on what was taking place at CF meetings. In response to this CF representatives complained that when they did call a meeting in their communities to discuss what had taken place at CF meetings, people would not attend. Several village groups stated at the workshops that communication between the CF and village communities was a problem. When interviewed later, some of the researchers involved with the CF stated that the organisation was in desperate need of revitalisation because it had reached a stalemate where people had entrenched their leadership positions and no new leadership was forthcoming. CF questionnaires showed that the chairperson and vice-chairperson had filled their positions since the establishment of the organisation, and the six committee members interviewed resided in one of three villages: Fairbairn, Balfour or Blinkwater.

The effect of CF village representatives on the awareness levels in the upper and lower Kat valley villages was unclear. There was no conclusive correlation between the number of households per village who knew of the CF and/or WUA and their activities with the number of CF representatives per village i.e. there was no indication that villages with 2 CF representatives had an increased awareness of the local water management organisations and their activities when compared to villages with only one CF representative.

Unlike the WUA, the CF is not a statutory body and there is no legal requirement for a constitution that outlines the objectives as well as the principal and ancillary functions of the organisation. Therefore the functions and priorities of the organisation are not well defined and people were confused about what it is the organisation wanted to achieve. It should be noted that the CF was not established to undertake development projects *per se*; rather researchers' principal aim was to facilitate setting up a structure through which members could participate in catchment related activities and voice their concerns. This was in response to a need expressed by village communities in the upper Kat valley to participate in water and catchment management issues. To a certain extent this had been achieved because the establishment of the CF provided a platform where residents could express their opinions and concerns, and a community-based organisation linking the different villages in the upper

and middle regions, with the aim of dealing with catchment issues, was successfully set up. However, in terms of its members actively participating in NRM with influential stakeholders through decision making and the sharing of economic benefits, little progress had been made up to and during the research process.

6.2.2 The Kat valley Water User Association

The adoption of the new NWA in 1998 required the transformation of all former irrigation boards into WUAs. "In essence the transformation of the 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" (DWAF, 2001: 32). The Kat valley WUA establishment process began in 1999 when the former irrigation board members approached Rhodes University researchers working in the area to assist in the transformation process. The entire process was facilitated by researchers from the Kat River Valley Project who also facilitated the establishment of the CF. A constitution was drawn up and approved by the Minister of DWAF in December 2001. The executive committee was elected in early 2002 comprising water user representatives from the three sub areas of the Kat valley. Representatives were elected for each of the three sub regions, each dominated by the following groups: commercial citrus irrigators, small-scale farmers and domestic water users.

Through the evaluation of minutes from 2003 to 2006 (refer to Appendix E for an example), the main issues discussed at meetings and objectives of the WUA were determined. These were the determination of the ecological Reserve[18], the development of a water allocation plan to determine how much water was to be allocated to users and at what cost, the allocation of water to unscheduled farmers in the lower Kat valley, how to solve the problem of small-

[18] The setting up of the Reserve for every major water resource in the country is a part of a CMA's duties. The reserve comprises of two parts: the basic human needs reserve and the ecological reserve. "The basic human needs reserve provides for the essential needs of individuals served by the water resource in question and includes water for drinking, for food preparation and for personal hygiene. The ecological reserve relates to the water required to protect the aquatic ecosystems of the water resource. The Reserve refers to both the quantity and quality of the water in the resource…" (RSA, 1998, Chapter 3). Because CMAs are either in the process of being established or not fully functioning, these responsibilities are undertaken by national DWAF until they are able to be transferred to CMAs. Until the determination of the reserve is concluded water allocations cannot begin.

scale irrigators in the upper Kat valley villages not paying for the water they used, and the problem of diesel and sewage entering the Kat River.

The NWA requires that a catchment management strategy be developed to manage the water resources in each water management area (WMA) i.e. each CMA is responsible for developing their own catchment management strategy (CMS). The purpose of a CMS, according to DWAF (2001), includes enabling public participation, setting principles for allocating water to existing and new water users, allocating water among competing users, and ensuring that the allocation of water promotes social and economic development, particularly among women and disadvantaged groups. The Kat valley lies within the Fish to Tsitsikamma WMA, for which there is as yet no CMA, and therefore no established opportunity for public participation in water management. In August 2004, under the supervision of researchers previously involved with the Kat River Valley project and in consultation with DWAF, the Kat valley WUA undertook to develop their own catchment management plan (CMP) which incorporated a water allocation plan for the area. This project is funded through the WRC and was still ongoing at the end of 2007.

Part of the process towards establishing a CMP was the inclusion of the KATAWARE model in October 2004, a simulation tool that projected future water use scenarios by collecting available data. Using a role-playing game to extract inputs such as annual production costs, prices of water licences, the economic value of in-stream water, etc. the model was able to generate "consequent outputs in terms of financial impacts, environmental impacts (effects on the ecological reserve) and social impacts (equity in water supply) of different water allocation strategies" (Farolfi *et al*, 2004: 1). The game was used to promote participatory decision making among WUA members by exploring possible scenarios for future water use and availability in the Kat valley and increasing member's awareness of the interrelated factors that determined them. Through actively participating in the role-playing game WUA members were able to use the game as a negotiation support tool and were made aware of the socio-economic and environmental factors that would have to be taken into consideration for future water allocation (refer to Gumede (in prep.), 2008).

Plate 6.2 WUA members playing the KATAWARE role-playing game

The organisation's close and sustained relationship with researchers from Rhodes University helped it evolve into a progressive, dynamic institution whose members were kept well informed and up to date with both local and national IWRM issues at meetings. The most active members of the WUA were the large-scale commercial citrus farmers. Domestic water user representatives' and small-scale farmers' participation in the organisation was noticeably different. They attended meetings irregularly and did not actively engage in discussions when present.

The participation of DWAF in WUA meetings was irregular. The local municipality is responsible for the delivery of water services in the area and should have been an active member of the WUA for this reason, however their participation was non-existent. The WUA showed that they could operate successfully without much involvement from DWAF and the local municipality. At best, during the period of this research, DWAF was consulted when

the need arose, mainly for information on certain issues or to approve an operation[19]. The assistance of Rhodes University researchers was crucial to the success of the WUA. Researchers acted as a 'surrogate DWAF', informing and directing the organisation towards achieving their goals.

6.3 Factors influencing participation

This thesis asserts that people, especially the poor, will not participate in an activity unless they feel they will gain something they deem worthwhile in return for their participation i.e. their involvement will lead to empowerment through the expansion of assets and capabilities and contribute to poverty alleviation and development (refer to Chapter 2 and Table 2.2). In most cases the poor look for benefits that will increase their living standards, in the form of basic services provision or employment opportunities. Various internal and external factors determine people's participation and non-participation in IWRM activities in the Kat valley. This research has yielded the following factors:

6.3.1 Awareness of water management organisations and water rights

Although the CF had been in existence since 2000, less than 50% of households interviewed knew about the organisation. Most of those who did know about its existence did not know anything about the organisation's objectives and mode of operation. These were the main reasons given by households for not participating in the organisation's activities. The same applied to the WUA with only 18 out of the 100 households interviewed knowing about the organisation. While more than 80% of households interviewed knew that they had an intrinsic right to water for drinking and domestic use, the same number of households did not know about the NWA and were not aware that they had a legal democratic right as marginalised communities to participate in local water management activities and engage with those in authority to improve their access to water for both domestic use and economic productivity.

[19] It should be noted that during 2007 DWAF started to play a more active role through regularly attending WUA meetings.

With regards to the awareness levels of WUA participants, researchers and large-scale commercial farmers had the same level of understanding in that both groups were well educated, well informed, experienced in local IWRM issues and, most importantly, had the same objectives. They had vested interests in the organisation and knew that their participation would reap benefits. In the case of the farmers, these benefits were in the form of maintaining their business interests through securing water rights and thereby securing their livelihoods. For the researchers, their benefits lay in achieving research deliverables determined by either the researchers themselves or the research sponsor, in most cases the WRC. Ultimately the development of a CMP that would enable the allocation of water to users in the Kat valley was the main objective for both groups. They therefore participated vigorously, were always present at meetings and had an urgent need to know what was happening within the organisation. They had a thorough knowledge of water policy and legislation and were up to date with local water management developments.

6.3.2 Employment opportunities

Results from household interviews showed that, for village communities, one of the most important reasons for participating in CF activities was the possibility of securing employment. Interviews with those involved with the Landcare project indicated that when the project was fully functioning and employing people from the local communities, community participation in the organisation was at its highest and people were enthusiastic about getting involved in CF activities. Once the project stopped numbers declined, however, people still participated in CF activities with the hope that their involvement would open up opportunities for employment. Even though this was not the case, some felt that one of the functions of the organisation was to provide employment, and expected projects similar to the Landcare project in the future.

6.3.3 Transport and communication problems

Transport and communication problems were a major factor affecting communities' participation in IWRM activities. Without funding from the WRC via Rhodes University to provide transport to and from meetings, community participation at CF meetings would have been minimal as residents could not afford to or were unwilling to pay for public

transportation and there was no reliable transportation system in the area. Household interview and workshop results indicated that communication between the CF and villages was poor. Small-scale farmer and domestic water user representatives on the WUA who lived in village communities attended meetings irregularly and in their questionnaires cited transport and communication problems as the main reasons why, stating that in many instances they either had to wait for transportation which did not arrive or were not informed of meetings taking place.

6.3.4 Activities not in line with people's needs

Kat valley village residents participated in CF activities for two main reasons: (1) to secure access to potable water from taps and (2) they believed that their involvement in CF activities would assist them in securing employment, as in the case of the Landcare project. These reasons for participating were not surprising as a reliable, easily accessible supply of potable water is difficult to secure in an area like the Kat valley where rural village communities live in poverty with high unemployment levels. Consequently one can expect people's most urgent needs to be related to improving their quality of life. Fifty five percent of households interviewed used the Kat River as their main source of water for household use, including drinking water, and 59 percent stated that they would be willing to pay for water services. Villagers cited a lack of infrastructure as a challenge and indicated a need for better access to the river for production purposes. Sewage in the river and problems with existing infrastructure were also mentioned. Residents complained of damaged taps, faulty engine pumps and brackish water from taps. In some cases people indicated that the water from the river tasted better than the groundwater from taps. Addressing the primary water related needs of villagers was not part of participatory processes and this affected people's involvement in planned activities.

It should be noted that while the CF had attempted during the establishment processes to make people aware that they were not involved in water services delivery, but rather the management of water resources, villagers still saw one of the functions of the organisation as assisting them to secure better access to water for domestic use, particularly potable water for consumption. As a result villagers showed little interest in activities that did not achieve this

and directly contribute to their well-being. The lack of common priority objectives between the local water management organisations and villagers did not stimulate community participation.

6.3.5 Relationship between the WUA and the CF

The main focus of the WUA was the determination of the ecological Reserve and the subsequent allocation of water licenses to registered water users. The priority needs of village residents mentioned above were not part of the WUA agenda. While DWAF states that a WUA has an important role to play in poverty alleviation and providing food security, related issues were not discussed at meetings. Another factor contributing to the divide between the two organisations was that the WUA did not address the issue of water services delivery. The municipality, in charge of this, did not participate in the WUA. Consequently one of the main objectives of the village communities could not be addressed by the WUA.

Participants at focus group workshops stated that the WUA should undertake to assist in improving their domestic water supply situation. This was confirmed by household interviews. The non participation of WUA members in CF activities created a feeling of distrust and disillusionment among community members who felt that their interests were viewed as unimportant. Commercial citrus farmers were seen as people who used all the water and made the most money. As a result there was no viable relationship between the CF and the WUA. The two organisations worked independently of each other and any contact between them was superficial, merely for the purpose of consultation, representation or facilitation, as in the case of the WUA voting process where the CF played an important role in informing and managing the voting process in the village communities. The CF was needed to help advertise the election and assist village communities in electing their representatives onto the WUA, namely domestic water user and small-scale/emerging farmer representatives. Once this role was completed their involvement slowly decreased to such an extent that two of the CF executive committee members interviewed were under the impression that the WUA was no longer in existence.

It is important to note that CF executive committee members did sit on the WUA executive committee but not necessarily as CF representatives. They were elected as either domestic user or small-scale farmer representatives. Structures were therefore in place to facilitate engagement between the two bodies. However, the absence of common interests and communication between the two organisations did not indicate any success towards achieving the changes desired by the Kat valley village communities and also affected their opinions of the CF. If the organisation was not successful in building ties with outside stakeholders it would not be effective in bringing about change and meeting the needs of the communities, causing apathy to spread among members and participation levels to fall. This was seen in the information gathered from interviews and workshops where villagers and CF representatives elected by village communities were accused of showing a lack of commitment towards the organisation by no longer attending community meetings and disseminating information to their villages.

6.3.6 Riverine awareness

Since the establishment of the CF extensive time and money was spent in promoting riverine awareness among the communities. To a certain degree, these CF related activities had been successful in increasing people's awareness of river ecology. Results from household interviews showed that respondents who attended CF workshops had a greater awareness of the river ecosystem and the domino effects that harmed the river, for example, the effect soil erosion had on water quality and species diversity of the river, as well as the effects of upstream water use and pollution on downstream users. They were also more aware of the need to always have a certain amount of water in the river to ensure its wellbeing i.e. the Ecological Reserve. The environmental workshops were hailed as a success by those who attended them and the information presented was well understood. Many respondents stated in both the CF questionnaires and household interviews that they participated in the CF primarily because of its role in protecting the catchment's natural environment, in particular the Kat River.

6.3.7 Land tenure

De Janvry *et al*. (2001), state that many poor rural households are not able to gain adequate access to land, even though securing this could be their best chance out of poverty. They assert that in developing countries land is typically misallocated among potential users and worked under incomplete property or user rights that discourage its efficient use. In total 24 out of 100 households interviewed had access to land for agricultural use and only 4 stated that they owned this land. Most land occupied by villages was owned by the government and both community and individual land claims were made from 1994 to 2004, none of which had yielded results by December 2006. Household interviews indicated that 49% of households did not know who the land they lived on legally belonged to and a lack of access to land was a reason for not growing crops for 26% of respondents. When speaking to CF leaders and researchers they stated that there was much uncertainty regarding land ownership in the area; as a result people were wary of starting any agricultural activity for fear that someone would later show up claiming that the land belonged to them. Households cited not having land to grow food and raise livestock as a sign of poverty.

6.3.8 Feelings of disinterest, dependency, entitlement and a lack of volunteer culture

Four broad factors identified by Clapper (1996), which determine why people participate and the degree of intensity of their participation, were identified in chapter two. Before any participative action can occur, the potential participant must receive relevant stimuli from his or her environment. Personal factors such as feelings of competence and the level of satisfaction with political systems influence people's participation. Intensity of participation is affected by social position variables such as socio-economic status, extent of group involvement and activity, race, ethnicity and integration into the community i.e. people's psychological perception of being close to the centre of things as opposed to being out on the periphery. While it is supposed that those with the greatest need for government services would participate the most, this is negated by the fact that those with the greatest need are part of lower social and economic groups and are therefore least likely to participate (Clapper, 1996). Environmental variables such as legal and constitutional elements, the political setting, socio-cultural character of the community and regional differences affect people's participation. From the research results it can be asserted that communities were not

receiving the appropriate stimuli required to encourage them to participate actively in water management structures.

Household interviews indicated that households had strong feelings of expectancy from government departments, ranging from the creation of jobs to the provision of seeds for crop production, as well as the hiring of people to clean up the Kat River. These findings were confirmed by CF questionnaire results. Respondents were either unwilling or unable to volunteer their time without remuneration. Laban (2005) states that ordinary development programmes often focus on technical training and the provision of short-term benefits such as food, work and medicine, and while this is necessary in many cases, it often contributes to a dole-out attitude were communities wait for everything to come from outside organisations.

Villagers wanted to be advised on how to participate and stated that people should come to them and explain how to participate. IWRM projects had not facilitated a 'justified feeling' among villagers that they could effectively participate in the management of local water resources, as residents felt that they needed to be told how to participate in order to do so effectively. There was an absence of proactive activity and a sense of powerlessness among households who were very dependent on outside organisations to bring about change in their communities.

6.3.9 Education and language barriers

Clapper (1996) asserts that the capacity to participate effectively depends on personal qualities and skills that are cultivated by higher education (refer to Box 6.2). The average level of education for the head of the household was grade 6. It was observed during WUA and CF meetings that the most educated and well-informed members dominated proceedings and discussions. At WUA meetings village community members representing domestic water users and emerging farmers were passive participants and did not engage in discussions. English was the language medium at these meetings and, at certain intervals, discussions would stop and an interpreter would go over the main issues in Xhosa. Consequently certain village representatives did not always understand what was being said at meetings and the information supplied to them was restricted.

Box 6.2 *Level of education is one of the most powerful factors in stimulating fuller participation. Higher levels of education, with a concomitant increase in skills, foster higher levels of participation. Persons who have attained higher levels of education are more likely to participate because they are more aware of the impact of government on the individual, have more political information, and consider themselves capable of influencing government activities – that is, they feel themselves more efficient. They have more opinions regarding political subjects, are liable to discuss politics more and with a wider range of people, and are more likely to be active members of community and other organisations* (Clapper, 1996: 65).

6.3.10 Rural-urban migration and decreasing populations

The issue of rural-urban migration was brought up on several of my visits to the study area. Gottret and White (2001) include migration as a livelihood strategy for rural communities (refer to Figure 6.2). When talking to people who worked in the area, I was told that many young people were moving to the cities or to other farming areas in search of employment and that in some villages only the elderly remained. Another reason that was mentioned for decreasing population numbers was the impact of HIV/AIDS on the communities. People stated that death rates, especially in the younger age categories, had increased. One community member stated that by looking at the increase in the number of graves in the last few years, people could tell that HIV/AIDS was a problem in the area. While this study did not focus on population changes, the effects of migration and HIV/AIDS were concerns expressed by some community members who stated that with time these factors would cause a substantial decrease in Kat valley community populations. These concerns were supported by certain researchers who pointed out a reduction in the number of people living in the area. Farolfi and Abrams (2005), state that the migration of people out the Kat valley and the effects of HIV/AIDS on the population are important factors that will affect the local labour force. Mujkanovic (2005) states that the Kat valley is heavily affected by HIV/AIDS and that even though unemployment rates were very high, there was concern that within a few years there may be a shortage of labour. Decreasing population numbers could have adverse effects

on community participation levels, where the young and educated are no longer present and the elderly (as indicated by the results in chapter 5) are not willing or unable to participate.

6.3.11 Research apathy

The Kat valley has been the focus of many research activities, involving various local, national and international researchers. There has been continuous dialogue between communities and these researchers, with CF and WUA activities having been the focus of many research deliverables since 1996. During household interviews research apathy was observed among residents who cited a lack of positive change, even though the CF and WUA had been working with researchers since their establishment. In an interview with one of the villagers who had worked closely with researchers, he stated that although research had been ongoing in the area for almost 10 years, there had been little change in people's living standards and no emphasis on helping them improve their economic situation. Community members felt that they did not have a say in project planning processes, rather they would show up at meetings or workshops facilitated by university researchers, listen to what was presented or take part in a planned activity and leave. This type of involvement corresponds with the definition of passive participation or participation by consultation (Pretty, 1995) and led to resident's increased dissatisfaction with the results of their participation. It should be noted however, that Motteux and other researchers did undertake to get communities to develop the research agenda. The Landcare project, in which communities identified soil erosion as a problem, helped to develop the proposal and run the project, was a result of this. Despite this effort, during the period of this research, there was still the feeling among communities that they were excluded from planning processes. The Landcare project facilitated the idea of participation for materials incentives and created a sense of expectancy among the communities. People expected to be paid for similar activities that would assist in improving their surrounding natural environment and it would be difficult to expect them to participate in similar projects without remuneration.

Kliksberg's (2000) assertion, that there is a lack of serious, systematic processes for the implementation of public participation, rings true in terms of the interactive participation and self mobilization of poor village communities. These two types of participation (refer to

Pretty, 1995) were not part of participatory initiatives during the course of this research project. The top down approach, dominated by professionals, governed participatory initiatives in the Kat valley village communities during this time. Villages conceded that control and optimal use of water resources remained in the hands of a few.

6.3.12 Involvement of DWAF and local municipality

The fact that during the course of this research project there was no communication channel available to respondents to discuss their water needs and problems directly with the local municipality and DWAF led to feelings of despondency and mistrust among residents towards government officials. DWAF officials saw village stakeholders as incompetent and wasting their time, while residents felt that officials were disinterested in the needs of the poor communities, favoured the commercial farmers, and only out to pursue their own goals. The absence of DWAF and the local municipality in CF activities decreased the organisation's credibility within the community, because the major role players who had the potential to influence changes in the area did not consider the CF a worthwhile investment of their time. Village residents therefore questioned why they should participate in CF activities if the two most powerful stakeholders in the local water sector, DWAF and the municipality, did not. Through talking with DWAF officials it was noted that they were not optimistic about working with the CF and did not foresee this happening in the future. Officials saw the CF and its members as ignorant and not knowing what they were doing. This thesis asserts that the attitudes of public officials did not facilitate effective participation of marginalised Kat valley communities in IWRM activities.

6.4 A new approach to water management

Motteux (2001) asserts that sustainable resource management will not be achieved if CFs are merely consultative bodies. Using Pretty's (1995) typology of participation as a reference, it can be concluded that the overall participation of rural community's in the Kat valley comprises of the first five types of participation: manipulative, passive, by consultation, for material incentives or functional participation. Interactive participation and self-mobilisation, types of participation that facilitate transformation through community control over decision making and the use of available resources, as well as the undertaking of initiatives

independently of external organisations, were not forthcoming at the catchment scale. Poor rural communities were seen as politically irrelevant and had little influence on the outcomes of initiatives. The absence of support from government departments, poverty, and the established domination of certain groups within existing water management structures have affected how marginalised Kat valley communities view participation in IWRM. The factors above, identified through the research process, have shaped the way people perceive and participate in water management structures in the Kat valley, and illustrate that a new approach is needed to move forward.

Over the past three decades billions of dollars have been invested in water and sanitation projects all over the world with very little effect due to the fact that "we are clearly dealing with a religion that is more honoured in the letter than in the spirit, and lip-service at national and international level disguises the fact that the new strategies are not yet gaining significant traction on the ground" (WSSCC, 2004). While South African water policy and legislation is regarded as one of the most progressive in the world, the implementation of the IWRM principles that drive the envisioned transformation within the water sector such as transparency, the inclusion of marginalised communities, gender equality, accountability, co-operative governance, etc. is still a long way from becoming a reality on the ground. Participation from poor communities in IWRM tends to be manipulative, passive or by consultation, and rarely achieves tangible results, causing feelings of apathy, mistrust and resentment among villagers. If this type of participation persists, a lack of sufficient progress will undermine chances of future success in water sector reformation.

6.4.1 Focus on integration and cooperation

The word 'integrated' and the term 'cooperative governance' have become part of the rhetoric encountered so often in water management readings and verbal communications. Integration is defined as the action or process of organising or structuring constituent units so that they function co-operatively. Cooperative governance is one of the underlying principles of NRM practices. Chapter 3 of the South African constitution states that all spheres of government and all organs of state within each sphere must cooperate with one another, assist and support one another, inform one another of and consult one another on matters of common interest, as

well as coordinate their actions and legislation with one another. The constitution defines cooperative governance as the collaboration among government, the private and public sectors and civil society in governing the country and addressing the needs of the nation. It is referred to as the "collaboration between all spheres of government and organs of state to provide effective, transparent, accountable and coherent government for the Republic as a whole" (RSA, 1996: 21).

With the vision for integration and cooperative governance clearly defined, the next step in the transformation process would be to incorporate these principles into the work ethic of those responsible for water reformation in the country. As the custodian of the country's water resources, this responsibility rests with DWAF and it is ultimately within the hands of its officials that possibilities for change exist. The findings of this research assert that the approaches DWAF have adopted up to date remain flawed, alienate them from other stakeholders and do not facilitate transparency, inclusiveness, accountability and cooperation. Consequently, public participation in IWRM cannot reach its full potential as those in charge of the transformation process are either unwilling or unable to embrace its principles.

Collaboration among government departments such as the Departments of Land Affairs, Environmental Affairs and Tourism, Agriculture, Social Development, etc. is needed to enable a workable framework for IWRM. Projects are undertaken by single departments and are one-dimensional in their objectives and in their processes to achieve them. Inter-department collaboration would rejuvenate the transformation process by bringing in more resources in terms of expertise, funding and manpower and could result in the resolution of several issues through the implementation of one project with reduced costs. IWRM problems are multidimensional and require multidimensional approaches for lasting, effective solutions.

6.4.2 Role of researchers, facilitators and NGOs

Participatory processes have inevitably reflected the ideological position of those initiating the process and determining its content (Olico-Okui, 2004). Intermediate level organisations and their staff are accountable to the programmes they organise and the people that participate in

them. Researching the outcomes of participation in the Kat valley has emphasised the role that researchers and other NGO staff can play in transforming water management processes and in how water management is perceived by local people. Throughout the research process, all IWRM activities were either initiated by Rhodes University researchers or facilitated by them. Both the Kat valley CF and WUA were very dependent on the researchers for their expertise and both owed their existence to the assistance of the researchers funded through the WRC. Project leaders are in a position to define the objectives of a project and determine to what extent the outcomes would benefit those involved. Organisations like the WRC rely on research institutions such as Rhodes University to identify critical IWRM issues and implement strategies to resolve them. It is difficult to imagine what the present water management situation in the Kat valley would be without the involvement of researchers. However, it is also important to note that while the involvement of researchers in water management processes can lead to quicker transformation, it can also lead to stagnation and a lack of enthusiasm in the process, depending on who benefits the most from the outcomes and what those benefits are.

During the research process, participation by rural village communities in water management had been based on villagers attending meetings and being presented with information or plans of what was to come. With the exception of the Landcare project, there had been little progress in communities taking control in decision making processes and sharing in the economic benefits of water use. Facilitators took a narrow view of capacity building which took place largely through awareness building workshops. Projects were limited to two to three years, depending on the amount of funding available, which usually coincided with the researcher's study period. The main beneficiaries of participatory processes that have taken place over the past years have been the WUA, who through communities' participation in the CF were able to meet the consultation requirements needed to develop a constitution and elect their management committee[20], and the researchers, who via the participatory processes were able to achieve their research deliverables. This may be seen to represent a manipulation of

[20] Chapter 8 of the NWA states that a proposal for the establishment of a WUA should be submitted to the Minister of DWAF. The proposal should indicate what consultation had taken place in the development of the proposal and the results of that consultation. The CF was used as a consultative vehicle during the WUA establishment process to (1) meet the consultation requirements and (2) assist in and validate the election of the WUA management committee.

the participation process, as described in Chapter 2. A big part of IWRM initiatives should be improving the living standards of the poor communities who are in many cases the main source of information for researchers and are often willing to give up their time to engage with them. There is a need for long term community development projects that empower residents and ultimately assist in them becoming self supporting. Until this is achieved benefits will continue to be one sided and the participation of poor communities minimal.

Through the analysis of documents on participation in the Kat valley and numerous visits to the area, it was concluded that the outcomes of participatory initiatives are sometimes made to appear more appealing than they are in reality. For example, in many cases the impression given is that participation from the communities is substantial, projects are ongoing and sustainable, or have had a significant positive effect on the lives of residents. In reality participation is marginal with no significant empowerment of communities and activities come to an end when research funds run out. This may be due to the pressure placed upon project managers to achieve results in a limited amount of time in order to appease sponsors. This sugar coating of results provides a false idea of positive, sustainable change in poor communities which leads to the establishment of similar projects that barely touch the surface of the problem and lead to participant apathy as those involved see no tangible benefits from their participation. Often participants are afraid to openly criticise the processes and outcomes of projects as they fear being reproached by those in their communities who support and benefit from the project, or they feel that the little benefits and interest they receive from the project sponsors and implementers would be withdrawn if they openly criticised the project, believing that half a loaf is better than none. If the outcomes and shortcomings of projects are critically and openly assessed and documented, lessons can be learnt to improve the success of future projects by avoiding the repetition of similar mistakes.

6.4.3 Roles and responsibilities of local residents

As stated by White (1996) in Chapter 2, while outsiders can help facilitate the empowerment of communities, they cannot bring it about. Facilitators cannot assist in bringing about change if local stakeholders will not get involved in the transformation process. Change cannot happen if residents do not acknowledge that they have a responsibility to themselves

and their communities to take action in changing their situations and assume pro-active roles in the transformation process, instead of waiting for change to come from outsiders. Local communities will have to contribute through their involvement in water management processes and institutions if they are to benefit from them. While underlying structures are needed to facilitate accountability and ownership among local people (refer to Box 6.3), community development will not be sustainable or effective if local residents do not take responsibility for their development, as development is a two way process..

According to McKnight and Kretzmann (1996) historical evidence indicates that significant community development will only take place when local people are committed to investing themselves and their resources in the effort, consequently development cannot be achieved from the top down, or from the outside in. From the research results, this kind of investment will be difficult to secure from the local Kat valley communities, as they are very reliant on outsiders to initiate and maintain projects. This mentality of dependency will have to be broken and emphasis placed on educating communities on their roles and responsibilities in water management.

6.5 Women and local water reformation

Women are the primary users and managers of water in rural households and their effective participation in water management organisations, both local and regional, is vital to improving existing water management practices. Particularly in poor communities, women's immediate needs for water and sanitation for their households and livelihoods put them at the head of the community of water users; therefore their obvious skills as managers of water resources and water systems should be harnessed more appropriately (Guerquin *et al*., 2003).

"*Water management is male dominant. The representation of women in water sector institutions is still very low. This is very important because water resource management affects men and women differently. Yet, decisions on water supply and sanitation technologies, locations of water points and operation and maintenance systems are mostly made by men. IWRM philosophy is that water users, rich and poor, male and female, are all able to influence decisions that affect their daily lives*." COSI (2007)

While the importance of women's participation in water management and the need to ensure that they share in the benefits of IWRM is widely acknowledged by governments and project managers, women remain underrepresented in water management structures and are excluded from planning and decision-making processes. Through observations at CF and WUA meetings it was noted that women perform conventional female roles such as the job of secretary taking down minutes and catering duties at meetings and workshops. Leadership positions belonged exclusively to men, even though some women in the community were better educated. The collection of water for household use remains the responsibility of women and children. Forty nine percent of head of households were women and in 41 % of households women were responsible for water collection. Plate 6.3 shows that although women are present at workshops and meetings, they do not actively participate in discussions.

Plate 6.3 Women listening to a focus group discussion dominated by men

Although achieving gender equality in NRM initiatives is stipulated in NRM policy, there is insufficient progress in institutionalising this objective. To date this goal remains one of the

most difficult to realise because unequal power relations have become entrenched within institutional structures and, in the rush to achieve project deliverables, securing women's equal participation is not a priority. A workable, long term solution to solving the problem of gender inequity in NRM and IWRM is difficult to achieve as empowering women is seen as a time-consuming and costly process.

The UNDP (2003) provides reasons for adopting a gender perspective in IWRM. These include:

1. Concern for project effectiveness and meeting project results
2. Concern for environmental sustainability
3. Need for accurate analysis of natural resource use
4. Concern for equality and the interconnectedness of gender equality within the UNDP's mandate to support sustainable human development
5. Participatory processes in IWRM initiatives do not automatically recognize inequalities and differences between women and men

Because people-centred approaches do not always ensure that gender perspectives are taken into account, applying a gender analysis to the allocation of resources would help water sector agencies better meet the needs of women (GWA, 2006). Parker (1993) defines gender analysis as a systematic way of looking at the different impacts of development on women and men, which requires separating data by sex and understanding how labour is divided and valued. She states that gender analysis must be done at all stages of the development process and that one must always ask how a particular activity, decision, or plan will affect women differently from men.

6.6 Ownership and accountability

In Chapter 2, Da Rocha Severo (2002) mentions accountability as one of the contributions of public participation to poverty alleviation. Accountability[21] is a popular word in institutional settings. It is a central theme in discussions about government, administration, and politics,

[21] Accountability in the public sector is defined as "the obligation of authorities to explain publicly, fully, and fairly, how they carry out, or fail to carry out, responsibilities that affect the public in important ways. It is an obligation to account for one's actions" (Callahan, 2006: 108).

associated with words like responsibility, fidelity, answerability, and ethics; and the lack of it is often described as one of government's main afflictions (Callahan, 2006).

DWAF's public participation guidelines stress that all role-players should be encouraged to take shared responsibility for the process of public participation in terms of commitments, burdens, benefits and shared accountability for the successes and failures of the process (DWAF, 2001). Kloezen in Zawe (2006) defines three separate forms of accountability: financial, operational and political, and states that operational and financial accountability are more difficult to put into practise than political accountability. In his thesis Zawe (2006) states that political accountability, represented by national government policies and their capacity to deliver on election promises, played an important role in deciding the destiny of irrigation management reform models in Zimbabwe. Lack of educated staff and means has caused weak upward accountability links between DWAF, water committees, and local and district municipalities (Uiteweer *et al*. 2006). Public accountability is both an instrument and a goal. What started out as an instrument to improve the effectiveness and efficiency of public governance, has gradually become a goal in itself (Bovens, 2006). Figure 6.1 shows a simple yet effective conceptual model depicting the key elements in a cyclical accountability relationship. Effective accountability relationships are dependent on roles, responsibilities and performance expectations being understood and explicit, the availability of resources, review and feedback being carried out, and follow up actions which include rewards and penalties based on performance. These relationships were not established with Kat valley village communities, who remained isolated from authority organisations. Residents did not engage with water authorities, and officials did not see themselves as being answerable to the communities. Officials lacked the ability or inclination to facilitate participatory processes and establish accountability relationships. Weak accountability links had a crucial role in contributing to villagers' apathy towards the CF and WUA. The CF, being a community-based organization, did not have the resources and expertise to fulfil the conditions for affective accountability. The WUA, while being a multi water user organization, catered mainly for irrigation needs of farmers, and was perceived as having distanced themselves from the village communities and their water needs.

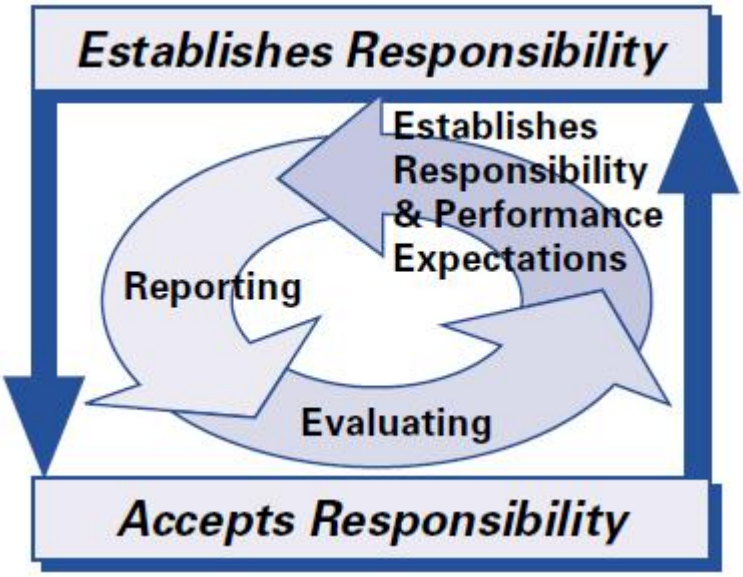

Figure 6.1 Steps in the accountability process (Source: Manitoba Health, 1999)

While the accountability of implementing institutions is always under the spotlight, not much attention is given to the issue of individual accountability with regards to local people's personal contribution to IWRM, and how they as water end-users can be accountable for IWRM processes. Laban (2005) discusses the link between the level of accountability and the degree of ownership that local people have in NRM and IWRM processes. The information that follows is drawn from his work. The sustainability of IWRM processes is dependent on the level of accountability and sense of ownership that local people have over the use and management of local water resources. However, in most cases underprivileged groups are unable to assume such accountability because the underlying structures needed to facilitate this are absent. Various socio-economic and institutional factors do not encourage local people taking responsibility for the use and management of water resources for drinking and agricultural purposes. Four preconditions for local level accountability in NRM are (1) existing economic and other (non-material) benefits, (2) appropriate awareness, knowledge, skills and capacities, (3) guaranteed property and usufruct rights and (4) claim making power and leadership (refer to Box 6.3). The severe disempowerment of the Kat valley village communities and absence of the above pre-conditions did not facilitate accountability for and ownership of the area's water resources among local people.

Effective water resource management requires accountability at all levels and these different levels should not operate in isolation from each other as they are all intrinsic parts of a vertical and horizontal information and decision-making system. Laban (2005) provides an in-depth review of the pre-conditions and parameters that determine the success or failure for accountability/ownership at the community and government agency/support organisation levels (refer to Appendix F).

Box 6.3 Pre-conditions for local level accountability in NRM (Source: Laban, 2005: 4)

Existing economic and other benefits Protection and management of natural resources have to take into account the multiple interests of local people. These can differ in nature, ranging from religious or social convictions to subsistence and economic benefits. If these benefits are not important, local people will refrain from investing time, effort and money in land use activities. They will make their own implicit cost-benefit estimations weighing short-term versus long-term interests in view of ecological, socio-economic objectives and cultural/spiritual concerns. Situations with common property resources as forest and water need specific attention to deal with the problem of 'free riders'. Well defined local control and access rights could increase user costs (Openshaw and Fernstein, 1989) of resource exploitation and thus the value (benefits) of the natural resource base and its products (Laban, 1993).	***Appropriate skills and capacities*** People need to have the inner conviction that they are competent and have the right skills (knowledge, technology) and means to carry out (old or new) activities leading to sustainable management of natural resources. Knowledge is linked to the analysis of their actual and potential future situation, technical options and their impact. It concerns also organization and management of activities and related cultural believe systems. There are often rich sources of local indigenous knowledge and skills as a basis for such management. This knowledge is often underestimated and should be given more attention. However, under changing socio-economic and environmental conditions indigenous knowledge might have become less appropriate and needs to be adapted through participatory research and appropriate training and extension in 'new' technology (ILEIA, 1989).
Guaranteed property and usufruct rights Customary law systems on the use of common resources are disintegrating in many cases. They are often only partly replaced by colonial and modern laws, which recognize only negligible responsibility and authority at local levels. Moreover, proper application of modern legislation has often appeared to be very difficult (Okoth-Ogendo, 1991). Differences in local interests, heterogeneity of communities and growing external claims on land increase the tensions around property and usufruct rights on water and other natural resources. As a result local populations are often in a state of uncertainty about their rights to land, water and trees. In these conditions, it is not surprising that villagers no longer feel accountable for the protection and management of these resources in their land. Without this accountability, any intervention will fail to succeed. Usufruct, access, control and ownership rights for individuals and community organizations need to be made more explicit in formal legislation and regulations (land reform, forest codes, water use rights, etc.). In many cases, such formal legislation could find its inspiration in local customary right systems. At the same time ways and means have to be found to adapt customary systems to the changed socio-economic and political conditions of today.	***Claim making power*** It is often extremely difficult for individuals to secure the necessary rights of land ownership, land tenure, usufruct, and access to water, credit schemes, information, and other basic conditions. Organizing community leadership and strong and functional village groups with similar interests becomes a necessity to increase their claim making power and to confer sufficient autonomy and independence. In practice this will not be easily achieved. Local communities are seldom homogeneous units; on the contrary there are often multiple conflicting interests between different groups composing a village community. Different interests may exist between men and women, large farmers and landless, small or marginal farmers, different castes, ethnic groups, political parties, or other interest groups. Such differences may lead to situations where natural resources management could essentially be considered as a problem of conflict management. A pro-poor, rights-based approach will especially focus on strengthen the claim-making power of under-privileged groups. In many cases but not always women, small farmers and landless families are among these latter groups.

6.7 Pro-poor water management

The devolution of power in the management of water resources to the local catchment level could, instead of empowering marginalised groups, put control back in the hands of those who benefited the most from the apartheid water resource management system. Presently industry and large-scale farmers remain in the best position to secure access to water for production as they are the best informed and most familiar with the new law and management processes. Consequently they are able to participate in IWRM activities the most effectively. Kliksberg (2000) states that achieving equity is not a straightforward process, especially if organizational models are designed in such a way that only sectors with certain levels of previous training or skills can access resources. Conflict over water resource issues in farming communities is inescapable because water is an integral factor in economic livelihoods (Motteux, 2001). However, in the case of the Kat valley, the absence of conflict and debate should cause concern, as the majority of people have historically been denied equal rights and access to water for production and domestic purposes, while minority groups have successfully engaged in commercial citrus farming for decades.

Poor families' water needs are often ignored because water management structures from the local community level to the catchment level are dominated by bulk water users and by administrative, political, and economic elites who undermine the welfare and livelihoods of the poor (Guerquin *et al*, 2003). White (1996) states that because people are not homogeneous, special steps are required to bring in disadvantaged groups. Local and regional DWAF institutions need to become 'agents of change' through prioritising pro-poor agendas. According to Shreiner & Van Koppen (2001), the decentralisation of water management opens up key opportunities for contributing to poverty eradication in South Africa, but steering by the government is crucial to establishing pro-poor developmental CMAs that stimulate poor people's water use for productive farming purposes. In the case of the Kat valley this would entail supporting communities via the development of agricultural projects that assist them in securing water allocation rights and increasing food security. Pro-poor developmental projects should be part of local and regional DWAF responsibilities.

Ashton & Seetal (2002) refer to social adaptive capacity as the availability of the necessary social, economic and technical resources needed to exploit the available water within a society. Countries that display a highly developed social adaptive capacity, such as Israel, are more likely to overcome changing levels of water availability. A society with low social adaptive capacity will be unable to effectively deal with water scarcity and enter a situation of water poverty. Presently Kat valley village communities lack this social adaptive capacity and are therefore the most vulnerable to changes in water quantity and quality and will suffer the worst of its effects. With predictions on the effects of climate change on water availability in Southern Africa bleak (refer to Appendix G), predictions of forthcoming 'water wars' and the increasing threat of the commodification of the world's water supplies giving rise to the term 'blue gold'[22], it is evident that investment in improving the social adaptive capacity of poor communities should be prioritised to avoid future water crises. Planning and identifying options for future water development to address water stress requires greater capacity for decision making and a greater demand for political commitment to change than in the past (Turton *et al*, 2003).

It should be noted that agricultural production provides less than 5% of poor rural people's income as the main income sources for poor people living in the former homelands are wages earned in urban areas (52%), 18 % from social transfers and 14% from remittances (Van der Berg & Burger, 2002). Approximately 11% of rural incomes are unaccounted for. Poor people are often denied the right to water to produce and develop sustainable livelihoods (Shreiner & Van Koppen, 2001), thus water deprivation is intrinsic to poverty. Scoones (1998: 5) states that the term sustainable livelihood[23] "relates to a wide set of issues which encompass much of the broader debate about the relationships between poverty and environment." Gottret and White (2001) describe a useful impact assessment analytical framework for sustainable rural livelihoods (refer to Figure 6.2) and assert that Scoones' definition of a sustainable livelihood can be divided into two subcomponents that reflect the

[22] Refer to Barlow & Myers (2002).

[23] A sustainable livelihood is defined as a livelihood that comprises of "the capabilities, assets (including both material and social resources), and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, and maintain or enhance its capabilities and assets, while not undermining the natural resource base" (Scoones, 1998:5).

themes of NRM: (1) people's well-being or livelihoods including aspects of employment, income, and poverty reduction and (2) the sustainability dimension including the resilience of livelihoods and the natural resource base on which people depend. The framework includes exogenous characteristics of a community such as history, climate and macroeconomic conditions. Institutions and organisations such as CFs and WUAs are at the centre of the framework, as they play a crucial role in binding the different elements of the framework and are the targets of research and development (R & D) interventions.

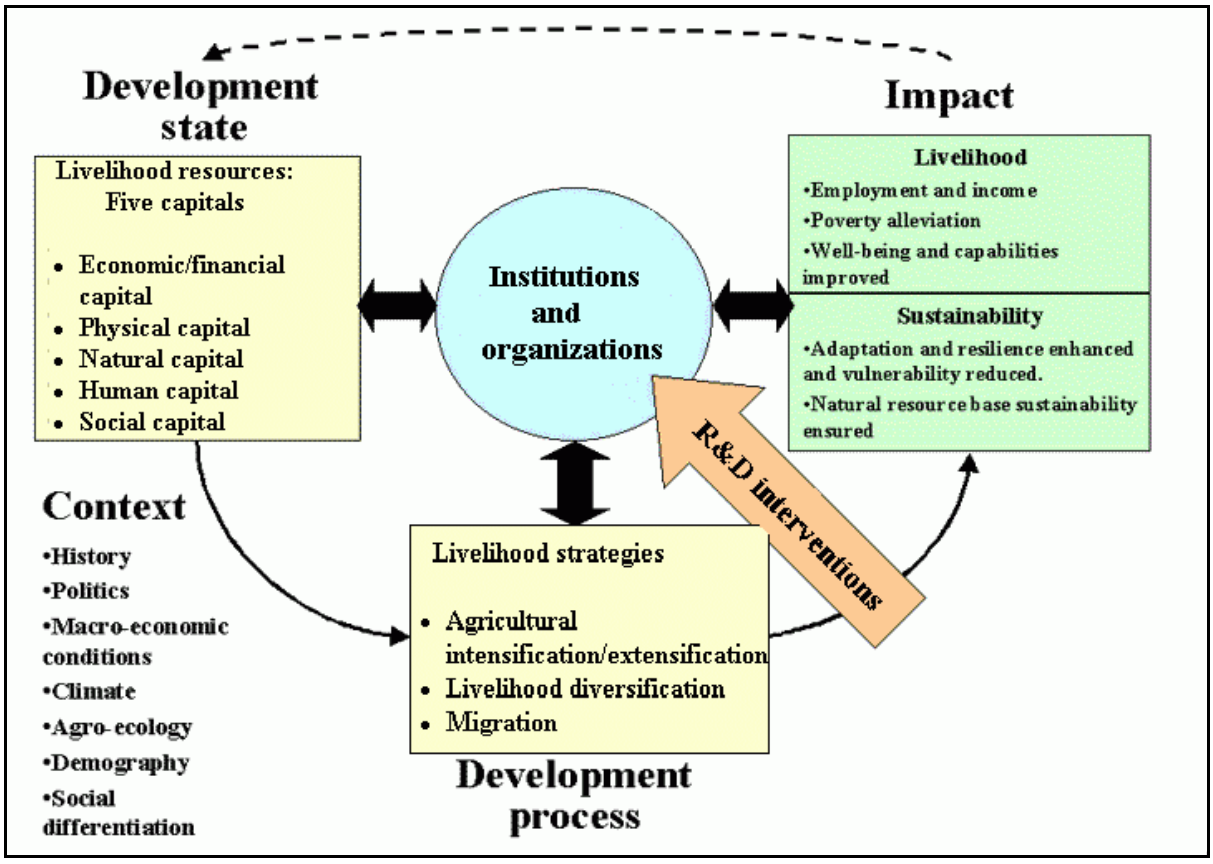

Figure 6.2 Analytical framework for integrated natural resource management impact assessment on sustainable rural livelihoods (Gottret and White, 2001).

The CSIR (2004) defines the borderline of poverty as a 'competent household'; a household that can access sufficient resources to meet its nutrition, shelter, health and education needs, while having enough of a surplus to contribute to the welfare of the community at large. Households that are unable to achieve this status are considered to be in a state of poverty. The Eastern Cape is statistically the poorest province in South Africa with more than two

thirds of households classified as living in poverty and one third of the population unemployed. More than half of those employed earn less than R500 a month. Consequently the province is plagued with widespread poverty and rural areas are the worst affected. Poverty is exacerbated by the increasing incidence of HIV/AIDS with the provincial HIV prevalence amongst antenatal clinic attendees in 2002 being more than 20% (CSIR, 2004). These conditions place households living in the province in a vulnerable position, particularly those living in rural areas where access to services such as health care, water and sanitation, transport, etc. are either not available or difficult to access.

Low income levels, high unemployment, high dependency on government grants and the lack of basic services place Kat valley communities in a state of poverty, living well below the government's definition of competent households. Eighty percent of households interviewed had an average of five members per household, living on less than R1700 per month, i.e. approximately R340 per person per month. The NWA stated redressing past inequities as one of its priorities; this, however, this has yet to be incorporated into the objectives of the country's regional and local water management organisations. The poor, as in the case of the Kat valley, remain either employed as the local agricultural labour force by wealthy commercial farmers or leave their homes in search of employment elsewhere. Households acknowledged during interviews that growing their own food would be a way out of poverty, but did not engage in this activity due to the lack of access to water, as cited by 21 households. These findings were confirmed by results obtained from focus group workshops.

6.8 Conclusion

The above information highlights the main events and determining factors that have shaped IWRM participation processes in the Kat valley. It attempts to point out the successes and failures of past participatory activities in order to improve the outcomes of poor people's participation, encourage dialogue between stakeholder groups and induce action towards the development of projects that prioritise the water-related needs of poor rural village residents. Emphasis is placed on integrated management, accountability and collaboration between government departments to bring about sustained transformation in NRM. Long-term support from government departments, academic institutions and NGOs is needed to ensure that

benefits from projects are enjoyed well into the long-term so that communities can obtain security and control over their lives. Securing the economic independence of poor rural communities should be a priority for local water management institutions realised through participatory activities that feed poor people, improve their access to water for both domestic and productive use, decrease their workloads, especially in the case of women and children, and create sustainable livelihoods. This research asserts that it is only by adopting a pro-poor attitude towards participation in IWRM that government departments can successfully address the inequalities of the past and achieve economic democracy, as the present IWRM situation in South Africa still favours the country's elite and widens economic disparities between wealthy commercial farmers and rural village farmers.

The potential to revolutionise present local IWRM situations, more especially in the case of rural communities, via community organisations such as CFs, is substantial. In areas similar to the Kat valley these organisations can represent the needs of poor grass roots communities and provide the perfect platform for transformation in various sectors such as land reformation, health care, education, etc. They should therefore be the focus of government authorities in developing poverty alleviation initiatives. If this potential is recognised and invested in, communities will acknowledge the importance of these organisations through the benefits they bring, stimulating increased participation. Sustained investment of human and financial resources is needed to develop marginalised communities' sense of awareness with regards to water policy and legislation, the roles of local water management institutions, and how their participation in IWRM can improve their lives. This should be done alongside economic development projects/programmes that address the priority needs of participants. DWAF, together with municipalities and WUAs, should, as government and government-supported organisations, participate in and support CF activities. The participation of the Department of Land Affairs in the WUA and CF would help address the issue of securing community and individual property rights. People from within village communities should be trained to work directly with DWAF in IWRM processes, as representatives of the rural poor. Ultimately village residents need to be empowered and become self supporting so that they can be accountable to themselves and their communities, while DWAF officials need to recognise and accept the role of facilitators of pro-poor agendas.

CHAPTER 7: CONCLUSION

> "Real participation and real development is essentially a political process. It is about the community organising itself to make decisions and take action. It is about the ending of dependence and supplicancy. It is about seeing improvements as being within the community's own reach and rights. It is about challenging relationships between the poor and their political representatives. It is about negotiating to remove political barriers. It is about building a community's confidence and self-esteem in order to release its energies and skills. It is about awakening the determination of communities to improve their own lives by their own efforts; and it is about organising to demand that those efforts be supported by local and national political leadership." WSSCC (2004: 6)

7.1 Introduction

DWAF has been assigned the task of transforming the present water management system from one that was exclusionary, dominated by commercial farming and industrial sectors, to one that is transparent, inclusive, embraces the principles of compromise and transformation, and prioritises the elevation of living standards amongst poor communities. Although the transformation process is supported by South Africa's new water policy and legislation, creating this reality requires further development, as well as an evolution within DWAF's human resources departments. This final chapter concludes the research by providing a summary of the main research findings and reflecting on the entire research process in order to extract the lessons learnt while undertaking research in the Kat valley. Finally, recommendations for the improved and effective participation of Kat valley village residents in local IWRM are provided.

7.2 Summary of research findings

This thesis set out to explore the obstacles to participatory processes in local IWRM in the Kat valley. Interviews and observations among the rural poor in the area revealed the following obstacles as being most significant: There was an established 'us and them' mentality in all participatory initiatives in the Kat valley. The main participants (villagers, commercial farmers, researchers and DWAF) were detached from each other. This was caused by several factors. The barrier in communication resulting from participants speaking different languages was a major factor affecting the establishment and development of close relationships and trust among stakeholders. The fact that practitioners who study participation, co-ordinate participatory activities and ultimately decide what participatory activities would occur, did not speak the local Xhosa language distanced them from the rural

communities. The use of interpreters did not facilitate relationship building between the two groups. Instead interpreters developed close relationships with the communities while researchers were seen as outsiders and engaged with cautiously. It was observed that in many instances the level of discussion at WUA meetings and workshops was inappropriate for rural community stakeholders, as the visual displays of data were too complicated and consequently not understood by village representatives.

The participation of DWAF, as a mediator between the Kat valley CF and WUA, as well as a stakeholder in the development of the village communities was blatantly lacking. The organisation provided no financial or technical support to the communities and was either unwilling or unable to form partnerships with them. DWAF's only involvement had been with the WUA, where officials had on occasion engaged with commercial farmers and researchers, who they were able to easily communicate with as they shared the same priorities and were well informed of the present water management setup.

The effectiveness of the CF in fulfilling the expectations of the communities they represented and assisting in transforming the way they accessed water was limited due to the organisation's dependency on outside institutions for financial, administrative and technical support. With the exclusion of their connection with Rhodes University, they had achieved little success in trying to establish fruitful, long-term links with stakeholders outside the Kat valley, namely NGOs, DWAF, the local municipality and other government departments. A similar household economic situation was indicated by the strong reliance of households on government pensions, resulting in disempowered and dependent communities.

7.3 Reflections on the research process

Given my past academic experience it has been a challenge to move away from the arguably simpler work of laboratory analysis into a social science dynamic, working with communities, documenting their opinions and attempting to gain as comprehensive an understanding of their situation as possible. This type of research has required constant adaptation to the process, compelling me to acknowledge my own personal biases and to continuously strive to maintain an impartial attitude. Other challenges were adapting to the gradual pace of

transformation in water management processes, both nationally and in the Kat valley, as well as having to separate the management of water resources for productive use (dealt with by CMAs and WUAs) from the delivery of water services handled by municipalities (the primary interest of rural village households).

Studying a discipline as convoluted as participation provided an immense amount of information and there were various aspects to investigate and focus on. It was therefore easy to be caught up in the many intricacies of participatory activities and a strong sense of discipline was needed to avoid straying from the designated research path. Although the research process had been challenging, I believe the methodology adopted for this study ensured that the process remained true to the research objectives and provided an unbiased, accurate analysis of the various factors that affected poor peoples' participation in IWRM in the Kat valley.

7.4 Recommendations

The final objective of the research study is to provide recommendations for improving the participation of poor marginalized communities, such as the Kat valley village communities, in local IWRM. The research process has yielded the following recommendations:

- The appointment of development workers and technical support staff from DWAF and the local municipality to assist local village communities in addressing their needs and concerns would help bring historically disadvantaged groups living in poverty into the IWRM arena. This would expel feelings of mistrust and apathy amongst the communities, created by a lack of engagement, towards these organisations; provided that workers are respectful and understanding of the communities and are genuinely interested in their development. These workers should be able to communicate in the local language of the people.

- In the case of rural areas similar to the Kat valley, where agriculture is the main economic activity and villages accommodate the country's poorest people, WUAs are often dominated by elites who benefit the most from the organisations activities. In these areas

the relationship between WUAs and CFs should be re-evaluated and strengthened, with DWAF taking on the role of a mediator. Poor communities should be the target of poverty alleviation initiatives, and the development of these part of the WUA constitution. These initiatives should be sustainable and not leave the intended beneficiaries poorer and more dependent than they were prior to its initiation.

- Possibilities for synergy in meeting both domestic and productive water needs need to be explored. For rural communities access to a secure, potable and easily accessible water source is their priority need. If the process towards obtaining this could be integrated with water needs for the cultivation of land, communities would have added reason to participate.

- Community development projects should from the time of their inception, involve communities in the determination of project goals and management processes to avoid the creation of unrealistic expectations and consequent participant dissatisfaction with results. Participants should be sure of what they can and cannot expect from the project, although there should always be negotiations on project outcomes so that all participants gain something they feel is worth their involvement. As projects develop, progress should be continually evaluated with communities, and dialogue maintained throughout the process.

- Cooperative governance must become a reality in IWRM processes as the involvement of multiple sectors in development initiatives is vital if they are to provide effective, sustainable results in poverty alleviation initiatives, poverty being a multi-dimensional reality. Structures needed to facilitate accountability should be developed among implementing organisations and their staff, as well as the beneficiaries of projects, to ensure that each participant is fully aware of his/her roles and responsibilities in the process, know who they are accountable to, as well as who is accountable to them.

People's participation in water management processes and institutions in the Kat valley is affected by various internal and external factors as described in this thesis. These factors are

interconnected and should not be viewed in isolation from each other. This research project has aimed to explore the obstacles to participatory processes in local IWRM in the Kat valley. It is by no means conclusive but serves to bring some of the main issues to the forefront of the participation debate, with the desire that the information generated through the research process would contribute to putting IWRM principles into practice.

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APPENDIX A

Schedule no.: ----------
Time started: ----------

Rhodes University
Department of Geography

Kat River Valley Interview Schedule 2004

The purpose of this interview schedule is to collect information for a Masters research project. Confidentiality is guaranteed as only the researcher will have access to these schedules.

The researcher intends to determine the level of demand for water and the quality of the resources and services presently available. This interview schedule is also aimed at looking at the level of involvement of residents in the **Kat River Valley Catchment Forum** (KRVCF) and **Water User Association** (WUA), their perceptions of these organizations and the **National Water Act**.

****

SECTION 1
Household socio-economic characteristics

1.1 Name of village. ----------

1.2 Name of respondent (if willing to provide). ----------

1.3 Contact details (if willing to provide). ----------

1.4 Please specify type of dwelling you live in e.g. brick structure with electricity, mud and tin structure with no electricity, etc. ----------

1.5 How close is your household to the Kat River (metres/kms)? ----------

1.6 Age of the head of the household. ----------

1.7 Gender of the head of the household. ----------

1.8 Age of the respondent. ----------

1.9 Gender of the respondent. ----------

1.10 Highest level of education of the head of the household. ----------

1.11 Number of household members. ----------

1.12 Number of household members earning an income (over the last 12 months). ----------

1.13 Occupation of the head of the household. ----------

1.14 Occupation of the other members of the household earning an income over the last 12 months. **Please indicate whether full-time or seasonal**. ----------
---

1.15 Do you mind providing information about your household income?

YES	
NO	

1.15.1 If **no**, please select monthly income bracket of head of household.

< R 200 ----- R 200-R 500 ----- R 500-R 800 ----- R 800-R1200 ----
R1200-R1500 ----- R1500-R2000 ----- R2000-R2500 ----- R2500-R3000 ----
>R3000 -----

1.15.2 Does any member of the household receive a government grant?

YES	
NO	

1.15.2.1 If **yes**, please specify what kind of grant/s (e.g. pension, disability, child, or other) and how many are received. ----------

1.15.3 Please select **total household monthly income** bracket (average over the last 12 months).

< R 500 ----- R 500-R 700 ----- R 700-R1000 ----- R1000-R1300 -----
R1300-R1700 ----- R1700-R2000 ----- R2000-R2500 ----- R2500-R3000 -----
R3000-R3500 ----- R3500-R4000 ----- >R4000 -----

1.16 Do you own the land you are now occupying?

YES	
NO	

1.16.1 If **no**, who owns the land? ----------

1.16.2 What is your **security of tenure** i.e. legally, do you have a right to be here e.g. title deed? ----------
---

1.16.3 Have any land claims been made on the land you live on?

YES	
NO	

1.16.3.1 If **yes**, by whom (you or an outside party)? ----------

1.16.3.2 When was the claim made? ----------

1.16.3.3 What have been the results so far? ----------

1.16.4 Who controls what you can do on the land? ----------

1.16.5 What restrictions regarding the use of **land** and **water** are there?

1.16.6 Are decisions regarding the use of land and other natural resources made by individuals or the community? Please explain. ----------
---

1.17 Does the household have any property rights/access to land **for agricultural use**?

YES	
NO	

1.17.1 If yes, please indicate whether private or communal property rights. ----------

****

SECTION 2
Water sources and water uses

2.1 From what source/s do you get your water supply for household use (**not irrigation/business**) e.g. drinking, cooking, washing, etc? Please list the different sources and next to them the different uses for each source. **(* very important: drinking water source)**.

Source	**Use/s**
----------	----------
----------	----------
----------	----------
----------	----------

2.2 Do you pay for any of the above water sources?

YES	
NO	

2.2.1 If **yes**, please list source/s and approximate amount paid per month.

Source ---------- R ----------

---------- ----------

2.3 Is water always available from all your sources?

YES	
NO	

2.3.1 If **no**, please indicate source(s) and provide reasons why.

2.4 How would you rate the **quality of water** from each of the sources you utilize (**good, very good, satisfactory, bad or very bad**)? Please provide a reason for your answer?

Source	**Rating**	**Reason/s**
---	---	---
---	---	---
---	---	---

2.5 What is your main source of water for household use (select one from answer to 1.1)?

2.6 How far is this main water supply from your home **(round trip)**? Km ---- m ----

2.7 What means of transport do you use to collect water? ----------

2.8 How often do you collect water from this supply (if daily, please specify no. of trips per day)? ----------

2.9 Who usually collects the water in your household? ----------

2.10 Who decides how this water is used? ----------

2.11 How much water do you collect per day/week (container/s size in litres x no. of trips)?

2.12 Do you use/collect water for **food production** or any **business/small-scale economic use**?

YES	
NO	

If no for 2.12 please proceed to question 2.14.

2.12.1 If **yes**, please specify for what purpose e.g. subsistence or small-scale agriculture, small-scale economic use e.g. spaza shop, hairdressing business, etc. Please specify if other (e.g. citrus farming). ----------

2.12.2 What is your source of water for this use? ----------

2.12.3 Do you pay for this water?

YES	
NO	

2.12.3.1 If **yes**, please provide approximate amount paid per month. R ----------

2.12.4 Is the water supply always available from this source?

YES	
NO	

2.12.4.1 If **no**, please provide reason/s why. ----------

2.12.5 How far is this water source from your irrigation plot/business **(round trip)**?
Km ---- m ----

2.12.6 How do you transport water to your plot/business location? ----------

2.12.7 How often is this done? ----------

2.12.8 Who in your household undertakes this task? ----------

2.12.9 Approximately how much water do you use for irrigating/your business each **day/week** (in litres)? ----------

2.13 Do you sell any of the crops you grow?

YES	
NO	
N/A	

2.13.1 If **yes**, how important is this income source to you i.e. is it the **only source of income**, the **most important source** or is it a **supplement**? ----------
---

2.13.2 Do you eat any of the crops grown?

YES	
NO	

2.13.2.1 If **yes**, how does this contribute to your overall food consumption? ----------
---

2.13.3 Do you belong to an irrigation group e.g. **HACOP**? If **yes**, please provide details. -----
---

****

Answer only if answer to 2.12 is no. If answer to 2.12 is yes, please proceed to 2.15.

2.14 If **no**, please state reasons why. ----------

2.14.1 Would you like to do so in the future?

YES	
NO	

2.14.1.1 Please provide a reason/s for the above answer? ----------
---

****

2.15 What are the main challenges you face with respect to water supply? ----------
---

2.16 How can these challenges be addressed? ----------

2.17 What does "**better access**" to water mean to you? ----------
---

2.18 If you and your household were given "better access" to **water resources** how would this benefit you? ----------
---

2.19 If you and your household were given "better access" to **water services** (i.e. household taps & flush toilets) how would this benefit you? ----------
---

2.20 Can you think of any way your household monthly income or quality of life could be increased/improved if the above were to happen (2.18 and 2.19)? ----------
---

2.21 Who in your household would benefit the most from this (women, children or men)? Please provide reasons for your answer. ----------
---

2.22 What benefits to the **water resources** in your area **(e.g. Kat River, nearby streams)** would there be if you were given "better access" to **water services**? ----------
---

2.23 How would you rate the quality of water from the nearby streams and river in your area (**good, very good, satisfactory, bad or very bad**)? Please provide a reason for your answer. ----------
---

2.24 Does your household boil the water used for drinking?

YES	
NO	

2.24.1 Please provide a reason for your answer. ----------

2.25 Are **water-borne diseases** prevalent in your area? (E.g. cholera)

YES	
NO	

2.26 Is **diarrhoea** a problem in your area?

YES	
NO	

2.26.1 If **yes**, please state known or assumed causes. ----------
2.27 Does your household have a **water storage system/facility** (e.g. rainwater storage tank)?

YES	
NO	

If no, please proceed to question 2.28.

2.27.1 If **yes**, please specify type of storage system/facility. ----------

2.27.2 Period of use of system. ----------

2.27.3 Cost of system. ----------

2.27.4 What is this water used for? ----------

2.27.5 Is water always available from this source?

YES	
NO	

2.27.5.1 If **no**, please state maximum duration of water availability from this source. ----------

****

2.28 Are there any other sources of water you utilize that we have not talked about? If **yes**, please list them. ----------
---

2.29 Please list all **water uses** of your household that are not mentioned above, together with their sources (e.g. water for livestock from river).

2.30 Are you willing to pay to have a tap and flush toilet system installed in your house?

YES	
NO	
Tap only	
Flush toilet only	

2.30.1 Please provide reasons for your answer. ----------

2.30.2 If yes, please state how much you would be willing to pay per month for **each** service.

2.30.2.1 Flush toilet system R ---------- per month
2.30.2.2 Household tap R ---------- per month

2.31Would you be willing to pay for better **water quality** from your **present water source/s**?

YES	
NO	

2.31.1 Please provide reasons for the above answer. ----------
---

2.32 Would you consider leaving the KRV for good if you were offered accommodation with formal water services elsewhere (i.e. household tap and flush toilet system)? Please provide reasons for your answer. ----------
---

****

SECTION 3
Level of Awareness of Water Management Organizations

3.1 What rights to water do you have? ----------

3.2 Why do you have these rights? ----------

3.3 Are you aware of the new Water Law?

YES	
NO	

3.3.1 If **yes**, how did you hear about the law? ----------

3.3.2 How do you think the law will affect you? i.e. What aspects will help you? ----------

3.3.3 What aspects are you concerned about that may stop you using water the way you want to? ----------

3.4 Two of the main aims of the new law are:

(1) To enable previously disadvantaged communities to participate in the management of local water resources and …

(2) To ensure that everyone has access to water and to the benefits of using water.

What does **each aim** mean to you?

(1)----------

(2)----------

3.4.1 Please comment on how effective you feel the new Water Law has been in achieving the above 2 aims **in your village/community** so far.

3.5 Have you heard about the **Ecological Reserve**?

YES	
NO	

3.5.1 If **yes**, how did you hear about it? ----------

3.5.2 Can you explain what the ecological reserve is? ----------
---

3.5.3 Is the health of the river threatened?

YES	
NO	

3.5.4 Please provide a reason/s for your answer. ----------

3.5.5 Is overuse & pollution a threat to the river? Please provide reasons. ----------
---

3.5.6 Should the river be protected? Please provide reasons. ----------
---

3.6 How can the quality of **water resources** in your area be improved or protected for the use of future generations? ----------
---

3.8 People who use water not for **Schedule 1** purposes will have to **register** as water users and **apply for a license** so that the amount of water they use can be controlled. What is your opinion on this? ----------
---

3.9 Have you heard of the **Kat River Valley Catchment Forum**?

YES	
NO	

If no, please proceed to question 3.10

3.9.1 If **yes**, how did you hear about it? ----------

3.9.2 What is the purpose of the Catchment Forum? ----------

3.9.3 What CF activities do you know about? ----------

3.9.4 What activities have you been involved in (e.g. workshops, landcare project)? ---------
---

3.9.5 Are you a CF representative?

YES	
NO	

3.9.5.1 If **yes**, what is your role/function? ----------

3.9.6 Who is/are your **village representative(s)**? Please provide their name/s. ----------
---

3.9.7 If you know who are the **CF committee members** please provide their names? Which villages do they come from? ----------
---

3.9.8 Does your representative inform you about forum activities?

YES	
NO	

3.9.9 In your opinion, is the CF really needed in the Kat River Valley?

YES	
NO	
Don't know	

3.9.9.1 Please provide reasons for your answer. ----------

3.9.10 Do you feel that the CF adequately represents the water needs of your village/community?

YES	
NO	
Don't know	

3.9.10.1 Please provide reasons for your answer. ----------

3.10 Have you ever heard of the **Kat River Valley Water User Association**?

YES	
NO	

If no, please proceed to question 3.11

3.10.1 If **yes**, how well do you know the activities or purpose of the **WUA**? ----------
---

3.10.2 How did you come to know about this association? ----------
---

3.10.3 WUAs have an important role to play in poverty eradication and providing food security. What is your opinion on this? ----------
---

3.10.4 Do you think the **Kat River WUA** is fulfilling the above? Please provide reasons. -----
---

If any member of your household has attended a CF or WUA meeting please provide the following information. **If this does not apply to your household, please proceed to question 3.18.**

3.11 Please specify which organization and the exact nature/level of involvement. ----------
---

3.12 How did you become aware of the meeting(s)? ----------

3.13 How many have you attended so far? ----------

3.14 How were you transported to and from the meeting/s? ----------

3.15 How easily did you follow the proceedings at the meeting(s)? Were you satisfied with the way in which they took place? Please provide reasons. ----------
---

3.15.1 Please provide the opinion of the household member with regards to the main issues addressed by this organization (discussions and results of meetings). ----------
---

3.15.2 Did the household member experience any problems/difficulties with being involved with this organization? Please specify. ----------
---

3.15.3 In your opinion, what does the household member gain from being involved? ----------
---

****

3.18 If you and your household have no involvement with both the CF and WUA, please provide reasons for not being involved. ----------
---

3.19 Would you consider participating in the activities of these organizations in the future?

YES	
NO	
Don't know	

3.19.1 Please provide reasons for your answer. ----------

3.20 Do you feel that your village/community is given adequate opportunities to participate in the management of **water resources** in the KRV?

YES	
NO	
Don't know	

3.20.1 Please provide reasons for your answer.

3.21 What would have to be done or changed to enable you and other members of your community to effectively participate in the **management** and **conservation** of **water resources** in your area. ----------
---

3.22 Are you aware of the proposed establishment of **CMAs** to manage water resources within Water Management Areas?

YES	
NO	

3.22.1 If **yes**, how did you come to know about this? ----------
---

3.23 A CMA must contribute towards **social and economic development**. What would you like the CMA to do for your community/village? ----------
---

3.24 What do you understand by the meaning of the word "**poverty**"? ----------
---

3.25 Do you consider yourself and your household as being poverty-stricken?

YES	
NO	

3.25.1 Please provide reasons for your answer. ----------

3.26 In your opinion, what should be done to improve the standard of living of your household and other households in your village, in terms of…

3.26.1 (a) access to **water resources**. ----------

3.26.2 (b) access to **water services**. ----------

Time of completion of questionnaire: _____
Date of completion: _____
Does the respondent mind being quoted in the researcher's master thesis?

YES	
NO	

APPENDIX B

Rhodes University
Geography Department
CF Interview Schedule – Kat River Valley 2005

The purpose of this interview schedule is to collect information for a Masters research project. Confidentiality is guaranteed as only the researcher will have access to these schedules.

Time started: _____

1. Name of respondent. ----------
2. Residential address of respondent. ----------
   ----
3. Contact nos. Home: ----------
   Cell: ----------
4. When did you become involved in the Catchment Forum (month & year)? ----------
5. How was the CF established? ----------

   ----
6. How did you become involved in the CF? ----------

   ----
7. Why did you become involved in the CF? ----------

   ----
8. How often does the CF hold meetings? ----------
9. How many have you attended this year? ----------
10. How are you informed of these meetings? ----------
    ----
11. Approximately how many people attend CF meetings? ----------

12. What are the main issues discussed at these meetings? ----------
---

---

13. Do you have a designated position on the CF executive committee e.g. chairperson, treasurer, secretary, etc?

Yes	
No	

If yes, please specify what your position is. ----------

14. What, to you, are the main functions/purposes of the CF? ----------
---

---

15. What progress has been made by the CF since its establishment, in terms of fulfilling these purposes? Please tick the appropriate box.

None	
Slight	
Satisfactory	
Good	

15.1 Please provide reasons for your answer. ----------

---

16. What, for you, have been its major achievements thus far? ----------
---

---

17. What problems/difficulties has the CF experienced since its formation? ----------
---

---

18. In your opinion, what can be done to overcome these problems? ----------
---

---

19. What response have you received from local residents in the area (in terms of getting them to participate in the activities of the CF)?

Very bad	
Bad	
Satisfactory	
Good	
Very good	

19.1 Please provide reasons for your answer. ----------

---

20. In your opinion, what are the reasons for some residents not being involved in the CF?

---

21. Do you think they should be involved in the CF?

Yes	
No	

21.1 Please provide a reason for your answer. ----------

---

22. What is the state/condition of the Kat River in terms of water quality?

Very bad	
Bad	
Satisfactory	
Good	
Very good	

22.1 Please provide reasons for your answer? ----------

---

23. How can the condition of the Kat River be improved? ----------
---

---

24. In your opinion, what should be done to make the functioning of the CF more effective? ----------
---

---

25. What is your main interest in the CF as a water user? ----------
---

---

26. In your opinion, is there potential for business opportunities in your community if residents are given "better" access to water resources and services? Please provide reasons for your answer. ----------
---

---

27. What was done to try and make the CF as representative of all residents of the local communities as possible? ----------
---

---

28. What is the relationship between the CF and the Kat River Valley Water User Association? ----------
---

---

29. What, to you, is the purpose of the WUA? ----------

---

30. In your opinion, is the WUA fulfilling this purpose? Please provide a reason for your answer. ----------
---

---

31. Has the CF experienced any problems/difficulties with being part of the WUA? If yes, please elaborate. ----------
---

Time of completion: _____
Date of completion: _____
Does the respondent mind being quoted in the researcher's Masters thesis?

Yes	
No	

APPENDIX C

Rhodes University
Geography Department
WUA Interview Schedule – Kat River Valley 2005

The purpose of this interview schedule is to collect information for a Masters research study. All information obtained from this interview schedule is confidential.

Time started: _____

32. Name of respondent. ----------

33. Residential address of respondent. ----------
---

34. Email address. ----------

35. Contact nos. Home: ----------
Cell: ----------

36. Which group do you represent on the Water User Association? Please tick appropriate box.

Commercial farmers	
Small holder farmers	
Emerging farmers	
Domestic/Schedule 1 water users	
Municipality	
Other	

If Other, please specify. ----------

37. When did you become involved in the WUA (month & year)? ----------

38. How was the WUA established? ----------

---

39. How did you become involved in the WUA? ----------

---

40. How often does the WUA hold meetings? ----------

41. How many have you attended this year? ----------

42. How are you informed of these meetings? ----------

---

43. Approximately how many people attend WUA meetings? ----------

44. What are the main issues discussed at these meetings? ----------
---

---

45. Do you have an executive position on the WUA steering committee e.g. treasurer, secretary, chairperson?

Yes	
No	

If yes, please specify. ----------

46. What, to you, are the main functions/purposes of the WUA? ----------
---

---

47. What progress has been made by the WUA since its establishment, in terms of fulfilling its purpose/s? Please tick the appropriate box.

None	
Slight	
Satisfactory	
Good	

47.1 Please provide reasons for your answer. ----------

---

48. What, for you, has been its major achievement(s) thus far? ----------
---

---

49. What problems/difficulties has the WUA experienced since its establishment? ----------
---

---

50. In your opinion, what can be done to overcome these problems? ----------
---

---

51. What response have you received from water users in the area (in terms of getting them to participate in the activities of the WUA)?

Very bad	
Bad	
Satisfactory	
Good	
Very good	

51.1 Please provide reasons for your answer. ----------

---

52. What do you feel are the reasons for some water users not being involved in the WUA?

---

53. Do you think they should be involved in the WUA?

Yes	
No	

53.1 Please provide reasons for your answer. ----------

---

54. What is the state/condition of the Kat River in terms of water quality?

Very bad	
Bad	
Satisfactory	
Good	
Very good	

54.1 Please provide reasons for your answer. ----------

---

55. How can the condition of the Kat River be improved? ----------
---

---

56. What is your main interest in the WUA as a water user? ----------
---

---

57. What was done to try and make the WUA as representative of all water users as possible?

---

58. What is the relationship between the WUA and the Kat River Valley Catchment Forum?

---

59. What, to you, is the purpose of the CF? ----------

---

60. Is the CF fulfilling this purpose? Please provide a reason for your answer. ----------
---

---

61. Has the WUA experienced any problems with the CF? If yes, please elaborate. ----------
---

---

62. In your opinion, what needs to be done or changed in order for the WUA to become more effective/efficient in achieving its aims? ----------
---

Time of completion: _____
Date of completion: _____
Does the respondent mind being quoted in the researcher's Masters thesis?

Yes	
No	

APPENDIX D

UKWAKHA IKAMVA LEKAT RIVER SIKUNYE
Uyamenywa kwintlanganiso eyakube ngezintsuku zilandelayo:

UMHLA WOKUQALA kuJune 2005 (1 June 2005)

UMHLAWESIBINI kuJune 2005 (2 June 2005)

IXESHA: **9 am**

INDAWO: ---------- **ngomhla woku 1 June**
---------- **ngomhla wesi 2 June**

- Le workshop iyakube imalunga nokunika ingxelo ngophando obelusenziwa nguMerle.

Izithuthi zokuya kwi-workshop ziyakube zikhona Sovuyiswa bubukho bakho

APPENDIX E

MINUTES

Minutes of the meeting of the Kat River Water User's Association held on the 4th February 2004 at 10h00 at the Fort Beaufort Country Club.

PRESENT: Brian & Lee-Ann Mildenhall, Eric Nohamba, Llewellyn Roberts, Jannie de Villiers, Barry Mildenhall, Glenam Knott, Wes Halverson, Bryant Browne, Jay O'Keeffe , Monde Ntshudu, Maryolein de Jong, Nhlanhla Mbatha, Sharon Birkholz, Ester Ebi, Jerry Mtsebeza, Arrie van Tonder

APOLOGIES: none

WELCOMING: The Meeting was opened by Llew at 10h15.

MINUTES OF THE PREVIOUS MEETING: Llewellyn Roberts asked the Secretary to read through the minutes and all who were present had no objections or changes to them.

MATTER ARISING:

1. **APPROVAL OF LOWER KAT TEMPORARY RESCHEDULING OF UNUSED UPPERKAT ALLOCATION**: It was put to the members that the D.W.A.F had met with the Executive of the W.U.A. and suggested that the Government Scheme Upper Kat allocation, which was not being used or paid for by those no longer farming or deceased, should temporarily be allocated to the Unscheduled Users. The reason for this was that in the past the Unscheduled Users were allowed to purchase water releases providing the dam was not lower than 60% and the proceeds of the release did not go towards reducing the rates but rather was absorbed into the D.W.A.F. As a temporary measure until such time as the Management Plan is in place this would assist in reducing the rates and benefit W.U.A as the proceeds of the unscheduled users release would aid in reducing the scheduled users rates. Furthermore the D.W.A.F. reminded us the W.U.A. was held liable for users who did not pay. The total amount of hectares of SIKO (18ht), METULA (23ht), SKOTILE (32ht), DYONASE (17.5ht) and NOZOYI (18ht) totalled 108.5 ht and the Unscheduled Users requested the approval of the members. It was passed around the table and agreed that on a temporary basis the unscheduled users may acquire the 108.5ht and commence payment immediately subject to this being reviewed on an annual basis. Furthermore should any of these hectares be developed the decision would be reversed as and when the hectare would be redeveloped. Eric mentioned that there is something in the pipeline for future development but that it was the indefinite future. There were no objections and the decision was adopted.
2. **INTRODUCTION OF JAY O'KEEFFE'S TEAM**: Llew welcomed Jay and his team and went around the table doing introductions.
3. **WATER RESEARCH COMMISSION BUDGET**: A decision was made for Rhodes to handle the R2.100 000.00 budget. Jay to let us have an Inception Report. Rhodes to give us a monthly printout of costs and payments made.
4. **E.O.B.:** None

The meeting closed at 11h45

APPENDIX F

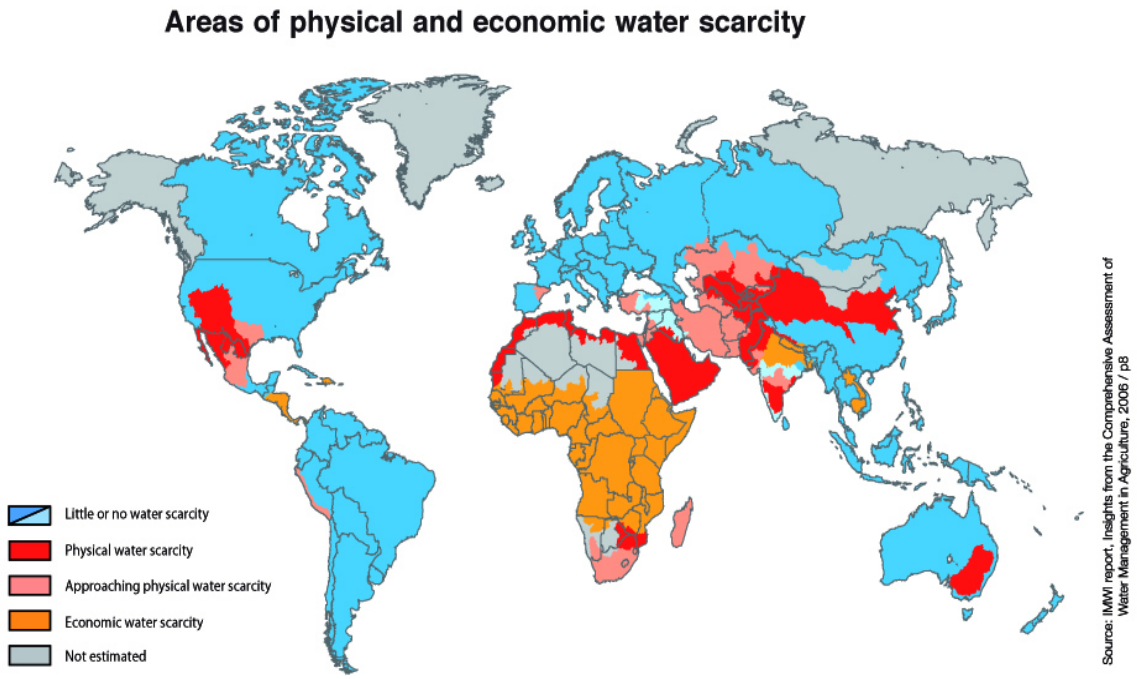
Factors/Pre-conditions and parameters for Success /Failure for ownership/ accountability at the Community level (Source: Laban, 2005: 13)

FACTORS/ Pre-conditions	Parameters			
Awareness/Capacities and Knowledge	Increased awareness among disadvantaged population groups – regarding rights and participation.	Position, status, rights, self-esteem of women recognized by men in the target community.	Agro-ecosystem – understanding of the target groups	User groups, farm house hold and women have increased their capacities to enlarge their knowledge.
Facilitation and Leadership	Conflict resolution ability of groups	External facilitation capacities for solving differences and conflicts among stakeholders	Responsible leadership functional and accepted within target community at ward level.	Local political leadership is sufficiently taken into confidence by user groups at VDC level
Group processes	Initial degree of (influence or formal) organisation of target groups	Inherent entrepreneurial capacities.	Group systems and procedures in place at the user group level	Level of organization and initiative of User Groups to continue activities and start new initiatives on their own
Claim-making power	Ability of target groups to arrange for post-project external back stopping for complex activities	Ability of user groups to Link-up with input supply and markets	Abilities in place to link up and "get" things from government and other support institutions.	Capacity for target group to engage with social, political and economically dominant group
Benefits	Tangible here and now benefits from the enhanced NRM activities for primary stake holders (especially Dalit FHHs and women	Tangible benefits from NRM activities for User Groups	Recognition of CBO's contribution to NRM in terms of ecological / economical added value.	User Group's ability to increase benefits from their NRM activities on their own
Access rights and control	Rights (titles / long term agreements) on NRM (land, trees, forests) secured for farm house hold and women	Group accountability to Govt. Authorities for sustaining natural resources	Group accountability to Govt. Authorities for respecting the rights of poor and women	Control over benefits by individuals, family and interest groups – transparent and equitable

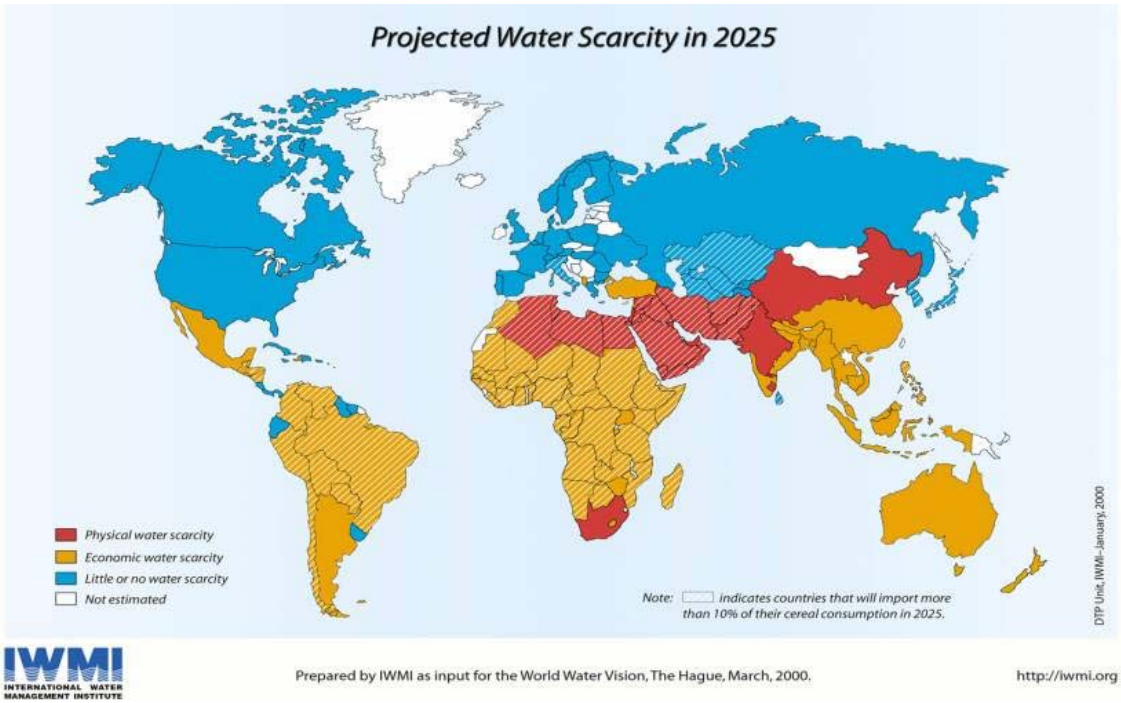
Factors/Pre-conditions and Parameters for Success /Failure for ownership / accountability at the government agency – support organization level (Source: Laban, 2005: 14)

FACTORS/ Pre-conditions	Parameters			
Awareness/Capacities and Knowledge	Capacity of technical staff to develop activities and processes related to IWRM.	Understanding of staff to work with groups of poor and women	Capacity to learn and innovate	
Facilitation and Leadership	Capacities to facilitate developmental processes in user groups	Capacity to resolve conflict of interests with user groups	Ability to acquire recognition and respect among user groups	Recognised participation in inter-institutional networks.
Interests and Benefits	Institutional vision and mission in IWRM	Image of Govt. Agency in other organisation	Generation of resources for financing additional activities	Capacity to initiate local developmental projects
Institutional strength to implement activities, processes and approaches	Capacity to manage new developmental projects	Existence of systems and operational procedures in the Department	Quality of Human Resources in the project	Strategies for
Recognition and formal authority	Recognition by the target group for the leadership and the capacity	Capacity to mobilise and being recognised by other stakeholders.	Mandate for project objectives	Degree of inter - departmental coordination in water sector

APPENDIX G



Areas of physical and economic water scarcity (Source: Comprehensive Assessment Secretariat, 2006: 8)



Projected Water Scarcity in 2025 (Source: Molden *et al*, 2001: 54)