ANALYSIS OF THE PROBLEMS DOMESTIC WATER USERS FACE AS THEY WORK TO PARTICIPATE IN WATER RESOURCE MANAGEMENT EFFORTS WITHIN THE KAT RIVER VALLEY WATER USER ASSOCIATION, EASTERN CAPE PROVINCE OF SOUTH AFRICA

By

Paul H. Vanderford

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APPROVED BY THE GRADUATE COMMITTEE OF:

_____

Dr. Anna Haines, Committee Chairman
Associate Professor and Extension Specialist

_____

Dr. Bryant A. Browne
Professor of Water and Soil Resources

_____

Dr. Wes Halverson
Professor of Water Resources and
Project Manager, UWSP Global Environmental Management Education Center

ABSTRACT

In 1998 the South African government created a national water management policy called the National Water Act.[1] The policy mandates the participation of all interested and affected parties within water management processes. The government branch in charge of oversight, the Department of Water Affairs and Forestry (DWAF), acknowledges that there are significant challenges in gaining the full participation of certain groups.[2] Domestic water users are named in this acknowledgement.

In 2005, this study was conducted to examine the problems domestic water users face when trying to participate in water management. The researcher worked with institutions and participants who are a part of creating a water management plan in the Kat River Valley (KRV), a small sub-catchment of the Fish to Tsitsikamma catchment situated in the Eastern Cape province of South Africa. Through the research, the researcher found that the domestic water users in the catchment experience many problems that act as barriers to their full participation in the current water management process.

The researcher examined these barriers using six data collection methods, using the Auerbach and Silverstein model of qualitative data analysis.[3] Through the analysis process a narrative was created to describe how each barrier impacts domestic water user participation.

[1] (South African National Water Act).
[2] (DWAF "National" 14).
[3] (Auerbach and Silverstein).

The barriers identified and described in this study have been and continue to be addressed in the catchment management plan's participatory process. Results also allow process planners to reinforce the actions being taken that have had positive effects breaking down barriers. Not only do results have local implications, but they will be helpful if the water management process in the KRV succeeds and is used as a model in other catchment management planning areas.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

CHAPTER ONE: INTRODUCTION

Importance of Study

"No one cares about water until the well is dry"

This observation came from Lew Roberts, a farmer in the Kat River Valley (KRV), a small sub-catchment (watershed) of the Fish to Tsitsikamma catchment situated in the Eastern Cape province of South Africa. The comment was made about people's interest in local water management efforts where he lives. Although Mr. Roberts' words were born from a small local issue, they touch on a global issue.

Demands for the earth's finite water resources continue to grow as the world's population and per capita consumption continue to increase. Increasing demands often generate conflict. The global well of fresh water has more people trying to draw buckets than water to fill them. Who can use water and how they can use it are issues gaining attention everywhere.

There are over 6.5 billion citizens on earth who are connected to water management in social, economic, and environmental ways. We use water for drinking, recreation, spiritual ceremonies, transportation, and various business enterprises. The human body is 55-60 % water and can only go 2-3 days without it.[4] Common water needs connect us all and yet humans frequently fail to come together and collectively manage water resources.

[4] (Brown 47).

In Central Asia the Aral Sea has shrunk to five percent of its original volume with a corresponding 23 meter drop in surface elevation.[5] The imminent death of the one time fourth largest lake in the world has already decimated industries and nearby settlements. Uzbekistan, Kazakhstan, Tajikistan, Turkmenistan, and Kyrgyzstan are caught up in the devastation, affected by the social, economic, and environmental issues created as a result of the diminishing water resource. Farms have gone under and several species have gone extinct.[6]

Seeing global water scarcity issues, many governments are working to establish effective water management processes. In an attempt to be proactive and meet the United Nations international water resource management agenda, the South African government has created progressive water management legislation to deal with national and international water management.[7] Key legislation was passed in 1998 and called the National Water Act, No 36 (NWA). The NWA requires catchment management agencies (CMA) and catchment management plans (CMP) to be created for each of the country's 19 major catchment areas.[8]

The act guarantees a reserve of water be left in the river to maintain the river's ecological health (called the ecological reserve) and mandates a second reserve be left to meet basic human water needs such as drinking, washing, and cooking (called the basic human

[5] (Zavialov 146).
[6] (Kriner 1).
[7] (Rowntree 1-3).
[8] (Motteux "Evaluating" 11).

needs reserve). Once reserves are met, water allocations developed through CMPs are to be managed by catchment management agencies.

Beyond requiring human and ecological reserves, the NWA mandates the inclusion of all interested and affected parties within CMA.[9] The NWA attempts to address social, economic, and environmental injustices. "The NWA states that an essential purpose of the Act is to redress the result of past racial discrimination, to promote the sustainable use of water in the public interest, and to facilitate social and economic development."[10] The NWA's aim to include all affected parties parallels International Association for Public Participation (IAP2) standards.[11]

Although the NWA has been acclaimed as being strongly pro-poor and pro-women legislation,[12] its praised inclusivity is threatened. Inclusivity is threatened because implementation of the act has been difficult. Many of the institutions required for implementation of the NWA didn't exist in 1998.[13] The Department of Water Affairs and Forestry (DWAF), the government agency in charge of implementing the NWA, lacks the resources to fully implement the Act.[14] In the face of limitations, DWAF has tried to set up CMAs in many catchments. As of 2005, DWAF had been unable to create a functioning CMA or CMP anywhere in the country.[15]

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[9] (Water Research Commission 15, South African National Water Act).
[10] (Motteux "Evaluating" 5).
[11] (International Association for Public Participation 89).
[12] (van Koppen 5).
[13] (McMaster et al. 8).
[14] (DWAF, "National" 125).
[15] (Water Research Commission 24).

DWAF-initiated CMAs frequently lack local support. The lack of local support limits buy-in to process decisions from domestic water users and other local water groups. This is a problem. Voluntary buy-in is critical due to the limited regulatory enforcement in the KRV.[16] People must have access to the water management processes. If water users don't voluntarily buy-in, decisions made by the WUA will likely not be followed. In a similar setting in Vietnam, also characterized by poverty and lack of regulatory enforcement, water regulations were found to be ineffective without public buy-in.[17] Ultimately, local participation and support are critical for success.

Many citizens have trouble participating even in processes that are meant to be inclusive. Social, economic, and historical issues such as poverty, racism, language, and education create barriers for many citizens who would otherwise participate.[18] "Sixty percent of the rural population can be considered as being marginalized in terms of access to both the water resource and decision making."[19]

Process planners and participants must find ways to successfully include people who find themselves put at a disadvantage and marginalized as they try to participate or who are excluded altogether. One process has been started in South Africa that offers an alternative to the DWAF-initiated CMA model.

[16] (Motteux "Evaluating" 96).
[17] (Baker 2).
[18] (Motteux "Evaluating" 73-74).
[19] (Motteux "Development" ix).

The KRV sub-catchment is the first place in South Africa that has attempted to create a CMP initiated and led by local groups.[20] In the KRV people who have a stake in how water is being managed (stakeholders) have come together and created two local institutions. The establishment of these institutions and a four year CMP development process are funded by the South Africa Water Research Commission (WRC). The WRC is a government branch in charge of supporting and developing water related research and monitoring. Planning and facilitation support is provided, at the request of the stakeholders, by Rhodes University researchers (Grahamstown, South Africa).

With the WRC and University's help the KRV stakeholders have been transforming an old irrigation board into a Water User Association (WUA) and forming a Catchment Forum (CF).[21] The WUA's mission is to develop a CMP and manage water allocations, the ecological reserve, and basic human needs reserve. The CF's unwritten mission is to give a voice to local communities interested in natural resource management issues.[22] The CF was formed after local communities decided they wanted more influence on resource management decisions in their catchment.

If the WUA, with the help of the CF and Rhodes University, can successfully create a CMP for their sub-catchment, the achievement would have great significance. The KRV could provide a roadmap for the rest of South Africa's catchments which struggle with implementing the NWA, as well as for the entire global community which struggles with

[20] (McMaster et al. 9).
[21] (Motteux "Development" 2).
[22] (Motteux "Development" 5).

similar problems. The KRV shows how water issues seen globally start locally and can be addressed at community levels.

The KRV water management process also has weaknesses. Many barriers exist that prevent or limit the stakeholder participation required by the NWA. Domestic water users, who have not significantly participated in the DWAF-initiated CMA attempts, are particularly vulnerable facing many unique social, economic, and historical barriers as they try to participate in the KRV water management process. DWAF calls these domestic water users disadvantaged. Identifying and addressing the barriers to this disadvantaged group is critical to aid their participation.[23]

Kat River Valley Historical Context

The KRV, like many places in South Africa, cannot be understood without considering the history through which the people have lived and which the landscape has witnessed.[24] The KRV is situated in the Eastern Cape Province of South Africa. The valley's population is 28,000.[25] The largest urban centre is a small town called Fort Beaufort. It consists of a main street surrounded by a small cluster of aging very modest homes. Sprawling in all directions from these homes are rows and rows of government funded cinderblock box-like homes and pieced together shacks. The town is suffering from economic decline and high levels of unemployment. Agriculture dominated by citrus farming is the valley's main economic activity.

[23] (McMaster et al. 12).
[24] (Burt and Vanderford 3).
[25] (Motteux "Development" 13).

In pre-South African and South African history the Kat River Valley has been one of the most contested areas in the region.[26] In the early 1800's Xhosa groups clashed with each other. British settlers clashed with the Xhosa and there were battles for all sorts of reasons. Eight major wars, called the frontier wars, occurred in the valley.[27] An oversimplified view of history would say the KRV was colonized. This is true to a point – colonists won the battle both in terms of their warfare and cultural dominance. But the diversity of the conflicts and the character of the people involved tell a much richer story.[28]

Eventually the settlers dominated, settling and building homes on their farmland. A mix of people lived in the valley. Some settlers worked with the Xhosa with respect and others abused the defeated group. Then a relative calm came and persisted until the mid-1900s when the Afrikaner led national government won elections against General Smuts and apartheid began.[29] Legislation introduced by the party created homelands in South Africa. The homelands and their inhabitants were given their own separate legal statues apart from South Africa. The creation of the homelands forced dark skinned native groups such as the Xhosa and Zulu (blacks) to move and live apart from the Afrikaners and other light skinned groups (whites) who now controlled the country and lived in the major city centers. Colored groups (children of one white and one black parent) were

[26] (Nel 1).
[27] (Motteux "Evaluating" 49).
[28] (Burt and Vanderford 3).
[29] (Burt and Vanderford 3).

caught in the middle. Some chose to stay behind in black led homeland areas, while others moved to white dominated areas of the country.

In the making of the Ciskei homeland, several farms in the KRV were confiscated from the grandsons and daughters of white settlers.[30] The administration of the Ciskei was largely corrupt. Oral history accounts tell of the Ciskei government letting white farmers use land that was meant for black communities.[31] In this way, land was stolen and used by the privileged. Land was depleted by overgrazing and then abandoned in favor of more healthy plots. Promises were made with regards to water access and the laying of pipes which to this day have not been fulfilled. Ultimately, over 200 years of power struggles left both the Xhosa and 'colored' groups oppressed and marginalized economically, politically, and socially.[32]

In 1994 the African National Congress led by Nelson Mandela took control of the country. Homelands, including the Ciskei homeland, were incorporated back into South Africa. The official boundary is gone, but when driving up the valley it is clear where the old homeland boundaries lay. The southern KRV landscape contains neatly managed citrus farms that were not taken in the creation of the Ciskei. As one travels north the orderly farms are abruptly replaced by scattered villages; most which still use water directly from the river and are without any form of energy source besides fires, paraffin stoves, and candles.

[30] (Burt and Vanderford 3).
[31] (Burt and Vanderford 3).
[32] (Motteux "Evaluating" 48-55).

Today three languages are widely spoken in the valley: English, Xhosa, and Afrikaans. These languages are three of the eleven languages officially recognized by the South African government.

Besides the racial segregation that plagued the KRV, water allocation privileges have segregated citizens of the valley in another way.[33] The mostly white farmers of the lower KRV were excluded from water allocation planning by a water allocation scheme created over twenty years ago. Middle KRV citrus farmers granted water allocation rights in this water management plan enjoyed water security.[34] The discriminating water scheme has created ongoing tension between privileged (scheduled) and unprivileged (unscheduled) farmers and the discrimination continues today.[35]

Kat River Valley Physical Context

The KRV is a semi-arid environment with an average annual rainfall of 600 mm.[36] The KRV is 80 kilometers in length and covers 1600 kilometers squared, with headwaters in the Elandsberg Mountains. The valley's land use is largely agricultural. Citrus is the major export, other crops include cabbage, corn, cotton, onions, potatoes, and lettuce.

[33] (Burt and Vanderford 3).
[34] (Burt and Vanderford 3).
[35] (Burt and Vanderford 3).
[36] (Nel and Hill 18).

Land ownership is based on both private and communal land possession. Large communal lands exist within the upper and middle sections of the KRV.[37] These lands are owned by small Xhosa and colored communities. Communal lands are heavily grazed by cows, sheep, and goats. Tourism exists on plots that are scattered throughout the valley, most significantly occurring in the upper KRV with an 18-hole golf course and in the game reserves of the lower valley. Major citrus farms are found in the middle and lower KRV. Game reserves and conservation areas dominate the land area of the lower KRV.

Goal of the Study

To determine what barriers inhibit previously disadvantaged domestic water users' participation within the Kat River Valley Water User Association.

Objectives

1) Use six sources of evidence to collect necessary research data.
2) Use peer researcher review, peer stakeholder review, and by triangulating between data collection techniques to validate research data.
3) Use Auerbach and Silverstein's grounded theory research methods to code and analyze research data.

[37] (Motteux "Development" 7).

Limitations and study weaknesses

1) Research will be done in a foreign social, environmental, and economic context.
2) Data collection may be affected by language, race, age and gender differences.
3) The study only includes people and institutions connected with the KRV/CMP process.
4) The researcher's active role in the water management process may affect data validity.
5) Research will only be conducted for one year.

Assumptions

1) Domestic water users ultimately are interested in water management.
2) There is a need for inclusive water management.
3) Collective management of water resources will help domestic water users in the KRV.
4) The WUA is the correct institution to incorporate domestic water users into KRV water management and the catchment area's CMP.

Use of Racial Terms

In this paper, the researcher uses the terms white, colored, and black. The term black is used in reference to indigenous Xhosa people; white to refer to Dutch and English speaking people of European origin; and colored in relation to Khoi, the Khoi-San and those of mixed race. These labels follow ethnic labels used by Motteux[38] in her work in the same research area.

In addition, these ethnic labels are terms used by participants to describe themselves and one another. In this way, the terms are contextual and part of the participants' personal identities. The researcher uses these terms to reflect the reality of the research area and

[38] (Motteux "Evaluating" 38).

honor the terms used by participants. It is acknowledged that the terms white, black, and colored may offend some readers.

Definition of Terms

Black: In this study, 'black' is the term used for indigenous Xhosa people.

Capacity: Capacity can mean many things depending on context. The researcher uses capacity in this paper to mean an individual's or group's aptitude, knowledge, position, or ability in relation to the given context. For example, a person's capacity to perform a task will depend on their knowledge of and personal ability to perform the task.

Catchment: The South African term for watershed. A watershed is a land area in which water naturally flows to a common point. Natural features such as mountains peaks, mountain ridges, or other high areas often form the edges of watersheds.

Catchment Forum: Catchment forums are institutions recognized by the National Water Act to represent specific stakeholder groups within Catchment Management Plans. The Kat River Valley Catchment Forum currently represents local black and colored communities through catchment wide projects and on the Water User Association. In the future small scale farmers and possibly traditional leaders will be involved in the Kat River Valley Catchment Forum.

Catchment Management Agencies: The agencies that must coordinate catchment management plans within a given catchment management area. They are in charge of making sure their catchment is meeting National Water Act mandates in regards to such requirements as stakeholder participation and reserves. They also have authority over water allocation decisions.

Catchment Management Area: The National Water Act of 1998 splits South Africa up into 19 major catchments. Each of these major catchments is called a catchment management area.

Catchment Management Plan: The plan created by each catchment management area to accommodate the ecological and basic human needs reserves required by the National Water Act of 1998 as well as water allocation needs of stakeholder groups.

Colored: In this study, 'colored' is used in reference to people who identify as Khoi, Khoi-San, or as someone of mixed race.

Department of Water Affairs and Forestry: The branch of the South African government in charge of water and timber resource management.

Domestic Water User: A person who uses water for domestic purposes such as drinking, washing, bathing, home gardens, and cooking.

Irrigation Board: The water allocation institutions present in South Africa before and during the South African apartheid regime. The institutions were run by white farmers.

Kat River Valley: A small sub-catchment of the Fish to Tsitsikamma catchment situated in the Eastern Cape province of South Africa.

Large Scale Farmer: Farmers with more than five hectors of land.

National Water Act of 1998: The water law created in South Africa which decentralizes water rights to catchment management areas, requires the creation of catchment management associations, catchment management plans, and mandates the inclusion of all interested and affected parties.

Participation: Participation can mean many things. In this paper, the term "participation" refers to interaction, in any form, between people who are interested and or affected by water management with the water management planning process. This interaction may be direct such as someone attending a planning meeting or indirect such as a discussion held between a water user and a WUA representative.

Previously Disadvantaged: In the Kat River Valley previously disadvantaged refers to Xhosa and 'colored" people who have not benefited from access to education, land, skills or favorable policies and hence lack the confidence and knowledge crucial to becoming equal negotiators in the current Kat River Valley process of water management (Motteux, 2002).

Stakeholder: Any person who is interested or affected by water management in the Kat River Valley (NWA, 1998).

Small Scale Farmer: Farmers with less than five hectors of land.

Triangulation: Is the process of using multiple methods and/or data sources to study the same phenomenon (Yin, 2005). Methodological weaknesses in one method can be compensated for by the strengths of others; and data inconsistencies revealed can be reevaluated, verified or discredited.

Water Research Commission: The branch of the South African government in charge of supporting and developing water related research and monitoring.

Water User Association: In this study, water user association refers to a local water management institution in the Kat River Valley sub-catchment. The institution is in charge of making sure the sub-catchment is meeting National Water Act mandates in regards to such requirements as stakeholder participation and reserves. They also have authority over local water allocation decisions.

White: In this study, 'white' refers to Dutch and English speaking people of European origin.

Abbreviations

NWA	National Water Act of 1998
CMP	Catchment Management Plan
CMA	Catchment Management Agency
DWAF	Department of Water Affairs and Forestry
WRC	Water Research Commission
KRV	Kat River Valley
WUA	Water User Association
CF	Catchment Forum
SA	South Africa
IAP2	International Association for Public Participation

CHAPTER TWO: REVIEW OF THE RELATED LITERATURE

The research goal for this paper is to understand what barriers inhibit previously disadvantaged domestic water users' participation within the Kat River Valley Water User Association." The goal of this chapter is to examine relevant literature and necessary background context to provide academic framing for the paper.

This chapter will address the following topics:

I. Literature and Legislation Regarding the General Issue of Public Participation in Natural Resource Management

- Arnstein's Ladder and the IAP2 Spectrum
- The public participation trend, from agency to joint management
- Legislation supporting the trend in the U.S. and S.A.
- Warnings about inadequate participation processes
- Literature availability

II. Primary Literature

Lachapelle, McCool, and Patterson: *Barriers to Effective Natural Research Planning in a "Messy" World*

Jef Van Den Broeck, Han Verschure, and Lawrence Esho: *Urban Development by Co-Production*

Diduck and Sinclair: *Public Involvement in Environmental Assessment: The Case of the Non-Participant*

Jennifer Lord and Antony Cheng: *Public Involvement in State Fish and Wildlife Agencies in the US: A Thumbnail Sketch of Techniques and Barriers*

Anne Carroll and Brian Stenquist: *Affirmative Design: An Innovative and Serious Look at Diverse Public Participation*

III. Secondary Literature

- Barriers mentioned most frequently in the literature
- Barriers not identified in the primary literature section
- Barriers more specific to South African literature

I. Literature and Legislation Regarding the General Issue of Public Participation in Natural Resource Management

Arnstein's Ladder and the IAP2 Spectrum

Public participation in the management of resources has occurred in various forms reaching back though human history. However, having the public participate formally in natural resource management decision making processes is relatively new. Therefore, studies of public participation and specifically the barriers to public participation are also new. The most prominent documents within this field of study are frameworks which help planners plan for and guide public participation processes. Arnstein's "Ladder of Citizen Participation" in 1969 and later the International Association for Public Participation's (IAPP) "Public Participation Spectrum" have given planners the basic frameworks to work from when planning public participation. These two contributions clarify what level of power sharing a given project should consider under different planning contexts.[39] Lack of clarity about who holds ultimate decision making power within a management process can negatively affect public participation.[40] In this way, Arnsein and the IAPP have helped planners. However, studies since 1969 have gone further and offer greater insight.

Legislation Supporting Public Participation in the US and SA

[39] (Arnstein, IAP2).
[40] (IAP2 145).

There is now a lot of attention being placed on public participation in natural resource management.[41] One often sees public participation mechanisms related to environmental impact assessments, city planning, multiple use forest management, and other planning process that affect the public. In South Africa public participation is mandated through the National Water Act of 1998 and other acts created to mend inequality since the end of South Africa's apartheid government.[42] The NWA requires that all "interested and affected people" be involved.[43] In the U.S. public participation has been increasing since the 1960s, helped by the Freedom of Information Act 1966, National Environmental Policy Act 1970, and the National Forest Management Act 1976.[44]

The Public Participation Trend, from Agency to Joint Management

Management power has moved away from agency specialists entrusted with the public interest to a shared management model, where specialists and citizens manage resources together.[45] Unfortunately, agencies have sometimes been resistant to power sharing, reluctant to trust the public as a worthy partner in the management process.[46]

Warnings about Inadequate Participation Processes

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[41] (Adomokai and Sheate, Halvorsen "Effect," Burns et al, Diduck and Sinclair).
[42] (DWAF "Generic," DWAF "National," Lotz-Sisitka and Burt, Motteux "Evaluation").
[43] (Water Research Commission 15, NWA).
[44] (Halverson "Critical" 150, Diduck and Sinclair 2, Lachapelle McCool and Patterson 475).
[45] (Lachapelle McCool and Patterson 474-75, DeBruyckere 335, Diduck and Sinclair 2).
[46] (Lachapelle McCool and Patterson 475, McCool and Guthrie 315, Lord and Cheng 66, Mortenson and Krannich 278).

Public participation for appearance sake is not enough. Some authors describe processes that are poorly connected to actual decision making or any other end product, being performed only to meet minimum legal requirements.[47] Two professionals take this observation one step farther. Bill Cooke and Uma Kothari, in their book entitled *Participation: The New Tyranny,* suggest that people in power can abuse participation. They warn that powerful players can abuse participation, using it only to pretend that a democratic process has occurred, when in fact the powerful players have no intention of listening or of changing their own plans and decisions based on that process.[48] Although these warnings do not suggest that public participation as a whole is undesirable they do offer valuable insight into a problem that must be avoided. If a participatory process has no meaningful connection to final decision making, a major barrier is present.

Literature Availability

Greater attention to public participation in natural resource management has not translated into quality studies which investigate barriers to such participation. Most studies look more generally at the public participation process with little or no mention of barriers. Alan Diduck states, "Despite the attention public involvement has received from decision makers and in the literature, little regard has been paid to barriers to such

[47] (Almer and Koontz 476, Hampton 169, Adomokaia and Sheate 513).
[48] (Cooke and Kothari 3).

activities."[49] This lack of specific attention to barriers could be detrimental to goals of inclusion. Lachapelle, McCool, and Patterson write, "Our research shows that even one barrier may be enough to overwhelm those involved in the process."[50] Diduck writes further on the issue of barriers, sharing experience he gained during one specific study; "If you want to participate in this process, you had to be willing to do a lot of work to break through barriers that were being put up in front of you."[51] It is clear that barriers are hindering many processes from achieving their goal of inclusion.

Some research has focused specifically on barriers, but more often research addresses barriers as a side issue in more general public participation studies. Because of this overly general approach to studying public participation, much of the data available on barriers to public participation in natural resource management is vague and incomplete. Five studies, however attempt to offer a comprehensive look at barriers by breaking barriers up into categories and then further discussing each type. These core studies will be examined next. Studies that offer less complete information with be considered afterwards.

II. Primary Literature

Barriers to Effective Natural Research Planning

[49] (Diduck and Sinclair 578)
[50] (Lachapelle McCool and Patterson 488).
[51] (Diduck and Sinclair 583).

Paul Lachapelle, Stephen McCool, and Michael Patterson in their study titled *Barriers to Effective Natural Resource Planning in a "Messy" World* divide the barriers they found into five main types. Each type was found present in one or more of the participation processes:

- Inadequate goal definition
- Lack of trust
- Constraining procedural obligations
- Process inflexibility
- Limiting institutional design

The authors' work focused on four public participation processes: the Upper Clark Fork River Basin Management Plan, the Glacier National Park General Management Plan, the Blackfoot River Recreation Management Plan, and the Bitterroot Ecosystem Grizzly Bear Recovery Process. The projects represented a diverse spectrum of participants, planning goals, and resources.

Interestingly, the authors did not find "lack of public interest" to be a barrier in the public processes they examined.[52] Moreover, Lachapelle, McCool, and Patterson's study is not the only study to find the "lack of interest" barrier insignificant. The absence of an "interest barrier" was mentioned by Jennifer Lord and Antony Cheng in their study for US state fish and wildlife agencies and by Alan Diduck and John Sinclair in their study

[52] (Lachapelle McCool and Patterson 480).

called *Public Involvement in Environmental Assessment: The Case of the Nonparticipant*.[53]

Marian Farrior provides some insight into these contradicting conclusions regarding the "lack of interest" barrier by suggesting that public interest must be cultivated within a process by connecting process goals to local economic and social issues. "Issues must be made personally relevant."[54] Farrior's input suggests that disinterest is less likely to become a barrier to public participation if the process itself is proactive, systematically seeking to connect management issues to participants' lives. This explains why lack of interest could be a significant barrier in one participation process but not in another.

Urban Development by Co-Production

Jef Van Den Broeck, Han Verschure, and Lawrence Esho, in their study entitled *Urban Development by Co-Production*, examine public participation processes surrounding land management in four different cities. Their study doesn't devote all its attention to barriers the public faced within the participation processes but the study's geographic diversity (it focuses on sites in Morocco, Kenya, Vietnam, and Cuba) gives their findings significant value. Instead of dividing barriers into five main categories as Lachapelle, McCool, and Patterson have done, Van Den Broeck, Verschure, and Esho identify just two general types of barriers:

[53] (Lord and Cheng 62, Diduck and Sinclair 586).
[54] (Farrior 9).

- Structural
- Cultural

The authors then detail more specific barriers under their two main categories. Structural barriers include issues like *social segregation, marginalization, exclusion and alienation* from access to power and government. Cultural barriers, on the other hand, include *lack of education, inadequate skills and capacities, and social backgrounds.*

When the study goes into even more detail *trust, lack of resources, existing conflicts, and time restraints* are added to its list of barriers. It is unclear which of the two main categories these additional barriers are assigned to.

There is clearly an overlap between the barriers identified by Lachapelle, McCool, and Patterson and the barriers observed by Van Den Broeck, Verschure, and Esho. However, it is also interesting to note the differences. Social backgrounds, skills, and the capacity of individuals to participate are listed only in Van Den Broeck's study. On the other hand, issues like limiting institutional design, process inflexibility, inadequate goal definition, and constraining procedure obligations were unique to Lachapelle's findings.

The Case of the Non-Participant

Alan Diduck and John Sinclair in their study entitled *Public Involvement in Environmental Assessment: The Case of the Non-Participant* investigated the barriers to

public participation within environmental assessments in Canada. First the authors interviewed leaders of Canadian provincial, federal, and non-governmental institutions. Second, Diduck and Sinclair conducted a case study of a public participation process in Manitoba. These authors identify two "primary categories" of participation barriers:

- Structural
- Individual

For each primary category the authors also identify secondary and sometimes tertiary categories.

The *structural* category has four secondary categories: involuntary complexity, process deficiencies, alienating dominant discourses, and lack of institutional capacity. The secondary and tertiary categories are laid out as follows:

<u>Secondary Categories</u>

<u>Tertiary Categories</u>

Involuntary complexity	I. *Consumerism*
	II. *Work and Family Pressures*
	III. *Social and Civic Commitments*
	IV. *Consultation Fatigue*
Process deficiencies	I. *Inadequate notice*

II. *Lack of participant funding*

III. *Lack of opportunity*

IV. *Inaccessible information*

V. *Foregone Conclusion*

VI. *Unresponsiveness*

Alienating dominant discourses

I. *Extremism*

II. *Nay sayers*

III. *Technical focus*

IV. *Proponent control of public involvement*

Lack of institutional capacity

The *individual* category has six secondary categories: concerns were adequately addressed, not directly affected, left in the others/trust in government, lack of understanding, lack of skills, and character traits. The secondary and tertiary categories are laid out as follows:

Secondary Categories	Tertiary Categories
Concerns were adequately addressed	
Not directly affected	

Left in the others/trust in government

Lack of understanding	I. *Legal rights*
	II. *Technical issues*
	III. *EA process*
	IV. *Potential impacts*
	V. *Role of the media*
Lack of skills	I. *Preparing written briefs*
	II. *Public speaking*
Character traits	I. *Laziness*
	II. *Indecision*
	III. *Shyness*
	IV. *Apathy*
	V. *Paranoia*
	VI. *Lack of community ethic*

The level of detail provided by Diduck and Sinclair is significant. Their barrier identifications bring up many issues that neither the Van Den Broeck nor Lachapelle study present. Significantly, the only barrier identified in all three studies is trust. Other overlapping barriers are lack of resources, inadequate skills, and process inflexibility.

It is also interesting to note that Diduck and Sinclair's study is the only piece of literature available which mentions the public's increased consumerism as a barrier to participation. However, there is some overlap between the Diduck study's observation and others. Other studies mention time as a major barrier.[55] The reason Diduck and Sinclair bring up consumerism as a barrier is because it generates activity that often limits people's time to participate in civic processes. In this way, the consumerism barrier could be lumped with the time barrier sited by the other studies.

Affirmative Design and Public Involvement in State Fish and Wildlife Agencies

Jennifer Lord and Antony Cheng's study entitled "*Public Involvement in State Fish and Wildlife Agencies in the US: A Thumbnail Sketch of Techniques and Barriers"* used surveys sent to public participation practitioners in each of the fifty states to gather data. Their study was able to identify ten significant barriers that limited public participation.

Anne Carroll and Brian Stenquist's journal article entitled *"Affirmative Design: An Innovative and Serious Look at Diverse Public Participation"* identifies and summarizes the barriers they have discerned through their work as academics and public participation practitioners.

[55] (Burt et al. "Workshop," Debruyckere, DWAF "Generic," DWAF "National," DWAF "Public," Halverson "Critical," Halverson "Effect," Halverson "Public," Lord and Cheng, Lotz-Sisitka and Burt, Motteux "Development," Motteux "Evaluation," Schlozman Brady and Verba, US Environmental Protection Agency, Vota).

The Lord study provides an inclusive look at process barriers and the Carroll study provides a significant look at barriers largely external to process. In combination the two sources provide an examination of barriers to public participation in natural resource management processes that encompasses the majority of barriers identified in barrier literature as a whole.

Lord's study lays out ten process barriers:

- Lack of public understanding of the decision process
- Limited funding, staff, time, and administrative resources
- Poor communication
- Politics and power imbalance within the process
- Agency resistance to losing control
- Lack of protocol for how to do public participation
- Lack of interest
- Lack of staff training
- Lack of commitment by decision makers
- Lack of understanding of decision process by staff

Carroll's study lays out twelve barriers external to process:

- Language
- Culture and race
- Gender
- Communication

- Sexual Orientation
- Religion
- Lack of education
- Lack of political or interest group affiliations
- Economic statue
- Age
- Learning style (visual, aural, tactile…)
- Other project-specific issues

After discussing external barriers Carroll and Stenquist also mention the need for process flexibility. The two write that a successful process must constantly monitor its own progress, re-design itself accordingly throughout its implementation, and include meaningful evaluation.[56]

Surprisingly, trust - the one major barrier common to the Diduck, Van Den Broeck, and Lachapelle studies is not mentioned by the Lord study or Carrell study. However, the three other barriers that overlap between the Diduck, Van Den Broeck, and Lachapelle studies (lack of resources, inadequate skills, and process inflexibility) are also present in the list created by the Lord and Carroll studies.

Other barriers mentioned by two or more of the primary literature sources are lack of education, lack of communication, lack of capacity (the institution's or the participant's),

[56] (Carroll and Stenquist 3).

lack of understanding (process or process goals) and culture/race/background issues. Although these five primary literature sources don't cover all barriers that affect public participation processes they do offer a good starting point for discussing and understanding common barriers that exist between process and the public practitioners aim to serve.

III. Other Contributing Literature

Barriers Mentioned Most Frequently in the Literature

All the barriers identified by the Lachapelle, Van Den Broeck, Diduck, Lord, and Carroll studies are significantly supported by other studies - with five exceptions. The exceptions are lack of public participation protocol, sexual orientation, religion, lack of affiliations, and learning styles. The three most widely identified barriers are lack of clear process goal or process understanding (cited in 28 of the 53 articles consulted), lack of interest (cited in 33), and lack of resources (cited in 44).

Several barriers received significantly higher emphases in the secondary literature then in the primary literature. These barriers include politics and power imbalance within the process (cited in 14 of the 53 articles consulted), lack of interest (cited in 33), lack of commitment to process by powerful players/decision makers (cited in 12),

language/translation (cited in 15), gender (cited in 15), and belief that the process outcome is a forgone conclusion (cited in 13).

It is worth mentioning that in the literature the interest barrier is two dimensional. Half of the literature that identifies interest as a barrier attributes a lack of interest in a process to the process not being able to connect process goals with participant needs. The other half of the literature states that interest is often not present because participants who are poor have more pressing issues to consider such as food, shelter, and clothing.[57] Such participants have not met the basic needs identified by Maslow's hierarchy of needs. Maslow's hierarchy suggests that until basic human needs are met, humans don't worry about "higher level needs."[58]

Barriers Not Identified in the Primary Literature Section

There are barriers to public participation in natural resource management process that are valuable to understand which weren't mentioned by any of the primary literature. Below is a table of these barriers. Next to each new barrier in the table are stars. The number of stars on the right represents the number of secondary literature sources that mentioned the barrier. Fifty-three studies are represented in this table.

TABLE 1: Additional Barriers to Public Involvement in Natural Resource Decision Making Processes

Barriers	**Number of Studies that Identify the Barrier**
Tradition	*
Lack of self confidence	******** (8)

[57] (Adomokai and Sheate 514).
[58] (Maslow).

Poor transportation	********** (14)
Children	****
Lack of meeting comfort	***
Lack of meeting accessibility	*****
Fear/intimidation	****
Lack of information or access to information	******
Not involved early enough in process	******
Process is overly technical	**
Lack of process ownership	*
Unclear participant goals and needs	********** (10)
Lack of process credibility	***
Corruption	*
Lack of awareness of process/ignorance	********** (14)
Biased/poor quality information	****
Gain compensation from environmental degradation, no interest in resolution	*
Lack of Transparency	*
Lack of institutional structure to aid representation/participation	**
Lack of partnerships	******* (7)
Lack of local communication channel understanding	*
No disability access	*
Lack of regulatory process	*
Low empowerment	********* (9)
Poor facilitation	********** (11)
Feeling of nothing to contribute	*
Non-participation as a form of protest	*
Lack of leadership	***
Process not viable past funding period	*
Land tenure/water rights	*****
Lack of technical support	***
Government boundaries vary from watershed boundaries/jurisdiction	***
Lack of feedback to local people by representatives	******
Internal agency power struggles	*
Polarization/preconceptions	********** (11)
Bottom up process not linked to top down actors	*

There are two likely explanations for the lack of overlap between barriers found in the various studies. First, the lack of overlap reveals the diversity of possible barriers to a

public participation process. People are limited in their access to public processes for all sorts of reasons. Because there are so many types of barriers, studies may focus in on several specific barriers instead of covering the full spectrum. This can be seen in the Lachapelle study where all barriers identified are related to the participation process itself (lack of clear goals, trust, procedural obligations, inflexibility, and institutional design). The Lachapelle study's focus doesn't enable the authors to look at social barriers like gender or transportation to and from meetings. Conversely a study on gender like the one done by Kathleen Halvorsen entitled *"Working and Lower Middle Class Women and Obstacles to Environmental Related PMP"* doesn't offer insight into process barriers. Many studies are like the Halvorsen study or the Lachapelle study, offering focused observations without providing insight into the full spectrum of possible barriers. By looking at the findings of all 53 studies together it is possible to gain a more complete view.

Second, the lack of overlap reflects the need for a common language for discussing barriers. Researchers are using different terms to denote the same observations. The Van Den Broeck study and the Diduck study offer a good example. Some of their terms are shared. Both studies identify two main categories of barriers to public participation. They both identify structural barriers as one of their two main categories. The term "structural" is commonly used to define policy or institutional restraints on public participation processes. This commonality shows a similarity between the two study's findings.

What is less apparent is the similarity between both studies' second categories. The two studies use different words for their second primary categories. One study uses the term "cultural" and the other uses "individual." The "individual" category found in the Diduck study includes these barriers: lack of understanding, skills, and character. However, the Van Den Broeck study's use of the term "cultural" includes lack of education, inadequate skills and capacity, and social background as barriers. One can see how similar the barriers identified under the two terms are. The categories of "culture" and "individual" have significant overlap and could be merged under a common language. A second example of barrier labels that overlap can be seen in the terms "capacity" and "empowerment." One could shorten the list of barriers found in the public participation literature by combining terms that describe similar observations.

Not only do some barriers overlap with others but some barriers directly impact others. For example, not involving the public early enough in the process directly affects process cost and resources. The authors Adomokai and Sheate with their work in the Niger Delta on community participation found that, though costly, it is less costly to involve the public at the beginning of the process than later on.[59] Another example of barriers impacting one another can be seen among these barriers: unclear participant goals and needs, awareness for process, lack of understanding of process goals, and lack of interest. There must be awareness that a process exists before participants can learn about process goals. Once participants know the process goals they can reflect on their own needs and ultimately develop an interest in participating. Thus, no barrier should be seen in isolation.

[59] (Adomokai and Sheate 501-02, DWAF "Public" Guide 4 Sec 9).

Barriers More Specific to South African Literature

Thirteen of my 53 literature sources are from South African studies. Yet, some of the barriers mentioned above are discussed only in South African literature. Other barriers gain the *majority* of their support from the South African literature. One example is lack of feedback to local people by representatives. The barrier is mentioned by six sources[60] all of which are South African. Other barriers that are more prevalent in the South African literature are:

- Polarization/preconceptions
- Low empowerment
- Process is not viable past funding period
- Unclear participant goals and needs
- Lack of awareness of process/ignorance
- Lack of transportation
- Politics and power imbalance with the process
- Lack of interest
- Lack of partnerships
- Lack of transparency
- No disabilities access

[60] (Burt et al. "Workshop," Burt et al. "Voice," DWAF "Public," Motteux "Development," Motteux "Evaluation," Rowntree).

In conclusion, the desire for public participation in natural resource management has been increasing worldwide over the last several decades, driven by government policy and public demand. Resource management processes are responding to this demand but the goal of inclusion is still elusive. Many barriers still exist and there is a need for greater understanding of these barriers. The researcher's focus, in this paper, on process barriers helps to provide a look at this minimally studies area of natural resource management.

CHAPTER THREE: METHODOLOGY

This chapter details the methodology used to achieve the goal of this study: to understand what barriers affect previously disadvantaged domestic water users' participation within the Kat River Valley Water User Association.

TABLE 2. Timeline of steps taken to fulfill research objectives, 2005.

	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Sources of Evidence:											
Meeting Observation		*		*	*			*	*	*	*
Informal Interviews				*	*	*	*	*	*		
Formal Interviews									*		
Field Observations	*	*		*	*	*	*	*	*	*	*
Researcher Meeting Observation	*	*	*	*	*	*	*	*	*	*	*
Poster Creation								*	*	*	
Validation:											
Peer Researcher Reviews	*	*	*	*	*	*	*	*	*	*	*
Stakeholder Reviews				*	*			*	*	*	*
Triangulation									*	*	*
Data Coding and Analysis									*	*	*

The researcher conducted research in the Kat River Valley, Eastern Cape, South Africa between February 14th and December 14th, 2005. The researcher used a case study research approach and grounded theory methodology to select research methods. Grounded theory came out of clinical sociology in the 1960's as a systematic approach

for generating theory from data.[61] The researcher used six data collection methods: formal interviews, informal interviews, meeting observations, field observations, research team meeting observations, and poster creation. Peer researcher reviews, stakeholder reviews, and triangulation further validated the information. Triangulation helped authenticate results by showing conclusions are supported by multiple data sources. An inductive process of analyzes was used to evaluated the data.[62]

This chapter is divided into five subsections:

- **Subsection 1:** Sources of evidence
- **Subsection 2:** Validation measures
- **Subsection 3:** Data coding and analysis procedures
- **Subsection 4:** Transparency steps and ethical protocols
- **Subsection 5**: Methodological weaknesses

Subsection 1: Sources of Evidence

The researcher gathered evidence using six data collection methods: meeting observation, informal interviews, formal interviews, field observations, research team meeting observations, and poster creation.

Method 1: Meeting observations

Who was observed?: Observations were conducted by the researcher at fifteen meetings between March 8th and December 2nd, 2005. Meeting observations included:

[61] (Strauss and Glaser).
[62] (Auerbach and Silverstein).

five Water User Association meetings, four Catchment Forum workshops, a forestry forum meeting, Water Research Commission meeting, Nkonkobe district tourism planning meeting, and an African National Congress community chapter meeting held in Cath Cart Vale.[63]

How were meetings chosen for observation?: Opportunity dictated meeting selection. All Catchment Forum and Water User Association meetings accessible between March and December 2005 were attended and observed by the researcher. Access means that the research team had knowledge of a meeting and an invitation from the group to be observed. Meeting observations were focused on the WUA and CF because of the two institutions' role in local water management in the KRV. The WUA is the legal water allocations body. The CF works on resource management issues with over thirty KRV rural communities. In addition to WUA and CF meetings, the researcher attended all other accessible meetings relevant to water management held by any institutions in the KRV during the study period.

Ethical protocol: The research team introduced ourselves and shared research goals during the first meeting attended with each group. All questions were answered.

Documentation: The procedure for making and documenting observations was informal due to the varying nature and purpose of each meeting and host institution. To provide consistency, the researcher created general observation guidelines to focus note taking on information related to the research question. Guidelines focused observations

[63] (Table 2).

on: stakeholder group attendance, gender, communication and language, finance, meeting structure, negotiations, and the water issues discussed. Research observations were kept in 8" by 6" field notebooks and later typed into word documents according to date, meeting, and subject. Meetings ranged from an hour to two days in length.

Method 2: Informal Interviews

Who: The researcher conducted twenty seven informal interviews between May 4th and October 4th. Interviews were held with stakeholders representing a diverse range of stakeholder groups. The groups include: tourism, conservation, game reserves, large scale citrus farmers, emerging citrus farmers, small scale farmers, stock farmers, traditional leaders, community leaders, domestic water users, municipality, Department of Water Affairs and Forestry, and Rhodes University.[64]

How: The researcher set up interviews based on a system of branching interviewee identification. The branching technique was necessary because initially, the Rhodes University research team only knew of a few stakeholders. First, interviews were set up with the known stakeholder group representatives. Initial interviews were held with: Lew Roberts, Erik Nohamba, Kate Rowntree, Jane Burt, Luyanda Nkayi, David Ndindwa, and Jerry Ntsebeza. At the end of each meeting the researcher asked interviewees to identify groups of people who use water or who are affected by water use in the KRV. When interviewees identified groups which hadn't previously been identified interviewees were asked for specific names and contact details. Based on the information gathered from the first group of interviewees, the researcher set up

[64] (Table 3).

interviews with newly identified stakeholders. A second round of interviews was carried out with the new group. At the end of the second round of interviews, the researcher asked interviewees to identify groups of people who use water or who are affected by water use. New contacts were used to set up a third round of interviews. The researcher continued the branching process with successive rounds of interviews until it took three or four interviews to gain new contact information and additional branching became cost prohibitive.

Ethical protocol: At the beginning of each interview the researcher gave the interviewees a copy of the research purpose form.[65] The form provides information on whom the researcher was, why the research was being conducted and what the data collected was going to be used for. In addition, the researcher asked interviewees to sign an ethical protocol and consent form which further outlined their rights as participants.[66] Forms were available in English and Xhosa. Every person the researcher contacted for an interview was willing to participate in the study and remained willing to be involved through the six month interview period.

Documentation: The researcher created a set of guiding points to provide structure for the informal interviews.[67] An example of a guiding point question is "who in the KRV is represented on the WUA?" Interviews ranged in length from 20 minutes to one hour depending on the length of interviewee responses to questions and the flow of conversation. The researcher drove to interviewees' homes or places of work to conduct

[65] (Appendix 1).
[66] (Appendix 2).
[67] (Appendix 3).

interviews. Notes were taken directly on guiding points sheets and later transcribed into word documents according to date, stakeholder group, and interviewee.

Method 3: Formal Interviews

Who: The researcher held formal interviews with eleven WUA members between October 10th and October 12th.[68] Interviews were held with: Yannie DeVilliers, Ester Ebi, Mike Magwa, Elias Manci, Mava Mgwali, Andile Ndindwa, Luyanda Nkayi, Eric Nohamba , Makhwabe Ntsiknlelo, Lew Roberts, and Mr Taboo.

How: The researcher gathered contact information from the WUA secretary and research team records. All WUA members were contacted for interviews. Meetings were arranged with as many members as possible. The researcher conducted interviews at interviewee's homes or places of work.

Documentation: The researcher created questions for the interviews that would evaluate WUA meeting process and stakeholder involvement issues.[69] Two of the eleven interviewee's requested that their interviews be conducted in Xhosa. Monde Ntshudu conducted the Xhosa interviews. During Xhosa interviews, Hengiwe Gumede translated for English only speakers. After the two meetings held in Xhosa the team translator Monde Ntshudu, reviewed the interview notes to increase accuracy. Notes were taken by the researcher in an 8" by 6" field notebook and later typed into word documents according to date, WUA member, and subject.

[68] (Table 2).
[69] (Appendix 4).

Method 4: Field Observations

Who: Each research trip taken into the Kat River Valley for interviews, meeting observations or poster creation workshops provided opportunity for field observation. The researcher made field observations during research trips between February 25th and December 2nd, 2005. In depth observation was possible during an extended visit to the Kat River Valley from October 3rd-October 25th.

How: On average, the researcher took trips to the Kat River Valley once a week for the duration of the ten month study period. The extended visit to the KRV was spent with two rural Xhosa families. Opportunity dictated which families were chosen. One of the families the researcher stayed with lived in the rural Xhosa village of Cath Cart Vale, a community with no running water or electricity. The second family stay was in the rural Xhosa village of Hertzog, a community with water taps along the main road and in-dwelling electricity.

Documentation: Observations were informal. During field observations the researcher gave special attention to communication, transportation, formal and informal group structures present in the KRV, representation and participation within local groups, and water issues. All field observations were taken in 8" by 6" field notebooks, put in context, and dated. Later, observations were typed into word documents grouped by notebook, date, and issue.

Method 5: Research team meeting observations

Who: Ten researchers worked with the WUA and CF in the KRV during 2005. The researcher working on *this* study was one of the ten researchers. Although, each researcher had their individual academic interest and research questions, everyone's research data was shared with and checked by the research team. The sharing enhanced all members work. Team discussions provided opportunity for the researcher of *this* study to take notes on views and ideas he hadn't yet identified in his own research. In this way, the researcher made "research team meeting" observations between February 14th and December 14th, 2005. Research team members included: Helen Fox, Jane Burt, Monde Tshudu, Hengiwe Gumede, Marjolein De Jong, Marthe Abrams, Stefano Farolfi, Jean Pierre Muller, and Bruno Bonte.

How: The researcher took notes at all research team meetings that addressed topics related to *this* study. The team held most meetings in the research team office at Rhodes University. When meeting location was not at Rhodes University meetings were held in the field. The team held meetings every other week from June through November and irregularly outside of this period. Over 20 meetings were held in total.

Documentation: The researcher took notes informally with special attention given to historical information, team members' field and meeting observations, meeting facilitation issues, transportation, and communication protocols. The researcher's observations were recorded in 8" by 6" field notebooks and later were typed into word documents grouped by notebook, date, and issue.

Method 6: Poster creation

People's understanding of what an institution is and does effects their expectations of the institution. As a result, the research team assumed that domestic water users' understanding of the WUA would affect their expectations of the WUA and ultimately their relationship with the WUA. It was the research team's aim to improve the relationship between domestic water users and the WUA. Therefore, the team needed to understand domestic water users' expectations to help plan effective WUA involvement strategies and meetings. The poster creation method was chosen because it helps to gather information on domestic water users' understandings and expectations of the WUA, the CF, and the KRV water management process.

Who: The researcher used poster creation as a data collection tool at three workshops from June through November 2005. During this time, 15 village members, 24 CF members and five research team members[70] contributed to the creation of three posters.[71] The researcher held one workshop in the village of Ntilini and a second workshop in the village of Seymour. The final workshop was held in the Lower Blinkwater community hall with the members of the CF and village workshop participants from the Ntilini and Seymour.

How: Many villagers in the KRV were interested in poster creating activities. Funding limited the scope of the poster creation to two villages. Luyanda Nkayi (CF chairman)

[70] (Appendix 5).
[71] (Appendix 6 and Appendix 7).

identified one village in the middle (Ntilini) and one in the upper KRV (Seymour) to participate in the study. Village workshops were organized by the two village's CF representatives who selected seven individual community members and delivered invitations for the workshops. For the CF workshop, where both CF members and community members were desired, Monde Ntshudu and the researcher delivered invitations to CF members. Village members were invited through the CF village representatives.[72] Meetings were facilitated by Monde Ntshudu

Meetings had five phases: For the first phase, Mr. Ntshudu and the researcher told stories about how they were representatives in our own lives. They then discussed what their jobs were in these roles and what other people expected of them while Mr. Ntshudu and the researcher were acting in these "representative roles." Second, village members were asked to share a situation where they had acted as a representative of others. Third, the group was asked to come up with an ideal representational situation by creating a story answering eight guiding questions.[73] Fourth, Mr. Ntshudu and the researcher asked the group to explain their "ideal representation" story using their answers to the guiding questions. Mr Ntshudu and the researcher encouraged participants to share stories from past positive and negative experiences. Last, the village members with the help of Mr. Ntshudu and their CF representative condensed the group's discussion into core ideas that could be made into a poster. Later with the participants' permission, Mr Ntshudu and the researcher formatted the core ideas to answer the question, "What does being represented mean to our community?"

[72] (Appendix 8).
[73] (Appendix 9).

After the workshops were held with the villages of Ntilini and Seymour the same five phases were used at the CF workshop with the addition of one step between the second and third phase. Mr Ntshudu and the researcher added an additional step to allow Ntilini and Seymour village members to present their village posters to the CF. This step gave CF members a chance to hear the two community's answers to the question "what does ideal representation look like?" The sharing allowing the community's ideas to be incorporated into the workshop discussion and ultimately the CF poster. The CF poster answered the question, "What does being a representative mean to CF members?" Posters were created in both English and Xhosa.

Documentation: Meetings were held in Xhosa. Monde Ntshudu facilitated the workshops. Luyanda Nkayi translated the Xhosa to English during meetings so that the researcher could take notes as the meetings were occurring. After meetings Monde Ntshudu reviewed the researcher's notes. Mr Ntshudu also kept track of group discussion during meetings on flip chart paper. The flipchart notes were later translated into English by Mr Ntshudu. Eventually, the researcher used field notebook notes, flipchart notes, and the finished posters to document domestic water users' understandings and expectations of the KRV water management representational process. Notes were taken with specific attention given to communication, domestic water user interests, water issues, transportation, local institutions, historical context, and funding. Later notes were typed into word documents, grouped by notebook, date and issue. The researcher stored the finished posters as PowerPoint documents.

Subsection 2: Validation Measures

The researcher validated data in three ways. First data was continuously reviewed between February 14th and December 14th, 2005 by the research team. Second, data and conclusions were reviewed by participants. Third, data was triangulated between data collection methods and data sources. These measures add redundancy which increases validity.

Check 1: Peer researcher reviews

The research team gave time at every research team meeting for new data to be shared between researchers. Meetings were held every other week from June through November and irregularly outside of this period. The team held over 20 meetings in total. During meetings team members were able to comment on one another's data findings and conclusions while comparing and checking their own project notes. When notes taken by different researchers were congruent the team used the information to plan future stakeholder involvement. When data collected by different researchers didn't match the issue was investigated further at the next stakeholder engagement. In this way, ten peer researchers routinely checked the research data collected for *this* study.

Check 2: Stakeholder reviews

Study participants reviewed data to increase reliability and reduce researcher bias. Pre-existing meetings gave multiple opportunities to engage with key stakeholders within

the CF and WUA. The meetings used for stakeholder review opportunities occurred between February and December, 2005. In this way, the researcher continually reported data back to stakeholders. Feedback steps allowed stakeholders to confirm or question the researcher's conclusions. When there was disagreement about an issue the disagreement was noted. The researcher future investigated disagreements by asking questions during future stakeholder interviews and paying close attention to the issue during future observation periods. When feedback confirmed findings it was noted and greater validity was gained.

Check 3: Triangulation

Triangulation is the process of using multiple methods and/or data sources to study the same phenomenon. By using multiple methods and/or sources the weaknesses in any one method or source is compensated for by the strengths of other methods or sources.[74] For this study, triangulation was used in two ways.

First, the researcher used six data collection methods to gather evidence. When the data from various methods confirmed each other, conclusions were made clearer by the converging evidence. When methods produced conflicting information or unique information the issues were reported back to the research team and stakeholders during meetings. Discussions fallowing these report-backs were noted and included in research analysis.

[74] (Yin).

On a second level of triangulation, data was gathered from over a hundred individual people (sources). The researcher compared the data collected from each source. The inclusion of a large number of individuals allowed a degree of bias to be removed. In this way, emerging issues were verified by repetition. If an issue wasn't repeated by numerous sources but appeared important it was brought up at WUA, CF, and research team meetings for further discussion. The researcher took notes at these discussions and included the notes in the research analysis.

Subsection 3: Data Coding and Analysis

The researcher coded and analyzed data in accordance with coding and analysis procedures created by researchers Auerbach and Silverstein presented in, Qualitative Date, An Introduction To Coding and Analysis. The procedure follows five steps: select *relevant text* from a data set, identify *repeating ideas* from the *relevant text*, identify *reoccurring themes* from *repeating ideas*, create *theoretical concepts* from themes, and creating a *theoretical narrative* from the *theoretical concepts*.

TABLE 3. Auerbach and Silverstein's coding steps with project timeline, 2005-2006.

October-December	October-March	March-April	April	April-July
Select relevant text	Identify repeating ideas	Identify reoccurring themes	Create theoretical concepts	Create theoretical narrative

Step 1:

First *relevant text* is selected. To perform this step all raw data is read through several times to gain familiarity with the information. Next, keeping in mind the research purpose and questions, *relevant text* is selected from the original data set. *Relevant texts* are any "passages of transcript that express a distinct idea related to your research concerns."[75] In accordance with these guidelines, the researcher selected *relevant text*. Then *relevant text* was grouped by data collection method into folders on a computer. The researcher created a separate folder of *relevant text* for each of the six data collection methods. Every piece of *relevant text* was given a heading which allows the text to be traced back to the original notes. For example, the heading (J5, 50) indicates that the connecting text is from field notebook five, page 50.

Step 2:

Second, the researcher identified *repeating ideas*. A repeating idea is an idea expressed in relevant text by two or more sources.[76] To begin, the researcher analyzed data from each data collection method separately. The researcher then created a new folder inside each of the data collection method folders and labeled the folder *repeating ideas*. Second, the first piece of relevant text from a collection method was highlighted, copied into a word document and put in the collection method's new *repeating ideas* folder. The word document was then given a title related to the subject of the relevant text. For example, text concerning prayer at CF meetings would be titled "religion at CF meetings." Third, the body of relevant text from the particular collection method was scanned for text with the same subject as the first piece of text. For the religion

[75] (Auerbach & Silverstein).
[76] (Auerback & Silverstein).

document example, all other text in that particular data collection method folder relating to religion would be identified. When text with the same subject was found the relating text was copied and pasted into the word document along with the first piece of text. Once the researcher had copied all text related to the first subject (religion) into one word document another word document was opened within the *repeating ideas* folder on a new subject (for example, gender) and the process was repeated.

After *repeating ideas* were identified within each data collection method separately, *repeating idea*s folders were combined from all data collection methods into one main *repeating ideas* folder. The more collection methods a repeating idea is supported by the more validity the idea is considered to have. However, *Repeating ideas* that weren't supported by multiple data collection methods were, noted as having less support but, still kept.

From this second analysis step the researcher identified 80 *repeating ideas*. For transparency, repeating ideas can be traced back to their *relevant text* folder and *relevant text* folders can be traced back to the original text.

Step 3:

Third, the researcher worked the 80 *repeating ideas* into *common themes*. A *common theme* is an implicit idea or topic that a group of repeating ideas have in common.[77] The researcher performed this step in the same way step two was conducted with one change. *Repeating ideas* were no longer examined one data collection method at a time.

[77] (Auerbach and Silverstein).

First, the researcher created a *common themes* folder. Second, the first *repeating idea* was highlighted, copied, and pasted in the folder within a new word document. Third, the *repeating ideas* list was scanned and any *repeating idea* similar to the first was combined within the word document. Once all *repeating ideas* related to the first were combined with the first a new word document was created and a new group of *repeating ideas* was formed around a second *common theme*. The researcher continued this process until all *repeating ideas* had been grouped into *common themes*. The researcher created 22 *common themes* from the 80 *repeating ideas*.

Step 4:

Next, the researcher formed the 22 *common themes* into *theoretic constructs*. "A *theoretical construct* is an abstract concept that organizes a group of themes by fitting them into a *theoretical framework.*"[78] This step was performed in the same way as step two and three with one additional element. While grouping similar issues during step four, the researcher used ideas from the literature review as guides. For example, literature on public participation within research management suggests that barriers to public participation in natural resource management encompass much more then issues seen during meetings alone (review of the related literature chapter). In this way, the research literature helped to evaluate what the *common themes* were saying in relation to what has been observed by other researchers.

To begin, the researcher created a new folder called *theoretical constructs*. The first theme was highlighted and moved to the new folder. *Common themes* relating to the

[78] (Auerbach and Silverstein).

first were combined keeping in mind issues from the literature review. Once all similar themes were combined, the researcher gave the group a name according to the *common themes'* core issue. Next, a new *common theme* unrelated to the first was highlighted and moved to the *theoretic constructs* folder. The process was repeated until all *common themes* were represented within a *theoretical construct*.

At the end of step four, the researcher had created seven *theoretical constructs* from the 22 *common themes*. For transparence, each *theoretical construct* can be traced back to its *common themes* and each *common theme* can be traced back to its *repeating ideas*.

Step 5:

Last, the researcher built a *theoretical narrative* using the six *theoretical constructs*. To perform step five *theoretical constructs* are combined to answer the original research question.[79] Using Auerbach and Silverstein's method, the research question is answered one theoretical construct at a time, like a story.

Subsection 4: Transparency and Ethical Protocols

Transparency

Research participants were made aware of the research purpose and goals during their first interaction with the study. At meetings, participants were informed of who was doing research, who had access to the data, and what the data was going to be used for. Interview participants received written documentation in English or Xhosa of the

[79] (Auerbach and Silverstein).

research purpose and researcher contact details. At several WUA and CF meetings the researcher shared preliminary findings with research participants. These interactions allowing participants to learn from the study and respond to initial findings. Ultimately, research data was published for the Department of Water Affairs and Forestry which allows anyone free access to research findings in both English and Xhosa.

Transparency for readers was assured by maintaining a chain of evidence between research conclusions and original field data. The researcher assured this connection by including headings on all relevant text. The headings allow any quoted data or any text in any analysis folder to be traced to its original notes. Furthermore, original notes indicated the date, collection method used, and the data source.

The researcher used equipment to record information in audio and video when equipment was available and permission was given by participants. The researcher has stored these records. They are available to any interested party.

Ethical protocol

Ethics were important during every stage of this project's planning, data collection, analysis, and writing. Ethics took form in many ways. First, limiting bias is an ethical issue. By using multiple data collection methods and sources the researcher incorporated ethical responsibility in the project planning phase. A second concern of the researcher was research purpose. Requesting significant amount of time from participants' during data collection stages created the need for designing a research

question which addressed participants' needs as well as research needs. Looking at domestic water users' representation within local water management institutions brought participants' needs into the project. In this way, the researcher was able to give back to participants. Third, consent forms were used to document participants' consent and educate participants of their rights.[80]

Subsection 5: Research Weaknesses

There are weaknesses within the study which affect results. Research bias issues include doing research in a country outside of the researcher's American social, environmental, and economic contexts, as well as language, race, gender, age, sample size, analysis limitations, the researcher's role in process planning, and time issues.

Researching in a different social, environmental, and economic context

The social, environmental, and economic context of South Africa is different from those of the United States of America. The researcher drew conclusions through the lens of the contexts he knew. Because the researcher's context and the participants' context were different research conclusions from this study will potentially be bias. Peer researcher review and stakeholder review of conclusions were steps taken to overcome some of the bias created by the issue of context differences.

Language

[80] (Appendix 2).

There are three main languages spoken in the Kat River Valley Afrikaans, English, and Xhosa. Many of the research participants speak Xhosa and posses limited comprehension of English. Translation was necessary at all meetings and many interviews. The researcher was concerned with the accuracy of translation. In addition, some water management words have no Xhosa translation. Without equivalent words between languages ideas and issues can easily be translated incorrectly.

Second, in Xhosa it is rude to tell a person with higher authority that they haven't been understood. Saying "I didn't understand you" is considered rude because Xhosa is an oral language. If someone can't be understood it suggests that they are not intelligent enough to competently express themselves. Because of this cultural language issue many research participants say "yes, we understand" when they don't understand. This issue is impossible to eliminate. However, in attempts to reduce this source of bias the researcher used workshops, discussions, peer researcher reviews, and participant reviews to collect data. In addition, the researcher frequently checked translation during meetings and discussion group sessions by asking bilingual participants if they felt the translator was accurately translating conversation dialog.

Race

South Africa has seen large amounts of racial discrimination in resent history. Dutch and British settlers whom the researcher looks similar to and shares ancestry with were the source of this past racial discrimination. Therefore, the color of the researcher's skin, the country he was born in, and the researcher's race are all sources of bias. Trust

is the underlying factor within race bias. Participants must understand and trust that research is being conducted ethically and for the good of participants regardless of race. Several actions were taken to reduce the potential race bias. First, trust was built. Research was done with a team of Rhodes University researchers who have worked and built trust with the people of the KRV for over ten years. Second, researchers from the research team are from all different backgrounds: Xhosa, Zulu, Afrikaans, Dutch, American, British, and French. The people of the KRV interact with each member of the research team differently, but collectively the team can help break down racial biases by peer reviewing each others' data.

Gender and Age

There are significant gender roles present in the KRV. In particular, the Xhosa culture has maintained a strong degree of gender difference. The culture is patriarchal. Women are often not allowed to speak during meetings or while men are present. The Xhosa culture has also kept a high regard for elders and age level. If you are younger or older then someone else it is considered significant. Age affects who is allowed to speak first, who is listened to, and who leads a group. Although, gender divides and the significance of age are being reduced they are still an important part of Xhosa reality. The neutrality the researcher tried to maintain was effected by the fact that he was male and 24 years old. To limit bias participant reviews and peer researcher reviews were incorporated into the research project.

Sample size

Everyone from the WUA and CF was involved in the research project through the data collection phase. Furthermore, most participants were involved in data review. However, within the study there was limited contact with rural village domestic water users who weren't a part of the Catchment Forum or Water User Association. More communication with external domestic water users would have made conclusions more valid. Time restraints and a limited budget were factors that influenced the study's scope.

Working with domestic water users who were more involved in water management institutions could have lowered the researcher's ability to pick up on basic involvement barriers. For example, it was determined that the greater the distance from the Kat River a community lived the less the community members tended to be involved. This issue wasn't identified until late in the research because most of the people involved in the study lived within a mile of the river. There may have been other issues similar to this one that were never identified.

Analysis weak point

The researcher's data analysis focuses on identifying common ideas from raw research data. Common ideas were grouped into trends and answers to the research question were developed. Although the transparency of the analysis allows anyone to trace themes back to their source, when answering research questions themes are presented without identifying which groups of people were a part of their discovery. What this means is that an idea like "CF funding problems" could be supported by data collected

from domestic water users in only two or three villages without supporting evidence from other villages or stakeholder groups. In this way, some representational issues presented in the results section have broader support then others. It is possible to check how supported each conclusion is but it is not transparent or easily accessible to the reader. Because the analysis doesn't strongly focus on this issue-source relationship conclusions may have biased results.

To limit this analysis bias peer review and stakeholder reviews were used. This measure means that although a particular trend may have been discovered with only a small group of participants, the trend has been discussed and given support from a broad range of participants.

Role in Process Planning

It is not clear what extent the researcher's role in process planning and process facilitation affected results. Two issues that come up in many natural resource management participatory processes in the literature review were trust and facilitation. In the KRV these two issues never came up. Many participants said over the course of the study that trust is very high between the members of the WUA and between the process planners/facilitators and the WUA. However, the researcher took part in planning for the water management participatory process as well as the facilitation. The researcher's role as planner/facilitator could have prevented him from seeing trust and facilitation issues.

Time

Time impacts the validity of the study in many ways. With more time the researcher could have established more trust, more participants could have been involved, and more familiarity with the local context could have been gained. Eleven months allowed many issues of bias to be addressed. However, eleven months is not a lot of time to study barriers that might inhibit domestic water user's participation within a water management process.

Peer research reviews were used to decrease this bias. Several members of the research team have worked in the Kat River Valley for over five years. These team members' longer experience in the KRV would have given them more detailed knowledge of the study area and aid in their peer review of *this* study's findings. Both peer review and the longevity of the research team's contact with the people of the KRV help alleviate the bias of time.

CHAPTER FOUR: RESULTS

The research goal for this paper is to "understand what barriers inhibit previously disadvantaged domestic water users' participation within the Kat River Valley Water User Association." The research findings are described in this chapter.

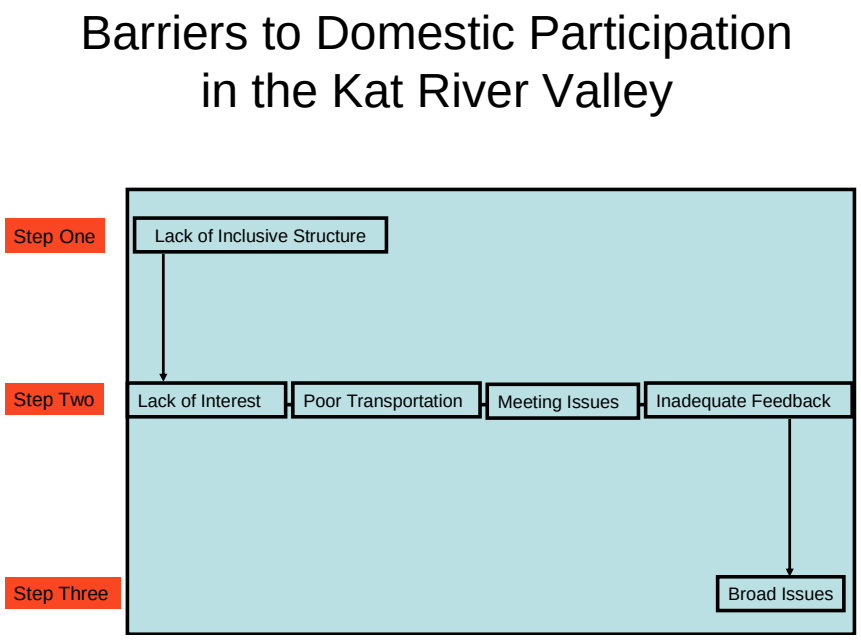
The researcher coded and analyzed data in this chapter using the Auerbach and Silverstein method.[81] In addition, research findings are presented here in a theoretical narrative following the outline provided by Auerbach and Silverstein.[82] The narrative has six parts or *theoretical concepts*. Together the six *theoretical concepts* describe the barriers that affect previously disadvantaged domestic water users' participation within the Kat River Valley WUA uncovered by the research data. The six concepts can be seen in Table 1.

Findings in the theoretical narrative are supported by research data and are referenced in one of two ways. Findings are referenced either 1) directly from their individual data source or 2) by referencing the specific body of supporting data from which the finding was understood. When referencing a specific body of supporting data the researcher has used the *theoretical concept*, *reoccurring theme*, or *repeating idea* heading as the reference. For example, when the researcher is referencing a specific *repeating idea* the

[81] (Table 1).
[82](Auerbach and Silverstein).

idea is quoted by use the specific *repeating idea* heading such as, “representatives are not bringing community issues to meetings.” This referencing style follows the Auerbach and Silverstein’s framework. When referenced, *theoretical concepts* are put in brackets and bolded: (LACK OF INTEREST), *reoccurring themes* are put in brackets and italicized: (*CF structure*), and *repeating ideas* are put in quotations: “representatives are not bringing community issues to meetings.”

TABLE 4: Barriers to Domestic Participation in the Kat River Valley



Findings Overview

The *theoretical concepts* that emerged from the data analysis show that within the KRV water management participatory process there are six main areas where barriers can occur. The six main areas can be viewed as three distinctive stages within the participatory process. Stage one includes barriers that can occur before a participatory

process has begun. Stage two represents barriers that can occur immediately before, during, and after meetings. Stage three includes broad barriers that impact all of the participatory process.

In brief, data shows that for public participation to work in the KRV inclusive institutional structures must exist (INCLUSIVE STRUCTURE). The public must be interested (LACK OF INTEREST). Pre-meeting (POOR TRANSPORTATION) and meeting barriers (MEETING ISSUES) must be dealt with. Dependable feedback must be given (INADEQUATE FEEDBACK). And, broad barriers (BROAD ISSUES) must be addressed.

The structure of this chapter follows the six theoretical concepts:

I Lack of Inclusive Structure

II Lack of Interest

III Poor Transportation

IV Meeting Issues

V Inadequate Feedback

VI Broad Issues

The *theoretical narrative* is linear showing barriers the have affected public participation from the beginning of the Kat River Valley WUA process in 2003 to the end of 2005. Although the narrative is written here in a linear progression it is important to remember that the Kat River Valley participatory process was cyclical. Often barriers were seen and understood on multiple occasions as the researcher and organizers of the public participation process tried to identify, understand, and address problems.

Table five, found below, shows how data was coded and analyzed to reach the conclusions that are presented in this chapter.

TABLE 5. Data Analysis Using Auerbach and Silverstein's Coding and Analysis Methods

Field data	Repeating Ideas (70)	Reoccurring Themes (21)	Theoretical Concepts (6)	Theoretical Narrative
	Shaky structure of CF	CF Structure	(I) Inclusive Structure	Findings and Discussion
	Structure of WUA is fairly inclusive Traditional leaders participation don't occur	WUA Structure		
	Connection between CF-domestics is adequate Connection between CF-domestics could be better	Link CF-domestics		
	CF-WUA partnership could be better CF-WUA partnership has potential to connect domestics-WUA	Link WUA-CF		
	Municipality-WUA link is inadequate for domestics Municipality is meant to provide WUA-domestic link Municipality has low capacity Domestics-WUA direct link could be good Domestics-WUA direct link is bad	Link WUA-Domestics		
	There is some interest from Domestics in the CF Interest Domestics-WUA could be improved Domestics' interest in the CF is still not high Interest Domestics-WUA is not strong	Interest	(II) Lack of Interest	
	Purpose of CF is not clear to all Purpose of WUA is not clear to all	Purpose		
	Low recognition of CF hurts the institution Not all players recognize the authority of the WUA	Low Recognition		
	Domestic issues and needs	Issues and Needs		
	Transport for Domestics-CF to meetings positives Transport for Domestics-CF to meetings negatives Transport for Domestics-WUA to meetings positives Transport for Domestics-WUA to meetings negatives	Transportation issues	(III) Poor Transportation	
	Multiple languages Languages affect representatives Language, affects on meetings Written material and language	Language Affects Involvement	(IV) Meeting Issue	
	Religion at CF meetings Religion at WUA meetings	Religion		
	Historical and present gender roles The role gender plays at WUA meetings The role gender plays at CF meetings Gender issues are affected positively by facilitation	Gender Inequality		
	Spoken translation is helping Translation is needed for all written material	Translation		

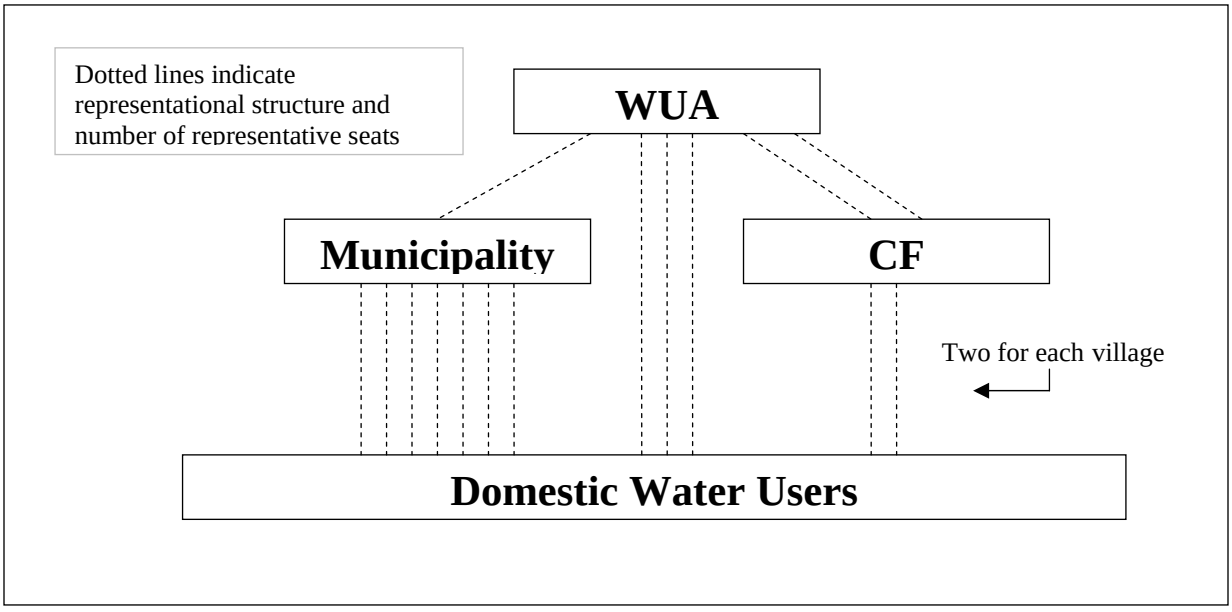
TABLE 5 (Continued). Data Analysis Using Auerbach and Silverstein's Coding and Analysis Methods

Field data	Repeating Ideas (70)	Reoccurring Themes (21)	Theoretical Concepts (6)	Theoretical Narrative
	Communication with domestics after WUA meetings is limited	Inadequate Feedback	(V) Inadequate Feedback	Findings and Discussion
	Communication with the CF after WUA meetings is inconsistent			
	Communication with domestics after CF meetings is limited			
	Ideas for fixing low feedback issues			
	Schedule conflicts are a concern	The Limitations of Time	(VI) Broad Issues	
	Meetings are a good length and the number is appropriate			
	Communication and invitations for feedback meetings	Understanding of Representation		
	Unclear community role			
	The communities feel feedback meetings are needed			
	Lack of clarity about who representatives represent			
	Unclear meeting attendance expectations			
	Some representatives feel no feedback is needed			
	Representatives not bring community issues to meetings			
	Some feel representatives don't need to be elected			
	Most feel representative need to be elected			
	Lack of unified understanding of representation			
	Capacity of representatives	Capacity Issues		
	Capacity of the CF			
	Capacity of domestic water users			
	Low capacity of the WUA			
	Lack of clarity, purpose of FC	Lack of Clarity		
	Lack of clarity, purpose of WUA			
	Funding for CF negatives	Limited Funding		
	Funding for CF positives and opportunities			
	Funding for WUA negatives			
	Funding for WUA positives and opportunities			
	Multiple forms of communication and quality	Communication		
	Literacy			
	Ideas for improving communication			
	Healthy communication at WUA meetings			
	Under-developed communication at CF meetings			
	Broken communication with and within the municipality			
	Lines of communication exist outside of meetings			

I. Lack of Inclusive Structure

The researcher found that the current institutional structures in the KRV create problems for domestic water users.[83] Data shows that the structure issue is two dimensional. The barrier is affected by the structure of all institutions involved[84] as well as the institutional partnerships.[85] The table below shows the representational structure found in the KRV.[86]

TABLE 6: Representational Pathways between the WUA and Domestic Water Users



[83] (INCLUSIVE STRUCTURE).
[84] (*CF structure, WUA structure*).
[85] (*connection WUA-CF, connection WUA-domestic users*).
[86] (Table 3).

Participation can be effected both positively and negatively depending on how institutions are structured[87] and the quality of partnerships between institutions.[88]

Water User Association Institutional Structure

Institutions often have a role in making the rules that they have to follow. For example, determining who can vote or be a member is often included in an institution's constitution, which is created and voted on by the members of the institution. These rules can impact how easy or difficult it is to be a part of a given institution. In this way, the structure of the WUA plays a role in domestic water users' involvement in the organization.

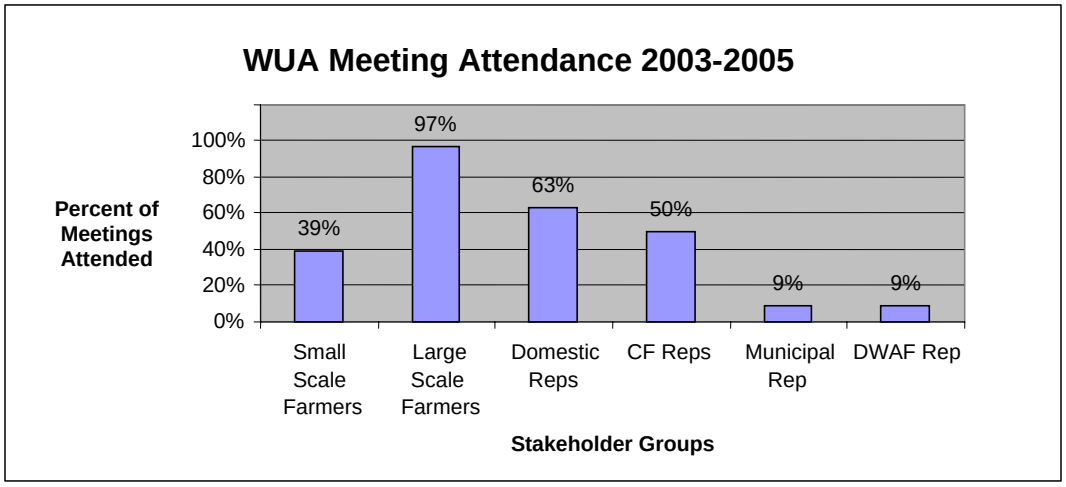
The WUA was created in 2000. At this time a constitution was formed and voted on. The WUA's constitution adopted strict standards for public participation required by the NWA. The NWA states that, "representation within the institution must reflect the demographics of the catchment that it serves."[89] This stipulation required the WUA to create seats for domestic water users.[90] Therefore, based on the NWA and the approved WUA constitution, previously disadvantaged domestic water users have three seats at

[87] (*WUA structure, CF structure*).
[88] (*connection WUA-domestics, connection WUA-CF, connection CF-domestics*).
[89] (Stephen Mullineux, informal interview 2005).
[90] (*WUA structure*).

WUA meetings.[91] All eleven elected seats on the WUA have two year term limits.[92] However, there is no clear protocol for publicizing elections. Representatives are often re-elected.[93]

Interestingly, domestic water users are also represented on the WUA in other ways. They are represented through the CF which has two seats and the municipality who has one seat.[94] Unfortunately, domestic water users are represented inconsistently at WUA meetings by their different representatives: CF, Nkonkobe municipality, and domestic water user representatives. This inconsistency can be seen in attendance records. Representatives' attendance is shown in Table 3.

TABLE 7: Stakeholder Group Attendance at WUA meetings 2003-2005.



[91] (NWA and the WUA constitution).
[92] (WUA constitution).
[93] (WUA constitution).
[94] (*WUA structure*).

Water User Association Domestic Representative Seats

The WUA has three seats filled directly by domestic water users.[95] The community members currently sitting in these seats were elected when the WUA was formed in 2000.[96] However, problems exist with the current arrangement. There is no formal mechanism for these representatives to communicate or interact with other domestic water users and there is no protocol suggesting what is expected. It is un-clear what input, if any, these representatives receive from their constituents.

Catchment Forum Institutional Structure

The CF was created in 2000. Currently the CF has no constitution or mission statement. Which means the CF is far less formal then the WUA.[97] There are ongoing plans to create both a constitution and a mission statement but so far neither has successfully been carried out due to funding limitations.[98] In the absence of any formal structure, informal structural arrangements have been followed since 2000.

At first, less then twenty villages had representatives and village size was used to determine the number of representatives.[99] Seymour, one of the largest communities, at one time had six formal representatives. As time went on the CF decided that they didn't

[95] (*WUA constitution*).
[96] (*CF structure*).
[97] (*CF structure*).
[98] (*CF structure*) "Funding for CF negatives."
[99] (*CF structure*).

have enough money to transport all their representatives to meetings so each village was limited to two seats.[100]

In recent years the number of villages the CF represents has grown. During the eleven month study period, representatives from 23 different rural communities attended CF meetings.[101] Approximately two-thirds of the rural communities have representatives connecting them to the CF.

Problems have arisen within the CF. Because there is no constitution, there is no formal election process or defined term limit. Some representatives have remained in their position for five years.[102] Other communities have planned and held their own elections. Some community representatives have moved away and not been replaced. For example, the representatives from both the White and Platform communities have left since being elected and the communities went for over a year with no one going to CF meetings on their behalf.[103] The lack of formal guidance for an election protocol means that now the CF has a mixture of members from different communities. Some communities have their original members, others with more recently elected representatives, some with no one representing them at CF meetings, and others who have volunteers filling seats that have been vacated without re-election.[104]

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[100] (*CF structure*).
[101] (Appendix 7).
[102] (*CF structure*).
[103] (*CF structure*).
[104] (*CF structure*).

In addition, the researcher found that in 2005 the CF started including small scale farmer representatives at meetings. These attendees were given voting seats.[105] Small scale farmers are the only members of the CF whose constituents aren't domestic water users.[106]

Traditional leaders, who historically would have represented communities, were intentionally left out of the CF.[107] Prominent CF members shared their feelings about why traditional leaders are not included. Mava Mgwali said, "The traditional leaders were part of the old apartheid government; they are corrupt and would bring this corruption and politics to the CF." CF chairman, Luyanda Nkayi said, "Traditional leaders have been left out because they don't have the time to come to our meetings. First the CF must build itself and address serious issues then the traditional leaders such as the queen will be invited."

Recognizing the need for greater formality, the CF is working with a not for profit organization (NGO) called Spiral Trust.[108] The NGO is helping the CF find funding to help create a constitution and mission statement. These documents will help the CF.

It is encouraging that both the CF and the WUA have inclusive structures for domestic water users who want to get involved. Neither structure presents significant barriers to participation. Although, small issues do exist such as CF representatives on the WUA not

[105] (*CF structure*).
[106] (*CF structure*).
[107] (*CF structure*).
[108] (*CF structure*).

having voting rights on the WUA. This issue has been recognized and steps are being taken to rectify the barrier.

Catchment Form Partnership

The partnership that has been forged between the CF and the WUA has potential for helping both institutions. There is potential for the CF to help the WUA develop stronger communication with the domestic water users. The CF could benefit by having more recognition. A good indication is that many people in the Kat River Valley feel that the CF currently does help the WUA connect with domestic water users. The WUA chairman said, "On the WUA, the CF represents all domestic water users; if the CF wasn't there the WUA would have no place to discuss non-business natured issues."[109] The chairman of the CF added, "There is strong communication between the CF and the WUA."[110] Data indicates that the partnership that exists is weak but growing. If the partnership can be strengthened the CF's significant rural community membership base could help the WUA more fully reach out to domestic water users.

The CF has two people acting as representatives for the CF on the WUA. These representatives attend some meetings but currently have no vote.[111] There is talk of changing the WUA constitution to give the CF representatives voting seats.[112] The

[109] (Lew Roberts, formal interview 2005).
[110] (Luyanda Nkayi, informal interview 2005).
[111] (WUA constitution).
[112] (*WUA-CF connection*).

change is supported by Lew Roberts the WUA chairman.[113] This constitutional change would be a positive step for the partnership's development.

Nkonkobe Municipality partnership

The partnership between the Nkonkobe Municipality and the WUA is poor. Many stakeholders on the WUA feel the municipal government's role on the WUA is in part to represent domestic water users.[114] However, most WUA members feel that this partnership is not adequately representing domestic water users.[115] One of the partnership's failings is that the municipal representative has only attended 9% of the WUA meetings held in the last 2 years.[116] Data indicates that at this time, the institutional arrangement between the WUA and the Nkonkobe municipality is not providing a helpful connection between domestic water users and the WUA.[117] The municipality has been inconsistent with who it sends to meetings. The role has been split up between two individuals and neither person feels that attending WUA meetings should be their role.[118]

The two individuals who are sent to WUA meetings to represent the municipality don't communicate with one another so knowledge gained and plans contributed to by one municipal representative isn't shared with the other representative or the municipal leaders.[119] In a process where each meeting builds on what was learned and decided on in previous meetings this inconsistency is a major issue.

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[113] (Lew Roberts, informal interview 2005).
[114] "Municipality is meant to provide WUA-domestic link."
[115] "Municipality-WUA link is inadequate for domestics and municipality's low capacity."
[116] (Table 3).
[117] (*Connection WUA-Domestics*).
[118] "Municipality-WUA link is inadequate for domestics and municipality's low capacity."
[119] "Municipality-WUA link is inadequate for domestics and municipality's low capacity."

Potentially, there are three ways domestic water users can be involved with the WUA: through the municipality, through the CF, or through the three WUA domestic water user representatives. It is not clear whether having multiple pathways between domestic water users and the WUA is helpful or harmful. It is possible that the multiple connections could confuse potential participants who may not know which path to take when they have an issue to bring forward.

Out of all three pathways available for domestic water users, the CF appears to offer the strongest participation channel for domestic water users to access the WUA. This is largely because of the CF's broad local community base. Therefore, if the WUA desires two-way communication with and support from domestic water users, data indicates the CF offers the greatest potential for achieving those goals.

II. Lack of Interest

Domestic water users' lack of interest in the WUA was found to be significant.[120] The data shows that there are four variables involved in domestic water user interest in the

[120] (LACK OF INTEREST).

WUA: 1) domestic needs,[121] 2) institutional purpose,[122] 3) domestic water user perception of links between needs and purpose,[123] and 4) institutional recognition.[124]

Interest is positively influenced when the needs and issues of domestic water users are addressed at WUA meetings or there is a perception that they are. In addition, interest in the WUA is influenced by how much recognition the WUA receives from other powerful institutions such as the Department of Water Affairs and Forestry. The more recognition an institution receives the more people will become interested.

Domestic Needs

Domestic Water Users' Non-Water Related Needs

The researcher found, domestic water users have several common needs and interests. In the KRV, domestic water users are poor.[125] Over 75% of residents have no formal employment. Finding jobs is a very big issue for the domestic water users. Therefore, any institution that can create jobs will gain the interest of locals.[126] The connection between job creation and local interest in an institution is clear.[127]

Domestic Water User' Water Related Needs

[121] (*Issues and needs*).
[122] (*Purpose*).
[123] (*Interest*).
[124] (*Low recognition).*
[125] (*Issues and needs*).
[126] (*Issues and needs*).
[127] (*Issues and needs*).

When the KRV dam was created several generations ago it flooded hundreds of Xhosa tombs up river from the dam location.[128] The dam created other problems. After the dam was created a Xhosa child was killed when river levels drastically fluctuated following a dam release which had not been communicated to the Xhosa communities.[129] These problems are issues domestic water users are aware of. In addition, about half of the communities in the KRV get their drinking water directly from the river.[130] The river is also the main source of water for clothes washing, family gardens, and livestock. Water quality and quantity is important to insure these water needs can be met.

Institutional Purpose

The WUA's primary purpose is as a water allocation authority.[131] To do this job the WUA manages water allocation fees and requests dam releases from the Department of Water Affairs and Forestry for water users. Broad goals include NWA mandates requiring the WUA to help rural poor communities build capacity and help empower the previously disadvantaged.

Links Between Purpose and Needs

[128] (*Issues and needs*).
[129] *(Issues and needs).*
[130] (*Issues and needs*).
[131] (*Purpose of WUA*).

Establishing the necessary links between purpose and needs is affected by two things: 1) whether in reality the WUA purpose overlaps with domestic water users' needs and 2) domestic water user perception of whether there is overlap.[132]

Overlap Between Purpose and Needs

Data shows most domestic water users' needs are addressed by the WUA's, at least indirectly. For example, water quality is indirectly connected to dam release schedules. Several times a year farmers request dam releases to flush the river of poor quality stagnant water. Drinking water quality fluctuates with these flow changes. Getting people to understand and become aware of how they are impacted by seemingly irrelevant decisions, like dam releases for irrigation down river, will be critical.[133]

However, in the KRV job creation is currently not addressed by the WUA.[134] The WUA may want to create a plan linking their actions to job creation if more domestic water user interest is desired.

Perception

Domestic water users who attend WUA meetings do not have a clear vision of what the WUA can do for them.[135] For example, most representatives don't see the connection between dam management and drinking water quality.[136] This is a problem. The problem has been created because the water management process has not made awareness

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[132] (*Interest*).
[133] (*Interest*).
[134] (*Purpose of WUA*).
[135] (*Purpose of WUA*).
[136] (*Interest*).

building of links between the WUA and domestic water user needs a priority. Therefore, even though WUA purpose and domestic water user needs overlap, the overlap hasn't created strong interest.[137] Furthermore, interest is low because water quantity isn't currently seen as a major issue by domestic water users. Lew Roberts, the chairman of the WUA said, "Until the well runs dry no one is interested in water." Data suggest interest will increase if water quality gets worse or water shortages occur.[138]

Recognition

Domestic water users in the KRV have greater interest in participating in processes that have recognition.[139] Recognition of the WUA and the CF by Department of Water Affairs and Forestry, the Minister of Water, the Municipality, Rhodes University and other powerful local players affects participation.[140] Data indicated that the WUA receives some recognition from all of the powerful players but hasn't been able to translate that recognition into getting representatives from these power players to WUA meetings. WUA members see that there are no powerful players at meetings.

Recognition of the CF is worse. Currently, the only major player in the KRV who recognizes the CF is Rhodes University and that relationship is largely in place because Rhodes helped to create the CF.

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[137] (LACK OF INTEREST).
[138] (*Issues and needs*).
[139] (*Recognition*).
[140] (*Recognition*).

The representatives from DWAF and the Nkonkobe municipality only attended 9% of WUA meetings in 2005.[141] The researcher found that powerful players' lack of interest affects domestic water user interest.

If greater recognition can be achieved it could open doors to funding by increasing funding access.[142] Mr. Gwintsa, the municipal director said he had never heard of the CF and therefore has not put them in his integrated development plan, a yearly budget which provides funding for municipal wide efforts.[143]

Recognition is also given to groups with money. If groups have money or are perceived to have money, people are more interested in participating since money is associated with influence.[144] Mr Kwindla the chairman of the Forestry Forum in the KRV holds meetings at the expensive Katberg hotel for this reason. Mr. Kwindla's opinion was that people associate where the meeting is held with importance.[145] His meetings have high attendance by local constituents and powerful regional players, at a cost of 12,000 SA Rand (~1,800 U.S. dollars).

III. Poor Transportation

[141] (Table 3).
[142] (*Recognition* and *funding*).
[143] (*Recognition*).
[144] (Recognition).
[145] (Vuyani Kwindla, informal interview 2005).

Transportation

Transportation is a significant barrier in the KRV.[146] This barrier makes meeting attendance difficult.[147] The majority of domestic water users in the KRV have no car. Because transportation is an issue, meeting location is very important. The KRV is large enough that no single meeting location provides access for everyone who may be walking.

The researcher found that holding meetings in particular locations favors communities in close geographical proximity to the location.[148] An example of this favoring problem can be seen by looking at the communities of Gonzana and Fairbairn. Meetings in 2005 were held in Fairbairn and Lower Blinkwater. Lower Blinkwater is less then a kilometer from Gonzana. Fairbairn is over 10 kilometers from Gonzana. Gonzana had three times the number of representatives at the Lower Blinkwater meeting as it had at the Fairbairn meetings respectively. Fairbairn representatives had the opposite attendance record. Fairbairn had three representatives at each of the meetings held in Fairbairn and only one at the Lower Blinkwater meeting. Other communities show similar attendance patterns.

Finding an answer to the transportation problem could help the problem of finding an inclusive meeting location. However, a long term transportation answer has not been found.[149] Community leader, Jerry Ntsebeza highlighted this problem, “I was notified

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[146] (POOR TRANSPORTATION).
[147] (*Lack of transportation).*
[148] (*Lack of transportation).*
[149] (*Lack of transportation*).

(about the meeting) but couldn't come because transport wasn't provided. (..) Transportation is very difficult. I would have to hitchhike (if I wanted to attend the meeting)." One of the process planners, Kate Rowntree includes, "participants must take a taxi if no ride is provided." Unfortunately, research data indicates that most participants will not use their own money to transport themselves to WUA or CF meetings.[150]

Steps were taken during 2005 to solve the transportation problem. WUA funding provided 18 passenger vans to pick up and drop off participants.[151] For other meetings the WUA tried to reimburse taxi fees incurred by participants'. Some WUA members with cars have tried car pooling with members who don't have cars.

Data shows that using eighteen passenger vans has significant positive affect on meeting attendance. All meetings with van pickup were attended by at least one domestic representative. However, funding limitations mean that the vans can't be a long term answer. Current funding for transportation is limited to a WUA formation and planning four year grant. Carpooling may also help. However, ridesharing only works for representatives that live reasonable close a WUA member who owns a car.

It was also found that transportation cost reimbursement had no significant affect on attendance.[152] Domestic representatives were absent at both WUA meetings where reimbursement was used as the transportation strategy.

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[150] (*Lack of transportation*).
[151] (*Lack of transportation).*
[152] (*Lack of transportation*).

The idea of giving domestic water users funds to arrange their own group transportation was tried in November and December of 2005. Renting a local truck was substantially cheaper then hiring a van through a formal business. Hiring a local truck and driver cost the WUA 55 U.S. dollars. For the two meetings for which local transportation was hired, attendance was strong. This transportation answer shows promise. Many locals agree. Catchment Forum chairman, Luyanda Nkayi said, "Getting people to meetings is best done with local transport."

To find answers the researcher looked at how other KRV institutions deal with transportation. It was clear that the transportation problem is faced by other community based institutions who value local community input, such as the local KRV forestry forum. Vuyani Kwindla the DWAF employee in charge of the Forestry Forum said "I use forestry trucks and employees to pick everyone up for meetings. Transportation is not a problem." Unfortunately, the WUA isn't in the same situation as Mr. Kwindla. The WUA doesn't own any trucks nor does it have any full time employees who could drive around before meetings to pick up community members. However, the Forestry Forum's example shows that it is common for institutions to pick up their participants. The need for people to have transportation provided is not just a WUA issue.[153] Ultimately, the barrier of transportation still hinders many representatives' participation in the WUA.

IV. Meeting Issues

[153] (*Lack of transportation*).

There are four barriers that can potentially affect domestic water user participation once they are at meetings. These meeting barriers are: language,[154] translation,[155] religion,[156] and gender.[157]

The Language Barrier

Language in the Kat River Valley

Of the eleven official languages in South Africa; three are spoken regularly in the KRV: Afrikaans, English, and Xhosa.[158] Not everyone speaks all three languages. Therefore, people from different language groups have difficulty understanding one another.[159] During the Apartheid the Xhosa people in the KRV were made to learn Afrikaans. After the Apartheid era, language use at schools changed. Currently, Xhosa learn English at government schools.[160] This historical change means that most Xhosa speakers can understand some English and Afrikaans. A few are fluent.

Inversely, very few English and Africaans native speakers have learned Xhosa. Farmers who have large Xhosa labor forces can be exceptions to this rule.[161] Some of the Afrikaans and English farmers on the WUA can speak Xhosa. The white farmers who

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[154] "*Multiple languages.*"
[155] "Spoken translation is helping" "translation is needed for all written material."
[156] (*Religion*).
[157] (*Gender*).
[158] "Multiple languages."
[159] "Multiple languages."
[160] (Motteux "Development" 73).
[161] "Multiple languages."

can speak Xhosa have been able to build strong relationships with Xhosa WUA members discussing mutual issues and concerns.[162]

Language and representatives

All domestic water user representatives and CF representatives on the WUA can speak English to some extent.[163] This trend suggests that not knowing English is an unspoken barrier to being elected as a WUA member.[164] There are many CF members and domestic water users who don't speak English; none have ever been WUA representatives.[165]

Language at meetings

Because English is not the native language of any domestic water user representative or CF representative the representatives are at a language disadvantage during WUA meetings.[166] A domestic water user representative named Thandiwe shared her feelings about language difficulties by saying "I can understand English but I am shy and I don't speak English very well." Data shows that Thandiwe almost never speaks at WUA meetings "language, affects on meetings." The problem is also recognized by other WUA members. Jannie DeVillers shared, "The meetings being held in English present a problem. Some people get left behind. It makes it hard to participate for people who don't speak English well." The Rhodes researcher Jane Burt also identified the problem stating, "Language is an involvement barrier. There is low communication between Xhosa and

[162] "Multiple languages."
[163] "Language affects representatives."
[164] (*CF structure)*.
[165] "Language affects representatives."
[166] (*Language issues*).

non-Xhosa speakers. This affects people's ability to understand one another and negotiate around water management."

Written material

Meeting communications, such as PowerPoint slides, are written in English and when there is time and funds they are then translated into Xhosa.[167] Often, meeting reports written for participants are only available in English.[168] This "English only" barrier prevents non-English speakers from engaging with most written material.

Translation

Process planners and participants recognized the problems language creates for participation.[169] Three main steps were taken in 2005 to solve the language barrier. An interpreter was present at all WUA meetings. An effort was made to translate computer presentations into Xhosa. Third, an attempt was made to translate meeting reports into Xhosa.[170]

Translation of writing

At times during 2005 power point presentations and meeting reports were translated from English original copies into Xhosa.[171] These activities were given positive response from

[167] "Written material and language."
[168] "Written material and language."
[169] (*Language issues*).
[170] (*Language issues*).
[171] "Translation is needed for all written material."

Xhosa speakers. Representatives said the reports helped them significantly as they used the papers to show people in their communities what is happening at meetings.[172]

Despite the translations' favorable reception by participants, funding and time limitations have ended meeting report translations.[173] Furthermore, few power point presentations are still translated.[174] Under the current WUA KRV project there is special funding and personnel dedicated to making sure the public participation process works. If finding funding and time to translate meeting reports and PowerPoint presentations is an issue now, it is likely going to get worse after the current project money runs out in 2007. Lack of translation could be a significant barrier to domestic water user involvement.

Spoken translation

All participants feel that translation between English and Xhosa is needed.[175] Translation was provided by Monde Ntsudu at all WUA meetings during 2005 "spoken translation is helping." Data from several sources show that translation is very accurate.

The translation was particularly valuable when guests came in on several occasions to help with the water allocation process. Guests' French, Italian, and American accents made their English really hard to understand for Xhosa participants.[176] Mr. Ntsudu's translation made communication between the guests and participants possible.

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[172] "Feedback WUA-CF positives."
[173] "Translation is needed for all written material."
[174] "Translation is needed for all written material."
[175] "Spoken translation is helping."
[176] "Spoken translation is helping."

Drawbacks that were brought up by participants all relate to the amount of time translation takes.[177] WUA members sit through English dialog and then through translation. Many WUA members expressed concern, speaking about how long meetings take while at the same time recognizing the necessity of having both English and Xhosa spoken at meetings.[178]

Religion

Christian prayer was observed at the open and close of every WUA and CF meeting. However, not a single respondent mentioned prayer as a concern and no observations were made indicating any negative relation between the prayers and participation.[179] Interviewees weren't asked directly about their religions affiliations or feelings about prayer at meetings. Further research in this area could be valuable.

Gender

Historical gender issue

Gender is a strong barrier for women who desire to participate in water management in the KRV.[180] The barrier has historical roots. In Xhosa tradition it is a cultural norm for women to be silent when men are present. This means that very few women speak at

[177] (*Language issues*).
[178] "Spoken translation is helping."
[179] (*Religion*).
[180] "Historical and present gender roles."

WUA meetings even if they are the elected representative.[181] The gender divide can be seen in traditional leader structures that are still largely followed. Only males can be chiefs.[182]

However, traditional structures do allow women to lead under special circumstances. Women can temporarily assume a leadership role in the absence of a qualified male. In the KRV, the former chief died before his son was of age. His wife is currently acting as chief until their son is ready.[183] An informal interview with traditional leader Queen Abegail N. Maqoma illustrates the gender situation:

> Paul – What happens when leaders pass away and their oldest son isn't ready to take over?
>
> Maqoma – My son should have taken over long ago. His father died and I took over because my son wasn't old enough to take his role at the time. Power is given to the mother because if it were given to a brother men don't want to give up their power. There would be a fight between my son and his uncle when my son was old enough. Mothers can give up power to their son more easily.
>
> Paul – Why hasn't your son taken over yet?
>
> Maqoma – The traditional house doesn't favor bachelors to be in the position. He must represent older people, sometimes saying "don't do this to your wife." If he hasn't had any experience himself (as a

[181] "Historical and present gender roles."
[182] "Historical and present gender roles."
[183] "Historical and present gender roles."

husband) he will not be able to say anything (because he won't understand the responsibilities married men have to deal with).

It is significant that women can be interim leaders. Queen Maqoma has been queen for many years. The fact that men are only considered fit to be chief once they are married is also noteworthy.

Gender statistics

Women hold seats on all major groups that the study had contact with in the KRV.[184] Women make up 30% of the community representatives on the CF, 20% of WUA members, 30% of Forestry Forum meeting participants, 33% of the African National Congress party participants in Cath Cart Vale (one of the local communities in the KRV), half of the domestic representatives on the WUA, and half of the CF representatives on the WUA.[185] These figures show that women are participating but in most cases not at equal levels as men.

Gender at WUA meetings

It is clear that people involved in the WUA, particularly the women are aware that gender inequality exists. Ester Ebi, the domestic representative on the WUA, has a sign on the wall at her home that reads, "Ladies stand up for equal rights!"[186] Miss. Ebi shared her thoughts on gender during an interview by saying, "It is hard (being a woman at the meetings). It was very hard at first but I don't feel intimidated anymore. I have been to

[184] (*Gender inequality*).
[185] "Historical and present gender roles."
[186] "Historical and present gender roles."

many workshops and learned a lot. I feel like I can speak up now and that gender isn't a big issue now."[187]

Gender at CF meetings

At CF meetings gender inequality is also a problem. Women who attend meetings often don't speak at meetings.[188] At a CF meeting one of the male leaders asked the group "why don't women participate (in our meetings by speak up at meetings)?" Later when asked about his comment the man said he himself didn't know why women didn't speak.[189] Directly asking the question to women during meetings may not help but the fact that the question was asked shows that the issue is acknowledged.

Impact of the gender barrier

The researcher found that women's access to the WUA could have significant influence on how water is managed. Jane Burt one of the lead WUA process planners, said in November 2005 that she thinks "women better represent their villages then men. Men more often pick paths and an agenda that creates the most job opportunities. Where as the women might represent community needs more fully."[190] Other data supports this idea as well. When women spoke up at meetings it was often on issues of water quality for washing and drinking. When men spoke it was more commonly to address the issue of jobs and irrigation equipment.

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[187] "The role gender plays at WUA meetings."
[188] "The role gender plays at CF meetings."
[189] "The role gender plays at CF meetings.
[190] "The role gender plays at WUA meetings."

Gender and facilitation

There are signs that purposeful facilitation techniques can and are helping to overcome gender barriers. The November CF meeting highlighted this issue. The meeting began with outside facilitators running the meeting. During this period of the meeting women and men contributed to discussion equally.[191] Later in the meeting the topic switched and facilitation was handed over to the CF leadership. At this point women's participation at the meeting declined significantly. Men led the meeting and dominated discussion.[192] Data shows that at this time CF leaders don't address gender inequality in their facilitation methods. Ultimately, without deliberate facilitation the gender barrier persists.

Trust

It is significant to note that trust was never mentioned by study participants or observed to be as an issue by the research team. The literature review found that trust is a barrier seen in many other natural resource management participation processes. The absence of any evidence to suggest a trust barrier exists, in addition to participants' willingness to be involved and openly communicate, suggests that participants trust one another and are willing to work together. This finding is very significant.

V. Inadequate Feedback

[191] "Gender issues."
[192] "Gender issues."

One expectation identified by the majority of domestic water users was that their representatives provide feedback. Other institutions that exist within communities provide feedback and therefore reinforce this expectation. Representatives are expected to go to meetings, participate at meetings, and then hold a "feedback meeting" in their community to share information gained.[193] For expectations to be met representatives must give feedback. Unfortunately, the data shows that feedback is often not given after WUA and CF meetings.[194]

The researcher found that domestic water users' expectations of process influence their interaction with and judgments of the WUA public participation process.[195] Therefore, it is important to understand what domestic water users and their representatives think quality representation looks like. This understanding can help the WUA meet domestic water users' expectations.

Feedback

Because feedback isn't being given, communities feel left out of the decision making process. To build a stronger community support base, feedback must be given to 1) domestic water users after WUA meetings; 2) to domestic water users after CF meetings; and 3) to the CF after WUA meetings. Data shows that these three feedback links have significant problems.[196]

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[193] "The communities feel feedback meetings are needed."
[194] "Feedback is not consistently being given."
[195] "Communication with domestic water users after WUA meetings is limited."
[196] "Feedback is not consistently being given."

Feedback after WUA meetings to domestic water users

Feedback after WUA meetings happens very infrequently, if at all. The domestic water user representative for the lower KRV, Jannie De Villiers, has never given feedback.[197] In an interview Mr. DeVilliers said "I don't hold formal meetings with other domestic water users. I am concerned about water quality and quantity because of my farm. These are the same needs as the domestic water users I represent. When I represent myself I am representing other domestic water users."[198]

Jannie may be representing the needs of domestic water users. However, even if he is representing the needs of his constituents, without feedback or consistent interaction it is likely that he isn't meeting the expectations of his constituents. Furthermore, because Mr DeVilliers has never held a feedback meeting, it is likely that domestic water users in his area have no idea he is their representative. If a specific issue comes up, domestic water users in the lower KRV wouldn't know that they can approach the WUA for assistance. The lack of connection between lower KRV domestic water users and their representative is a major barrier to successful public participation.

The second domestic representative on the WUA is Easter Ebi. Miss Ebi is Xhosa and lives in Lower Blinkwater. She speaks a little English and fluent Xhosa. It is not clear how successful Miss Ebi is at holding feedback meetings. However, during the research period she never brought community issues up at WUA meetings.[199] This information

[197] "Communication with domestic water users after WUA meetings is limited."
[198] (Yanni DeVilliers, informal interview 2005).
[199] "Communication with domestic water users after WUA meetings is limited."

suggests there is minimal understanding of or communication between the WUA and the community of domestic water users Miss. Ebi represents.

The third domestic representative on the WUA is Luyanda Nkayi. Luyanda lives in Belfour, one of the larger communities in the upper KRV. There is no data to suggest Mr. Nkayi has given any formal feedback, although he may give informal feedback to friends and community members within other local groups. Mr. Nkayi is a part of his local African National Congress chapter as well as local traditional leaders council (*communication*).

There are two major problems representatives face when trying to give feedback: there is no funding to help representatives fulfill their mandates[200] and there is no established protocol for giving feedback.[201] Jane Burt commented on this issue, "There is no formal protocol for representatives to follow. Representatives don't know how to fulfill their jobs." Data supports Burt, showing that representatives of all stakeholder groups do different things to try and fulfill their roles as representatives.[202]

It is a problem that there is no clear protocol. Communities and representatives who are trying to do their job are getting frustrated.[203] Ultimately, the discrepancy between expectations of domestic water users and the actions taken by representatives creates a barrier by preventing information transfer and meaningful community participation.

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[200] (*Limited funding).*
[201] "Communication with domestic water users after WUA meetings is limited."
[202] "Communication with domestic water users after WUA meetings is limited."
[203] "Lack of unified understanding of representation."

Only one WUA member routinely gives feedback to their constituents. This member is a large scale farmer who sees the farmers he represents regularly at the Katco farming coop. The coop is where middle KRV farmers do business and being the chairman of the coop, the coop provides Mr. Nohamba an easy platform for meeting with and talking to other farmers.[204] Having the coop as a platform means that Mr. Nohamba doesn't have to spend money to organize or schedule meetings with the farmers he represents. This situation allows him to avoid the problems his counterparts face.

Feedback after WUA meetings to CF

Communication exists between the CF and the WUA but data about its quality and frequency is mixed. Information discussed at WUA meetings is communicated to a number of CF representatives. Some representatives say there is strong communication.[205] The CF chairman Luyanda Nkayi said, "There is strong communication between (the WUA and CF) and representation of the CF on the WUA." Data indicated that other CF members don't hear reports from their representatives.[206]

The researcher observed on many occasions that no feedback was given to CF members even when CF meetings were held soon after WUA meetings.[207] CF facilitator, Monde Ntshudu said, "Even when people in the KRV say they are updating each other this doesn't really happen."

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[204] (Erik Nohamba, formal interview 2005).
[205] "Communication with the CF after WUA does exist."
[206] "Communication with the CF after WUA is inconsistent."
[207] "Communication with the CF after WUA is inconsistent."

Improvements are being made. Although, feedback was found to be very poor during the beginning of 2005; during the second half of 2005 CF representatives were observed giving feedback more frequently.[208] There are positive signs which show that communication is growing. These signs will need to continue if all communities are going to have a voice on the WUA.

Feedback to domestic water users about CF meetings

There are many problems with the way feedback is provided by CF members to their constituents. Some CF members feel they do not need to hold meetings.[209] In these instances no feedback is given.

Representatives who feel holding feedback meetings is part of their job have run into communication issues and very low turnout.[210] Thabeka Yeko, a Seymour representative on the CF said, "When meetings are held in Seymour people aren't coming to the meetings." This problem was also mentioned by CF members Mhleli Namba, and Mr Zongozele.[211]

Domestic Water Users' Ideas for positive change

Domestic water users have shared ideas about how to remove the barriers they see related to giving feedback. Luyanda Nkayi and Andile Ndindwa said, "Reports and handouts are

[208] "Communication with the CF after WUA is inconsistent."
[209] (*Understanding of representation*).
[210] "Communication with domestic water users after CF meetings is limited."
[211] "Communication with domestic water users after CF meetings is limited."

two things that we are (using when they are available) and can use."[212] Using newsletters, a yearly stakeholder meeting, and pamphlets to increase communication with water users were also suggested.[213] At the community poster workshop held on the 13th of September participants suggested that their representatives use other community gatherings that already occur like church gatherings or any of the community's monthly meetings to give feedback. Mr Zongozele and Nokwakho Dlani both suggested using loudspeakers to inform people about feedback meetings. One CF representative suggested holding feedback meetings only after two or three CF meetings have taken place.[214]

VI. Broad Issues

A) The Limitations of Time

Data indicates that time is a barrier to participation in two ways. First, when meetings are scheduled at a time which conflicts with people's daily commitments, there is poor attendance.[215] For example, members may not be able to make a meeting if it is held on the day government pensions are handed out in villages. Second, when meetings are scheduled too frequently or last too long, attendance is impacted.[216] For example, citrus farmers may not continue participating if a significant number of meetings are held during the busy citrus season.

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[212] (Luyanda Nkayi, formal interview 2005).
[213] "Ideas for fixing low feedback issues."
[214] "Ideas for fixing low feedback issues."
[215] (*The limitations of time*).
[216] (*The limitations of time*).

Time barrier because of schedule conflicts

Many schedule conflicts are related to job commitments. Data shows that representatives miss a significant number of meetings because they have a job they can't miss and the job takes priority.[217] No one would expect a representative to miss work for a meeting but it is an important limitation to acknowledge. Luyanda Nkayi stated, "During the picking season we can't get people to meetings from the middle Kat." The middle KRV is where most of the citrus crops are grown.

Some representatives say job schedules shouldn't be in conflict with being a representative.[218] Luyanda Nkayi and Andile Ndindwa said "To be on the CF or any other organization it doesn't mean you can't get a job. If we know things in advance then we can work our job schedules around the meetings."[219]

Meeting times can also be a schedule conflict if meetings go to long. Mava Mgwali made the comment, "Meetings can't go too long. I have to be home to take care of my sheep." Mr. Mgwali stressed that meetings must start on time.[220] It is clear that the time of day meetings are held influences representatives' participation.

[217] "Schedule conflicts are a concern."
[218] "Schedule conflicts are a concern."
[219] (Luyanda Nkayi, formal interviews 2005).
[220] "Schedule conflicts are a concern."

One suggestion made was to arrange meetings after work or on weekends when fewer people have work.[221] One of the Nkonkobe Municipality ward councilors holds his community meetings on Sundays once every three months. The councilor conveyed, "I hold them (meetings) on Sunday because more people can attend on Sundays, they aren't working."[222]

Meetings length and the number of meetings must be considered

Meeting burnout could also become an issue. Many WUA members consider the meetings necessary but say the meetings must not take too much time.[223]

WUA domestic representative Jannie DeVilliers suggests "(meetings) must not take too long and get too drawn out. It would be a waste of time and too many meetings. (…) Time is the biggest obstacle for coming to WUA meetings."[224] Although, many members of the WUA mentioned the restraint time puts on their participation, participants said that the current meetings were a good length.[225]

Meeting length is affected by several things. First, translation between English and Xhosa takes significant time. The translator at WUA meetings, Monde Ntshudu said, "Translation takes a lot of time."

[221] "Schedule conflicts are a concern."
[222] (Mr. Mini, informal interview 2005).
[223] "Meetings are a good length and the number is appropriate."
[224] (Jannie DeVilliers, informal interview 2005).
[225] "Meetings are a good length and the number is appropriate."

Secondly, meetings take a long time because some participants have never taken part in a similar decision making process.[226] Fostering new members' participation at meetings requires extra time to help new members familiarize themselves with unfamiliar subjects and issues. The extra time helps involve new members but has an adverse effect on more experienced members. On occasion, experienced members complained that meetings got boring as they waited for others to understand concepts.[227]

Fortunately, WUA members understand the needs of new members.[228] Jannie DeVillers encompassed most members' thoughts by saying, "Although time is an issue it is one we have to work with. More time is needed to create full understanding and not overwhelm people during meetings."

Even with added time, some members feel there is not enough time. Luyanda Nkayi said, "The time for discussion wasn't enough. People weren't given enough time to think and respond. This is why participation was low."

Data suggests that there is a balance that must be found between taking too much time and not enough time. In the case of the WUA there appears to be a good balance.[229] Experienced members may get occasionally bored but they have remained understanding and new members may feel overwhelmed but they are still coming and finding ways to contribute. As much as participants mentioned the limitations of time, no participant said

[226] "Low capacitation of the WUA."
[227] "Low capacitation of the WUA."
[228] "Meetings are a good length and the number is appropriate."
[229] "Meetings are a good length and the number is appropriate."

the amount of time being taken should be reduced or that it was unacceptable.[230] The absence of such a statement is significant.

B) Understanding of Representation

Problems are created when participants within a process hold different expectations of the representational system. The lack of a common "understanding of representation" affects every stage of participation.[231] Areas within a process that are affected include: institutional structure, elections, meeting attendance, feedback, and community role. It is also important to understand that participants' perceptions about the quality of representation they are receiving, regardless of merit, will influence their participation.[232]

Positively, data shows that the WUA's representational structure fits many constituents' understanding of representation.[233] Because of this common understanding, most WUA members are satisfied with the WUA's structure. However, the WUA representational structure doesn't meet all constituents' understanding of representation.[234]

Mr. Poofolo's, a municipality representative on the WUA, stated during his informal interview that a "correct" representational structure must have representation equal to the constituent population. "If I got beans, mealies (corn), and peas and stir enough, when I

[230] "Meetings are a good length and the number is appropriate."
[231] (*Understanding of representation*).
[232] "Lack of unified understanding of representation."
[233] (*Understanding of representation*).
[234] "Lack of unified understanding of representation."

scoop I can make sure I get an even sample."[235] According to Mr. Poofolo, if the rural Xhosa population makes up 75% of the KRV total population then they should have 75% of the WUA seats and vote.[236] Currently, domestic water users directly control two of the WUA's eleven seats. The two domestic seats have no vote.[237] If CF seats and the municipality seat are included then domestic water users have five of the eleven WUA seats. Neither calculation equals 75%.

Where differing understandings come from

Data indicates that differences among people's opinions and expectations about what representation is and what it looks like come from their experiencing with other representational structures.[238]

Before and during the apartheid government most group structures were top down. One interviewee shared, "During apartheid there was a top down approach (to representation). They (the government) just decided for people, this meant they wouldn't let you decide for yourself.[239] Mr. Mzukisi's statement echoes many participants' accounts of past participation in the KRV.[240] In addition to government run institutions, traditional leader structures headed by tribal chiefs were also top down in style.[241]

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[235] (Asia Poofolo, informal interview 2005).
[236] (*Understanding of representation*).
[237] (*WUA structure*).
[238] (*Understanding of representation*).
[239] (Meve Mzukisi, informal interview 2005).
[240] "Lack of unified understanding of representation."
[241] "Lack of unified understanding of representation."

Current group structures are changing from the structures of the past. Many local groups give communities a stronger voice.[242] For example, the local African National Congress chapters, that most domestic water users are members of, have a similar structure to the WUA. Data also suggest that other groups that community members are involved in have similarities to the WUA representational structure. These groups include: the Africa National Civic Society, HIV/AIDS community groups, church groups, policy forums, forestry forums, and funeral societies.[243]

Elections

Data shows that most domestic water users, as well as members of other stakeholder groups, feel representatives should be elected.[244] The WUA constitution reflects this understanding by requiring elections.[245] However, the CF has no constitution and many CF representatives are volunteers.[246]

It is not clear if the significant number of volunteer CF representatives exist because some communities' "understanding of representation" supports the idea of volunteer representatives or if there are other factors involved. Some evidence exists to suggest that other factors such as time and funding limitations exist.[247] For example, the CF member Thabeka Yeko said, "I (first) volunteered for my position on the CF to fill in for another CF member and later I was voted into my position by the community."

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[242] (*Understanding of representation*).
[243] (*Understanding of representation*).
[244] "Most feel representatives need to be elected."
[245] (WUA constitution).
[246] (*CF structure*).
[247] (*The limitation of time, limited funding*).

Meeting attendance

The data shows that representatives' attendance is not consistent at WUA and CF meetings.[248] In addition, representatives don't have a clear understanding of what is expected of them when they miss meetings.[249] This issue leads to representatives acting in ways contrary to what their constituents want. If representatives don't do what their constituents desire people get upset and disenfranchised. This outcome creates barriers between the process and domestic water users.[250]

There are three common actions taken by representatives who know they aren't going to be able to attend a meeting.[251] Some representatives do nothing. In this situation, no one is notified and no one is contacted after the meeting to get meeting proceedings. Others take no action before the meeting but make sure they get proceedings from other representatives after the meeting. Third, some representatives arrange for someone else to go in their place to the meeting and make a point to communicate with their substitute after the meeting. The third scenario is the most desired by constituents.

Who do representatives represent?

Data shows that most domestic water users feel their representatives represent them and should be bringing their domestic water user issues to meetings. However, not all

[248] (*Connection between CF-domestics, connection WUA-CF*).
[249] "Unclear meeting attendance expectations."
[250] (*Understanding of representation*).
[251] "Unclear meeting attendance expectations."

domestic representatives have such a clear understanding.[252] Domestic water user representatives often are aware of their community's needs but some representatives bring personal or non-domestic water use issues to meetings.[253]

One of the WUA domestic representatives says he will represent anyone who wants him to speak for them at WUA meetings.[254] It is unclear whether Mr. DeVilliers' willingness to represent anyone is a threat to domestic water users or not.

Often domestic water user representatives bring up non-domestic water user issues. Although Mr. DeVilliers is a domestic representative, he is also a large scale farmer and he often uses his position to bring up large scale farmer issues at meetings.[255] The role of domestic water user representatives may need to be more clearly defined to avoid problems.

The CF representatives' on the WUA may soon also take on roles outside their domestic representative duties. The WUA sees them as domestic water user representatives because of the communities the CF represents.[256] However, the CF has begun to include small scale farmers and may soon include traditional leaders.[257] As the CF begins to represent multiple stakeholder groups their representatives on the WUA will begin to represent more then domestic water user issues. This issue may not be a problem but it

[252] "Lack of unified understanding of representation."
[253] "Representatives are not bringing community issues to meetings."
[254] (Jannie DeVilliers, informal interview 2005).
[255] "Representatives are not bringing community issues to meetings."
[256] (*Connection WUA-CF*).
[257] (*CF structure*).

will be important for the WUA to recognize the change in constituent base being represented by CF representatives.

Feedback is rarely given

Representatives feel one of two ways about feedback meetings. 1) Either they know they are expected to hold feedback meetings or, 2) they don't understand feedback is required.[258] If a representative doesn't understand that feedback is required then the issue relates to the representative's understanding of their role. To fix the problem, the representative must be told that giving feedback is expected. Then, steps need to be taken by the representative to begin holding meetings.

When representatives do feel giving feedback is part of their job other issues are preventing feedback from happening. Often the representative's understanding of how to hold a feedback meeting creates problems.[259] There is no protocol for representatives to follow that explains the correct way to hold feedback meetings. In this void representatives have experienced problems. Various representatives on the CF and WUA have tried to hold meetings by:

- giving feedback at other meetings that already exist in the communities
- holding meetings in community halls
- announcing meetings by loudspeaker in the streets
- going door-to-door verbally inviting people

[258] "Some representatives feel no feedback is needed."
[259] "Unclear how to invite communities to feedback meetings."

- going door-to-door handing out paper invitations
- using other community meetings to spread verbal or written invitations for feedback meetings.[260]

Creating a protocol is an easy concept but a difficult task, not only do representatives have problems clarifying what is required of them for giving feedback but the constituent communities have mixed ideas about what is required.[261] The lack of clarity amongst constituent sends mixed messages to representatives trying to perform their role. One domestic water user told the researcher they didn't want feedback meetings held at all. A second individual said they expected to have written invitation given out door-to-door, loudspeaker reminders in the streets, and meetings held in local community halls.[262] A common set of expectations must be realized before a protocol can be created and before representatives can satisfy their constituents.

Data found the feedback meeting problems are not all caused by representatives. Domestic water users also contribute.[263] Data suggests that domestic water users often don't know what role they are expected to play. The community role will also need to be understood and communicated for successful feedback meetings to occur.

[260] "Unclear how to invite communities to feedback meetings."
[261] "Unclear how to invite communities to feedback meetings."
[262] "Unclear how to invite communities to feedback meetings."
[263] "Unclear community role."

After identifying the problem, the WUA process attempted to create a feedback protocol.[264] The protocol created in combination with the help of two KRV communities and the CF states that representatives are either expected to,

> "Notify the community about feedback meetings through written invitations handed out house-to-house, telling us in person, and when available by using the community loudspeaker to announce the meeting times and locations."

> Or, "The community must be notified about feedback meetings by loudspeaker the day before the meeting, as well as right before the meeting. (If a loudspeaker isn't available written invites must be handed out at churches and other places where community members gather.)"

The protocol was created in November of 2005 and wasn't used until after research for this paper was completed. Therefore, the protocol's effectiveness in dealing with the problems mentioned above is unknown.

During 2005, when data was collected, evidence showed that there was a lack of consensus related to how domestic water users should be represented on the WUA. Conflicting understandings have the potential to cause barriers to domestic water user participation and must continue to be addressed.

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[264] (Poster workshops).

C) Capacity

The "capacity barrier" covers several topics here. The barrier deals with concepts such as a CF representatives' ability to perform their roles and the WUA's ability to meet NWA and constitutional obligations. Broadly, "the barrier of capacity" refers collectively to all participating party's ability to perform their individual roles in the water management process in the KRV.

The capacity barrier affects every aspect of participation. This section will talk about how the capacity of domestic water users, the CF, the WUA, and the representatives affect domestic water users' participation within the WUA water management process.

Domestic water user capacity

Capacity affects domestic water users by limiting people's ability to participate in many ways. Unfortunately, the capacity of many rural communities is low.[265] Many people attribute the low levels to peoples' limited experience with resource management under apartheid rule.[266] Inexperience is a part of the problem.

Since 1994 many efforts have been undertaken in the KRV by an assortment of people and institutions to try and raise rural communities' ability to function in a range of settings. Some efforts have been specifically for water issues education. In the 1990s, a team of educators headed by Nicole Motteux used drama and other educational tools to

[265] "Capacity of domestic water users."
[266] (*Capacity*).

raise water awareness in the KRV.[267] This effort has helped domestic water users throughout the KRV to understand more complex water management relationships. Now select individuals have the knowledge to understand and address water management issues that affect them and their constituents.[268] One CF member shared, "Before we thought that this was "our river." The drama taught us that there are others. What we do affects others downstream."[269] Mr. Mgwali now uses this understanding of interconnectedness as well as other critical knowledge to perform his WUA member role.

There are still limitations created by peoples' low capacity to participate. Data shows that most domestic water users don't know which institution to approach to address particular issues.[270] This issue is exacerbated because there are many institutions that exist which deal with water related activities.[271] These groups include the Department of Water Affairs and Forestry, the Department of Agriculture, and Municipality, the Water User Association, the Catchment Forum, the Forestry Forum, Traditional Leaders, and Working for Water.

Domestic water user capacity also relates to holding elections.[272] This role has been necessary because, as stated earlier, the CF currently doesn't hold elections. In the absence of any CF constitutional rules, communities are left in charge of holding their own elections.[273] The researcher found that some communities hold elections and

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[267] (Motteux "Evaluating").
[268] "Capacity of domestic water users."
[269] (Mava Mgwali, informal interview 2005).
[270] "Capacity of domestic water users."
[271] (*Capacity*).
[272] "Capacity of domestic water users."
[273] (*CF structure*).

regularly replace poorly performing representatives.[274] Other communities have failed to hold elections when representatives need to be replaced.

CF capacity

This section will detail findings on 1) the CF's ability to hold elections, 2) CF leadership, 3) CF organization, 4) the institution's communication capabilities, and 5) the ability of the CF to provide transportation.

1) The CF does not organize elections for community representatives.[275] The task is left to communities and has created a CF membership with varying abilities and community support.[276] The only elections which are organized by the CF are elections for leadership committee seats.[277] It is unclear how elections are held for these seats.

2) Election history shows that the chairman of the CF, Luyanda Nkayi has remained in power since the inception of the CF in 2000.[278] Other leadership committee members have served lengthy terms as well. It is unclear whether this longevity is because of the current leaderships' merit or due to a lack of skilled opponents to run against incumbents. There is some evidence that the later is true.[279]

[274] "Capacity of domestic water users."
[275] (*CF structure*).
[276] (*Capacity*).
[277] "Capacity of the CF."
[278] (*CF structure*).
[279] "Capacity of the CF."

The ability of CF members to fulfill leadership roles has been negatively affected by current leaders' lengthy incumbency. While the individuals currently in leadership roles have grown and learned many leadership skills while performing their roles on the CF, other members haven't had the opportunity to learn these valuable skills.[280]

3) The organization within the CF is also poor.[281] When members of the CF were asked to name their representatives on the WUA the majority of CF members couldn't name one. This suggests that more structure is needed to inform and organize the CF.[282]

Organization within the CF suffers in other ways. Although meeting minutes and attendance are recorded at CF meetings, the secretary was unable to locate records when asked. No meeting minutes were found and only one meeting attendance sheet was located.[283] All formal CF records for the last six years have been lost.

4) Data indicates that the CF's ability to communicate internally and externally is low.[284] The CF has no formal list of membership. When asked to help invite members to a workshop, the chairman Mr Nkayi had to get a CF phone list from Rhodes researchers to contact his members.

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[280] "Capacity of the CF."
[281] "Capacity of the CF."
[282] (*Capacity*).
[283] "Capacity of the CF."
[284] "Capacity of the CF."

Some evidence exists to suggest that the CF's capacity may be stunted by Rhodes University's role in creating and helping to support the CF for the last six years.[285] The CF has never had to exist independently because of the funding, technical, and facilitation support that has been given by Rhodes. Although, this help has had positive outcomes it may have prevented the CF from learning to do core tasks on its own. For example, the CF hasn't been able to secure funding on its own.[286] No CF meeting was held without the help of Rhodes University in 2005.[287]

5) The CF has strengths in some areas. When the CF is provided funding the CF has shown the capacity to organize. In one example, the CF was able to arrange KRV wide transportation for members to attend a meeting.[288] Unfortunately, this capacity is limited due to the current absence of funding.

It can be expected that as the CF works with Spiral Trust to develop a clear mission and constitution their election protocol, organization, leadership, funding access, and communications will all benefit. These protocols are badly needed.[289]

WUA Capacity

The capacity of the WUA is moderate. Data shows that the WUA has strong capacity to organize, use formal communication, and perform necessary leadership roles.[290] The

[285] (*Capacity*).
[286] "Funding for CF negatives."
[287] "Capacity of the CF."
[288] (*Transportation*).
[289] "Capacity of the CF."
[290] "Capacity of the WUA."

WUA shows less capacity in meeting their progressive constitutional election guidelines, informal communication, transportation, and technology needs.

The WUA is well organized, supported by their constitution which gives clear guidelines, and has a qualified secretary.[291] Records are available dating back to the creation of the WUA in 2000. This organization also allows for strong formal communication. Maintained lists of contacts allow the WUA to stay in contact with members and constituents by phone and mail. Significant records are available of interactions with DWAF officials as well as other stakeholder groups.[292] These records allow the WUA to hold groups accountable for promises and commitments they have made. Currently, meeting invitations are made by calling each member by phone.

The WUA leadership is strong. Currently, the WUA chairman is Erik Nohamba a Xhosa large scale citrus farmer who lives in the middle KRV and speaks both English and Xhosa.[293] Furthermore, the leadership of the WUA has changed hands since 2000, allowing leadership development of multiple members.[294]

Some capacity issues still present barriers within the WUA to domestic water user participation. Elections are held but not as frequently as required by the WUA constitution.[295] In addition, all members up for office in 2005 retained their seats.

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[291] "Capacity of the WUA."
[292] "Capacity of the WUA."
[293] (*Capacity*).
[294] "Capacity of the WUA."
[295] (*WUA structure*).

On several occasions domestic water user representatives and CF representatives didn't attend important meetings because the WUA was unable to reach them.[296] This is a problem since many of the people the WUA is trying to include have no phones. When phone calls did not produce results, the WUA secretary did not try any alternative method of communication. An example of a possible indirect communication channel would be to have a second contact in a community who, if called, would be willing to walk to the house of the WUA member and deliver important information. Informal communication is explored more in the *communication* section.

Transportation is a problem. Many domestic water users missed meetings in 2005 because rides weren't provided for them.[297] It is unclear if the WUA lacks the capacity to provide transportation (logistically or economically) or simply chooses not to provide these rides.[298]

Representatives' capacity

Representatives' knowledge of and experience with water use issues is low. Representatives' limited experience with technical information is a barrier to their successful participation. Most representatives find it difficult to contribute because information at meetings is too technical.[299]

[296] "Capacity of the WUA."
[297] (*Transportation issues*).
[298] "Capacity of the WUA."
[299] "Capacity of representatives."

Some representatives lack the basic skills needed to fulfill their jobs. For example, although there are two CF representatives on the WUA, representatives have had few chances to gain experience. Their job is being filled by Mr. Nkayi, the CF chairman who attends WUA meetings officially as a domestic water user representative. This "interference" by Mr. Nkayi means that the two recognized CF representatives have not been able to gain the needed skills to fulfill their roles.[300]

Data indicates that representatives who remain as part of the WUA over a significant period of time (several years) slowly gain greater capacity to participate.[301] The three domestic water user representatives on the WUA have grown significant abilities to fulfill their roles on the WUA since they were elected to fill their seats in 2000.[302]

The domestic representatives have held their seats for over five years. Easter Manci shared, "At first I couldn't contribute at meetings but over time I have gained the skills and knowledge."[303] As this quote demonstrates, Miss. Manci has also gained confidence in her time as a domestic water user representative. Such confidence is as significant as the more tangible gains of skill and knowledge.[304]

The idea that capacity increases over time is encouraging. However, many representatives don't come to meetings consistently enough to gain significant capacity. Changing faces at meetings is common and creates problems. Knowledge learned during

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[300] "Capacity of representatives."
[301] (*Capacitation*).
[302] "Capacity of representatives."
[303] (Easter Manci, formal interview 2005).
[304] "Capacity of representatives."

one meeting can't be built on if representatives have other people consistently fill in for them. This issue has created significant problems with WUA member comprehension of technical water modeling.[305] Once a member misses one meeting they find it very difficult to understand the model during future meetings since model comprehension requires skills gained from consistent attendance.

The last significant issue related to representative capacity has to do with the considerably different levels of capacity that exist between members of the WUA. Because some WUA members have low capacity and other members are very knowledgeable and skilled, the pace of meetings is a problem.[306] If meeting pace is set up to help low capacity members, high capacity members get bored and feel meetings are too long.[307] However, if meetings are sped up many representatives are left behind. Finding a balance is important.

Solutions have been suggested. The WUA has considered having pre-meeting meetings to get low capacity members "caught up" on topics that will be discussed during the meeting.[308] These "pre-meeting" meetings could provide members with improved awareness and knowledge of foreign topics. If this idea were to be implemented, the WUA would have to be willing to provide the extra human and financial resources that "pre-meetings" would require.

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[305] "Capacity or representatives."
[306] (*The limitation of time*).
[307] "Capacity of representatives."
[308] "Capacity of representatives."

D) Lack of Clarity

For the water management process as a whole to work it must have a clear purpose which is known by all participants.[309] People must know why meetings are being held and what their role at meetings is. This "understanding of purpose" is not always clear in the KRV. Data shows that in the KRV people's understanding of "purpose" is affected on two levels.

1) Institutions must know why they are involved in the participatory process. In the KRV water management process, this means both the CF and the WUA must be clear about their goals and objectives.[310]

2) Representatives on these two institutions must understand their role. This means that members of the CF and WUA must understand why they are attending meetings and why other members are attending meetings.[311] In simplified terms, if institutions or representatives are unclear about what they are doing or what other players are doing it creates problems for the whole process.

Unclear purpose of CF

One clear problem is that the purpose of the CF isn't well defined. Not having a constitution contributes to the lack of clarity. In addition, many representatives see the

[309] (*Lack of clarity*).
[310] "Lack of clarity, purpose of CF" and "lack of clarity, purpose of WUA."
[311] (*Lack of clarity*).

CF as a job creation institution.[312] Because there is not a clear purpose members' expectations are not unified and often go unfulfilled. This ultimately lowers the credibility of the CF and makes people less willing to participate.[313] The CF's work with Spiral Trust has the potential to help solve these problems.[314]

Clear role for individual CF representatives

Despite the lack of clear CF mission, most representatives understand their community's needs. CF members feel they should promote water access and quality, two issues which CF representatives' have been mandated by their communities to bring to CF meetings.[315] This clarity is positive and will help the CF form their mission when discussions ultimately occur.

Unclear purpose of WUA

All WUA members know that the WUA's main role is to determine water allocations. However, data shows that members don't understand how the WUA will perform this allocations role or how the water allocation process will integrate their constituents' water needs into the plan.[316] This confusion is largely because of the complexity of the NWA and the volumes of other South African water management documents that affect the WUA's allocation procedures.[317]

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[312] "Lack of clarity, purpose of CF."
[313] "Lack of clarity, purpose of CF."
[314] (*Clarity*).
[315] (*Understanding of representation*).
[316] "Lack of clarity, purpose of WUA."
[317] "Lack of clarity, purpose of WUA."

Unclear role for individual WUA representatives

The researcher found that often domestic water user, CF, and municipal representatives on the WUA don't understand their role at meetings.[318] For example, during meetings leading up to negotiations, domestic water user needs were not discussed. Domestic water user needs were summed in the negotiations model by using the United Nation's 25 Liters of water per person per day "basic human need" statistic. Domestic water user representatives didn't understand why they were at meetings if no input was being gathered directly from them.[319]

Because of the recent meetings, most members see water for crop irrigation as the focus of negotiations.[320] The WUA will need to expand the scope of discussion to include more diverse domestic water user needs. Including the "basic human need" figure within mathematical calculations does not adequately incorporate domestic water user needs and issues.[321] To maintain participation by domestic water users, the WUA will need to address this problem.

The issue of purpose is made more complex by the fact that most members don't know why other members are at meetings.[322] For example, only one WUA member could say why the CF has seats on the WUA.[323] This poor level of understanding of other members' purpose will affect negotiations.

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[318] "Lack of clarity, purpose of WUA."
[319] "Lack of clarity, purpose of WUA."
[320] "Lack of clarity, purpose of WUA."
[321] (*Issues and needs*).
[322] (*Clarity*).
[323] "Lack of clarity, purpose of WUA."

If members don't understand how their needs are affected by the WUA's mission a significant barrier is created. Domestic water users' interest and ultimately participation will be affected if the problem of lack of clarity isn't addressed.

E) Limited Funding

Funding is one of the most important components of a functional participatory process.[324] Funding has the potential to impact all other barriers. If funding is available, other barriers can often be addressed. Without funding, barriers that weren't there before can become major limitations.[325] Transportation is an example of the affect funding has on other barriers. With funding, transportation can be provided to WUA and CF members. Without funding, many of these members are not able to attend meetings. This section will look at how funding specifically impacts the CF, the WUA, and representatives serving on these to institutions.

CF funding

The data gathered during the first half of this study suggested that the CF had many issues.[326] However, later it became clear that most CF issues are in part, if not completely, caused by funding limitations.[327]

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[324] (*Limited funding*).
[325] (*Limited funding*).
[326] (STRUCTURE, POOR TRANSPORT, MEETING ISSUES, INADEQUATE FEEDBACK, and BROAD ISSUES).
[327] "Funding for CF negatives."

Funding is necessary for holding meetings. Although meeting costs vary, the approximate median cost can be detailed as follows: 1) translation for meetings costs 400 Rand, 2) pre-meeting communication R200, 3) food R350, 4) transportation R700, 5) and hall rental R30-1000+.[328] When funding is not available all these tasks are made much more difficult.

In January of 2005 the account which the CF was using for their banking was frozen. The account originally was created for storing government funding given to the CF for a project called the Land Care Project.[329] The project ended in 2004 and the government assumed the money remaining in the account was un-used Land Care Project funding. Because of the misunderstanding and the subsequent account freezing, after January 2005 the CF lost access to their private funds.[330] The CF hasn't had access to any funding since this action was taken. The frozen account led to the CF not being able to organize meetings, invitations, phone communication, transportation or any other critical institutional functions.

Besides the impact funding has on basic institutional functioning, funding can create or remove greater opportunities. When funding was available in 2004 the CF was able to visit a well established CF in Kwa-Zulu Nata.[331] This visit allowed KRV CF members to learn from and share ideas with the Kwa-Zulu Nata CF. This sharing opportunity helped

[328] (*Limited funding*).
[329] "Funding for CF positives and opportunities."
[330] "Funding for CF negatives."
[331] "Funding for CF positives and opportunities."

the CF address many of the issues they were and are still facing. The trip was only possible because of funding availability.[332]

Further evidence was found illustrating how funding affects other barriers. With outside funding, in November of 2005, the CF successfully organized transportation and communication for a joint CF and Rhodes University research meeting.[333] This funding data suggests that many barriers will be removed when the CF gains funding.

WUA funding

The WUA experiences the same basic barriers created by funding as the CF. However, currently the WUA has some access to money.[334] This access has allowed the WUA to address barriers like transport for members to and from meetings. The funding has also allowed the WUA to be proactive providing translation for Xhosa speakers and hiring facilitators for the planning process.[335]

The WUA's limited money supply forced the WUA process to stop producing meeting reports even though the WUA was receiving significant positive feedback on the reports.[336] Stopping the production of the reports has frustrated many participants and taken away all the advantages given through the transparent meeting documentation.

[332] "Funding for CF positives and opportunities."
[333] "Funding for CF positives and opportunities."
[334] "Funding for WUA positives and opportunities."
[335] (MEETING ISSUES).
[336] (*Feedback*).

When consulted, some non-member water users have asked for communication by newsletters or pamphlets.[337] These communication tools would help the WUA reach out to constituents in ways which these constituents prefer. However, the costs of these communication tools make them difficult to produce under current funding limitations.[338]

Representatives' and funding

Representatives are significantly limited by funding when trying to performing their job. Although, holding meetings, providing communication, and the job's transportation demands require money, there is no funding given to representatives on either the WUA or CF to help them perform their roles.[339] With no funding provided for cell phone airtime to formally communicate or funding to hold feedback meetings many representatives don't have the resources to meet expectations placed on them as representatives.[340] In addition, there are no clear answers for how to overcome the funding limitations.

Data shows that other institutions in the KRV fund themselves with community support.[341] Neither the CF nor the WUA have looked at communities or members as funding sources. Instead, both institutions rely on outside funding sources.[342]

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[337] "Funding for WUA positives and opportunities."
[338] "Funding for WUA negatives."
[339] (*Limited funding*).
[340] (*Limited funding*).
[341] (*Limited funding*).
[342] (*Limited funding*).

The funds gathered from community members by other institutions in the KRV go toward transportation, communication, organizational needs, and feedback meeting needs. The African National Congress, church groups, soccer clubs, funeral societies, HIV/AIDS prevention groups, the South African national civic society and other community focused groups all solicit funds from members.[343] Some of these groups have mandatory membership fees.

F) Communication

This section will share the findings from data related to: 1) the forms of communication available in the KRV, 2) literacy, 3) communication at WUA meetings, 4) communication at CF meetings, 5) communication within the Nkonkobe municipality, 6) communication outside of meetings, and 7) ideas shared by participants on how to improve communication.

Forms of communication

Internet and fax communication is not used by the majority of domestic water users in the KRV.[344] Poverty levels in the KRV and the infrastructure needed for advanced communication technology make these systems out of reach. However, there are three common forms of communication that are available: word of mouth communication, written, and phone communication.[345]

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[343] (Limited funding).
[344] *(Communication).*
[345] "Multiple forms of communication and quality."

Word of mouth communication is strong in the KRV and is the most common type of interaction with and between domestic water users in the KRV.[346] The Xhosa culture has a rich oral tradition which makes word of mouth communication a familiar form of communication for domestic water users and fairly reliable. The strength of word of mouth communication can be seen in the example below:

> Mr. Ntshudu lives in Grahamstown a city two hours away from the community of Ntilini, in the KRV, where Miss. Mkoto lives. When Mr. Ntshudu needed to meet with the CF Ntilini representative Miss. Mkoto, Mr. Ntshudu tried to call Miss. Mkoto to set up a meeting with her. Over the course of a week he was not able to reach her. Needing to meet with Miss. Mkoto, Mr. Ntshudu decided to drive to Ntilini. When he arrived he didn't find Miss. Mkoto at home, he returned to Grahamstown. Back in Grahamstown that night, Mr. Ntshudu called a friend in Gonzana (a community next to Ntilini) to ask the friend to get the message to Miss. Mkoto telling her that Mr. Ntshudu was coming on the 31st of August to meet with her. The friend sent his son with the message. The son walked to Ntilini, found Miss Mkoto, and told her about the planned visit. Unfortunately, Miss. Mkoto wasn't going to be home on the 31st. Making a plan, she went to Mr. Zongesile, Ntilini's other CF representative, and arranged with him to meet Mr. Ntshudu on the 31st. When Mr. Ntshudu arrived at Miss Mkoto's home on the 31st Mr.

[346] "Multiple forms of communication and quality."

> Zongesile was there waiting for him. Mr. Ntshudu had his meeting with Mr. Zongesile and the next day Mr. Zongesile passed the information on to Miss. Mkoto.[347]

Because word of mouth communication is free it has a huge advantage to written and electronic forms of communication. The researcher found that although sometimes used, written and electronic forms of communication are often not viable communication options in the KRV because of airtime costs, battery charging issues, and printing issues.[348]

Significantly, data shows that the lengthy chains of communication used in word of mouth communication work in passing on accurate information.[349] In the above example, the child was able to deliver the message from Mr. Mtshudu to Miss. Mkoto, Miss. Mkoto was able to pass the meeting information to Mr. Zongesile, Mr. Zongesile showed up for the meeting with Mr. Mtshudu, and Mr. Zongesile was then able to relay the information back to Miss. Mkoto.

The disadvantage of word of mouth communication is that it is slow, often taking days to disseminate information. And, for word of mouth communication to work people must live close together, be connected through acquaintances, or be brought together to meet.[350]

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[347] Research Notebook 3, Field Observations, page 65).
[348] (*Communication*).
[349] "Multiple forms of communication and quality."
[350] "Multiple forms of communication and quality."

Because word of mouth communication requires close geographic proximity and is the dominant form of communication in the KRV, communities located in physically remote areas participate significantly less then communities closer to meeting locations and town centers.[351] Additionally, communication by word of mouth takes time. When communicating is needed to spread information about last minute meeting or transportation changes word of mouth communication doesn't work.[352]

When available, written communication has significant positive benefit. On the occasion where the WUA has successfully created and delivered written communication to participants, participants have given very positive feedback.[353] WUA meeting reports are an example of successful written communication efforts. However, data shows written communication is not frequently used. Lack of funding for writing, translating, printing, and delivering written communication currently makes written communication a limited communication channel.[354]

The lack of consistent phone communications in the KRV is a barrier to domestic water user participation in water resource management.[355] In the KRV in-home land lines and public pay phones are very uncommon. When public pay phones do exist they are often out of service. Cell phones are more common, with a significant number of domestic water user households owning a cell phone. Individuals who are poor can still own and

[351] "Lines of communication exist outside of meetings."
[352] (Communication).
[353] "Healthy communication at WUA meetings."
[354] "Multiple forms of communication and quality."
[355] "Multiple forms of communication and quality."

use cell phones in South Africa because cell phone charges are only incurred by the person initiating the call.[356]

Unfortunately, the abundance of cell phones doesn't translate into quality communication. It is common for representatives who have cell phones to have no airtime for their cell phones.[357] Lack of airtime is a huge barrier to communication in the KRV.[358] If airtime is available other factors become barriers. Cell phone batteries must be charged every few days which is difficult in communities with no electricity.[359] Additionally, cell phones are often lost or stolen. Mr. Nkayi lost his phone four times in 2005.[360] Since his phone was so frequently lost, the WUA secretary had no contact number for the chairman for months and wasn't able to invite him to several WUA meetings that occurred in 2005.

Lack of airtime makes it difficult for participants to return calls and affects participants during CF and WUA meetings. The absence of airtime on personal cell phones makes it common for people to answer their phones no matter where they are.[361] It is very common for meeting participants to answer phones in the middle of meetings, which creates disturbances.[362] During one CF meeting the chairman, Mr. Nkayi took a call that lasted over 30 seconds in the middle of his own presentation. The whole meeting was put on hold while everyone waited for Mr. Nkayi to finish his call.

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[356] "Multiple forms of communication and quality."
[357] (*Limited funding*).
[358] "Lines of communication exist outside of meetings."
[359] "Multiple forms of communication and quality."
[360] "Multiple forms of communication and quality."
[361] (Limited funding).
[362] "Under-developed communication at CF meetings."

Data shows that the CF doesn't use phones to communicate, choosing word of mouth communication instead.[363] To support this assertion, it was found that the CF doesn't have a phone list or contact numbers for the majority of CF members.

Literacy

Communication in written form faces a literacy barrier as well as financial barrier. A significant number of rural KRV domestic water users can't read.[364] The WUA will have to find creative ways to get around this barrier until this basic social issue is resolved by outside forces.

Communication at WUA meetings

Communication at WUA meetings is strong. Members share ideas and listen to one another in turn. Time is given for questions and clarification.[365] However, there are still barriers to member communications. The barrier is contributed to by overly technical material, limited time at meetings for adequate dialogue, and lack of focus on domestic issues.[366] Most communication barriers relate to other barriers already covered such as the limitation of time, capacity, and lack of interest.

[363] "Lines of communication exist outside of meetings."
[364] "Literacy."
[365] "Healthy communication at WUA meetings."
[366] "Healthy communication at WUA meetings."

Overall, WUA members said that the WUA is very inclusive. There appears to be a feeling that everyone involved is trying to make "it" work.[367] This "good faith" feeling is a very positive sign. Fear or trust issues, which frequently limit communication within participation platforms, were not found to be significant barriers in the KRV water management process.

Some willingness to participate by powerful WUA members comes from the NWA. Large scale farmers shared that they feel the law mandates water of sufficient quality and quantity be available to domestic water users as a first priority.[368] Their irrigation needs are second priority. Because of the legislation, powerful members are aware that they must be very open and accepting of domestic water needs. Without a successful process to give legal water allocations, powerful citrus farmers will not have guaranteed water access, which they need to plant citrus crops that will continue to need water thirty years into the future.

Stronger WUA members look out for less capacitated members by making sure everyone is heard. When asked if participation at a particular WUA meeting was strong, the people who felt they had participated "a lot" said there was poor participation by others. Going further to say, participation was poor because some members weren't speaking up and contributing as much as they personally had.[369] Inversely, members who felt that they had participated less said they were happy with their opportunities to participate and favored the meeting process that had occurred. There is a significant desire by members to create

[367] "Healthy communication at WUA meetings."
[368] "Healthy communication at WUA meetings."
[369] "Healthy communication at WUA meetings."

an open atmosphere that enables all members to fully participate. This desire by members has allowed good communication.

Problems do exist. Members with a lower capacity to understand concepts being discussed are limited by their lower ability to comprehend the foreign concepts. This affects their ability to communicate ideas and feelings on the subjects.[370] This barrier is accentuated when information is overly technical.[371]

Communication at CF meetings

CF meetings held without Rhodes University are held in Xhosa.[372] This is because currently all CF members speak fluent Xhosa. Evidence suggests that the CF meetings provide quality communication and valuable discussions.[373]

It is also clear from CF capacity data that Rhodes University's involvement with the CF has prevented the CF from taking control of fundamental roles involved in communication. The University's involvement may be stunting the CF's skill development.[374]

Communication within the Nkonkobe municipality

[370] "Healthy communication at WUA meetings."
[371] "Capacity of representatives."
[372] (*Language issues*).
[373] "Under-developed communication at CF meetings."
[374] "Under-developed communication at CF meetings."

It is clear the Nkonkobe municipality doesn't represent domestic water users well. Communication is one of the major reasons for this poor connection.[375] Outside of meetings there is no dialog within the municipality about the WUA, says municipal representative Asia Poofolo.[376] Furthermore, the municipal representative has no communication with ward councilors who are meant to represent local communities at the municipal level.

This data suggests that a domestic water user who tries to communicate with the WUA through their community's municipal representative has a poor chance of successfully communicating their needs.[377] If a domestic water user realizes their community's municipality representative is a poor link and they try to communicate directly with the municipal director they are likely going to face other problems. The municipal director's secretary has no computer, or pen and paper to write down communications or meeting dates.[378] In addition, the secretary tells anyone who comes to speak with the director that the director is busy and can't meet with anyone. When asked, the secretary admits that the director is always busy, suggesting that he will never be available.[379]

Communication outside of meetings

To understand communication barriers it is important to look at the communication between domestic water users, between representatives and their constituents, amongst representatives, and between water management institutions and their representatives.

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[375] "Broken communication with and within the municipality."
[376] (Asia Poofolo, informal interview 2005).
[377] "Broken communication with and within the municipality."
[378] "Broken communication with and within the municipality."
[379] (Mr Gwintsa, informal interview 2005).

Communication between domestic water users is high within communities and between geographically close communities. Interactions are frequent because community members belong to many community groups. These water users see one another at African National Congress meetings, soccer club meetings, church, and other community gatherings.[380] In addition, a significant amount of people's time is spent outside of the house working in the community, preparing food, washing cloths, collecting water at central locations, and tending home gardens. These activities make face to face interaction between neighbors routine.[381]

Communication between representatives and domestic water users is moderate. Although data indicates that very little formal feedback is given by representatives,[382] data shows that significant communication does occur informally.[383]

The majority of CF and WUA representatives are members, if not leaders, of other local community groups. The members' affiliations help both institutions connect with wider networks of people.[384] Mr. Nkayi is an example of this "affiliation trend" with leadership roles on Belfour's local African National Congress chapter, and traditional leaders' council in addition to his roles on the CF and WUA.[385]

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[380] "Lines of communication exist outside of meetings."
[381] "Lines of communication exist outside of meetings."
[382] (INADEQUATE FEEDBACK)
[383] "Lines of communication exits outside of meetings."
[384] "Lines of communication exist outside of meetings."
[385] (Luyanda Nkayi, informal interview 2005).

The KATCO and Riverside packing sheds employ large numbers of domestic water users during the picking season. During these times inter-community communication is greatly enhanced.[386] Many people suggest that these channels be used more formally for communication by asking community groups to designate a period of time to discus CF and WUA issues while they are congregated at packing shed for seasonal work.

Communication amongst representatives outside of meetings is a problem. Representatives from a given community often live close to each other which provides opportunity for multiple representatives to interact. However, communication between representatives diminishes as geographical distance increases.[387] This means that representatives from communities far from one another have little to no contact outside of CF and WUA meetings. For example, there is minimal communication between representatives of Lower Blinkwater and Cath Cart Vale outside of CF meetings.[388]

Outside of meetings, communication between institutions and domestic water user representatives is low.[389] The WUA makes no attempt to communicate with representatives outside of meetings except for making meeting invitations by phone.[390] The CF has no formal communication outside of meetings. However, as covered above, communication between leaders and members does happen when these players live in close proximity.[391]

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[386] "Lines of communication exist outside of meetings."
[387] "Lines of communication exist outside of meetings."
[388] (Communication).
[389] "Lines of communication exist outside of meetings."
[390] (*Communication*).
[391] "Lines of communication exist outside of meetings."

Improving communication

Many participants gave suggestions for improving communication. Newsletters, pamphlets, having clearly defined goals, holding annual public meetings, and providing written invitations to meetings were all ideas.[392] In addition to these ideas the WUA has considered the idea of having a full time employee in charge of being "the face" of the WUA in the KRV. This person would be in charge of gaining publicity, creating newsletters, making connections, building partnerships, and doing WUA administration. As funding becomes available many of these ideas will become more possible and the barriers to communication that the ideas concern will be addressed.

Conclusion

The six *theoretical concepts*: INCLUSIVE STRUCTURE, LACK OF INTEREST, POOR TRANSPORTATION, MEETING ISSUES, INADEQUATE FEEDBACK, and BROAD ISSUES, show that there are many barriers to domestic water user participation in water resource management in the Kat River Valley. It is encouraging to understand that the participation process still functions even with the barriers identified. Acknowledging that the participatory process is working, removing the barriers is still important and will make the process even more inclusive for domestic water users. The following discussion section will talk about what these barriers mean and what we can learn from them.

[392] "Ideas for improving communication."

CHAPTER FIVE: DISCUSSION

The goal of this study is to understand what barriers inhibit previously disadvantaged domestic water users' participation within the Kat River Valley Water User Association. So far this report has provided introductory information about the Kat River Valley (KRV), reviewed literature related to the research question, described the research methodology, and recorded research findings. This section will discuss those research findings and make recommendations.

This chapter is divided into five sub-sections:

- **Subsection 1:** Barriers that were found in both this study and in the literature review
- **Subsection 2:** Barriers found in the literature review but not in this study
- **Subsection 3:** Barriers found in this study but not in the literature review
- **Subsection 4:** Recommendations for dealing with the identified barriers
- **Subsection 5**: Ideas for subsequent research

I. Barriers Found in Both the KRV Study and the Literature Review

Many of the identified barriers to domestic water users' participation in the KRV water resource management process were also barriers described in the literature. These common barriers suggest that some of the problems experienced in the KRV process are not unique. It would be helpful to the WUA process for the participants and planners

seeking to overcome barriers to try techniques used successfully in other resource management processes.

The barriers found in both the literature and the KRV case study are:

- Low interest
- Transportation issues
- Language and translation limitations
- Gender inequality
- Inadequate feedback
- Lack of clarity regarding purpose
- Limited funding
- Limited time
- Capacity barriers
- Inadequate communication
- Agency resistance to power sharing
- Lack of affiliations/partnerships

Other barriers identified in the literature review were found in the KRV but do not show up on this list. This is because closely related barriers have been combined. This combination of like barriers means that many barriers discussed in the literature review will not be dealt with independently in this section. For example, the *capacity* barrier found in the KRV study relates closely to barriers found in the literature review as *low education, limited training, low self-confidence, low institutional capacity,* and

inadequate skills. For this reason, *low education, limited training, low self-confidence, lack of institutional capacity,* and *inadequate skills* all appear here together as the "*low capacity barrier*."

Funding

Off all the barriers identified in both this study and the literature review, one barrier stands out because of the disproportionately large impact it can have on participation. This dominant barrier is *limited funding*. The lack of funding has created serious problems in the KRV both directly and indirectly. The lack of funding creates problems directly by preventing the CF from holding meetings. However, the lack of funding also exacerbates other barriers, creating problems indirectly. *Limited funding* intensifies problems such as *poor transportation*, *inadequate communication, low recognition, lack of interest*, and *inadequate feedback*. All the direct and indirect problems created by *limited funding* combine to constitute a serious dilemma.

Poor transportation and *inadequate communication* are barriers faced by the CF; these barriers would be greatly reduced if the CF were adequately funded. *Limited funding* is restraining CF leaders, forcing the CF to tell communities that there is not enough money to provide the transportation and communication necessary for inclusion of additional communities. In this way, funding has significantly limited domestic water user participation in resource management decision making in the Kat River Valley.

Limited funding also affects the WUA. Because of cost, the WUA had to stop translating meeting reports into Xhosa, despite local representatives' need and strong support for written reports. Furthermore, if the WUA plans to continue using the CF as a significant domestic water user representative body, the WUA will need to help the CF with its financial issues.

To make matters worse, *limited funding* will soon become an even bigger issue. The WUA currently receives grant funding from the Water Research Commission. The 2003 grant was to facilitate the WUA's transition from an irrigation board into a legally recognized WUA by 2007. The grant is not for normal WUA operations, and will expire in 2007 at the end of the four year transition process. The literature review suggests that the *limited funding* issue evident here, especially in respect to institutions having trouble at the end of grant periods, is not unique

A European Union report addressing rural participation, states that "activities must be viable beyond the period of donor funding."[393] It is clear that the *limited funding* barrier is present in many participatory processes. The WUA will have to face this *limited funding* barrier, especially after it worsens in 2007, to remain inclusive of all domestic water users.

[393] (European Union 2).

The WUA has options. Some funding will be available through water allocation fees.[394] Other funding possibilities include WUA membership fees, CF membership fees, DWAF funding, democracy building grants, and other development grants.

In addition, the National Water Act provides conditions under which "the Minister of Water Affairs can provide financial assistance funding for empowerment and alleviation of past racial and gender discrimination."[395] Charging member fees could be a significant option if members value the services the CF and WUA provide. Because membership fees are already charged by most institutions working in local communities, cultural norms may mean ready acceptance of any WUA and CF decision to use membership fees as part of their solution to the *limited funding* barrier.

It is also clear that *limited funding* is impacted by other barriers. C*apacity issues* and *low recognition* directly affect funding. Potential funding sources will be available only if the WUA and CF can readily connect with those funding sources. Therefore, WUA and CF's capacity to take advantage of such opportunities is critical.

Recognition of the WUA and CF by other institutions and participants will also affect funding success. (The recognition barrier was not identified in the literature review but its connection to funding makes it relevant to the discussion here.) The Minister of Water Affairs and Forestry, in a meeting with the CF, told the group its greatest chance for long term funding is through the Nkonkobe Municipal Integrated Development Plan (IDP).

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[394] (DWAF "National," 9).
[395] (DWAF "Public" Guide 3 Box 1).

The CF's partnership with the WUA should help the CF establish the necessary connections with the Nkonkobe municipality. If the CF can become part of the IDP, the IDP plan would provide substantial ongoing support for the CF. The WUA can also use its municipal representative to investigate IDP funding possibilities.

II. Barriers Present in the Literature Review That Were Not Found in the KRV Study

Some barriers that were prominent in the participation literature weren't found in the KRV study.

Common barriers not found in the KRV study include:

- Lack of awareness
- Lack of early involvement
- Participants feeling that the process is a forgone conclusion
- Lack of trust
- Lack of transparency
- Process inflexibility
- Religious issues
- Age issues

The absence of these barriers may be for any of three reasons: (1) the KRV context may be significantly different from the cases considered in the existing literature, (2) positive process measures taken by KRV process may have avoided these barriers, or (3) the barriers may exist in the KRV, but the research methods used for this study may not have detected them.

Significantly different contexts

The KRV participatory process operates within a context that has unique characteristics, such as language. The KRV context also lacks characteristics present in other studies. Conflicts that are created by specific catchment characteristics in other studies, such as the presence of coal mining, may not exist in the KRV because mines or other catchment characteristics don't exist in the KRV. There is currently no heavy industry in the KRV.[396] If brick factories or other industries found nearby come to the KRV, the WUA will need to include and proactively address the new potential barriers.

Religion is not a barrier in the KRV. Religion has been identified as a barrier in some participatory processes where participants have had conflicting beliefs. For example, conflicts between people of Muslim and Christian faiths are common in some places. However, in the KRV Christianity is the dominant faith. Numerous Christian churches are found in the KRV communities.

No person of any other faith was encountered during the study period, with the exception of one individual. There was one Buddhist. The Buddhist was a leading member of the

[396] (Motteux "Evaluating" 48-55).

meeting facilitation team and had no problem being a member of the water management process. Because the KRV is an almost exclusively Christian community, cross-religious community tensions aren't present. Furthermore, no tensions were found between Christian faith communities to indicate the presence of a barrier.

Lack of barriers due to positive process actions

The second reason for the absence of some barriers in the KRV study is likely because of positive actions taken within the water management participatory process. These positive actions are instructive and worth noting.

Several common barriers were averted in the KRV because process leaders were open, allowing the process to be flexible and inclusive in its design and facilitation. The *lack of early involvement* barrier was avoided by involving stakeholders early on. The process was built from a grass roots level. Participants identified the need for the process and were on board from the start.

The *process inflexibility* and *lack of trust* barriers were not problems in the KRV. Because the process was flexible, planners and facilitators were able to change meeting design, locations, and other process logistics such as transportation in order to accommodate and meet the needs of participants. This two-way dialog and responsive action, based on participant input, showed participants that the process was flexible and helped to build trust. Participants felt included in the process. People talked with one

another and worked together. This flexibility and trust changed many parts of the process and allowed participants to understand one another's opinions.

The KRV participation process also dealt successfully with the *lack of transparency* and *process is a forgone conclusion* barriers. The process plan draft was developed and written by a team of planners, many of whom were familiar with the KRV context and stakeholders. Facilitators then submitted the plan to the WUA and CF for comments. During presentations, each process step was explained so that participants could help define the stages and the level of involvement they desired. Participants were allowed to discuss the steps and voice their opinions. Both the WUA and CF bodies approved the process plan. Then throughout the process, planners met with participants to gain additional input and get approval for necessary adjustments.

Developing the process with stakeholders, and having the process framework visually displayed on the wall at meetings helped create transparency. This transparency built trust and understanding.

Translation has allowed the KRV planning process to be more inclusive of all domestic water users. Therefore, even though the time required for translation, the cost of translation services, and the cost of producing reports in both Xhosa and English are concerns, providing such translation within the KRV process is critical. Continued translation will help the WUA successfully include domestic water users and keep language from becoming a more significant barrier.

Transportation is a barrier in the KRV, but WUA efforts to address transportation needs have made significant progress and should be recognized. Due to WUA efforts, many representatives currently have access to meetings that would otherwise be inaccessible. However, *transportation issues* are still a problem. It is clear transportation still prevents some representatives from attending meetings.

One can assume that as economic inequalities across South Africa are addressed, transportation for poor communities will improve. Higher incomes will mean that more rural families will be able to afford taxis, bikes, and family cars. As this transformation occurs, transportation demands on the WUA itself will likely decrease. Until then, the WUA will need to keep working to address transportation needs.

Unidentified barriers

The third reason a barrier identified in the literature may not have been found in the KRV study could reflect this study's failure to detect it. It is possible and likely that some barriers exist but weren't properly identified. Research length, researcher age or gender or skin color, the inter-connective nature of barriers, and many other factors could have prevented barriers from being detected.

Lack of awareness and *age issues* do not seem to be barriers in the KRV. However, they could have been missed based on the research methodology.

The research design focused on people in and directly around the KRV water management process. Problems and barriers faced by potential participants who lack awareness of a process are not likely to show up in data collected primarily from people who are already aware. Generic conclusions can be made based on barriers that current participants have faced. More research is needed, however, to determine whether non-participants are unaware that the process is taking place, or whether they are aware but uninvolved. Once this point is clear, remedial actions can be taken as necessary.

Age discrimination is known to exist in the Xhosa culture. For example, an older community member is more likely to be given respect than a younger member. However, no data was recorded connecting this issue directly with the WUA process. It is possible that researcher age or other biases limited information that would otherwise have been shared by research participants. Research dealing with age barriers should be conducted.

III. Barriers Identified in the KRV Study That Were Not Found in the Literature

Some barriers that were found to be significant in the KRV study weren't found in the literature review.

Structure

Although the term "structure" appears often in literature dealing with public participation, no literature sources were found that used the term "structure" to denote issues related to

voting rights, number of seats in representative bodies, mission statements, or barriers related to a lack of partnership structures. When the literature does identify structure as a participatory barrier, sources use the term to mean anything from process issues to institutional capacity. Lachapelle's use of the term "institutional design" is the reference in the existing literature which is most similar to the way that *this* research defines "structural barriers." For the purpose of this discussion the term "structural barriers" will be understood to denote only the limited concepts of institutional constitution, mission statement, and institutional connection barriers.

Structural limitations found in the KRV have only a moderate influence on the water management process. Because of this limited level of influence, it was determined that the institutions involved in the water management process are inclusive. However, the institutions could be made even more inclusive.

The CF provides the strongest connection between domestic water users and the WUA. However, the CF has noticeable barriers to domestic water user participation. The CF *structural barrier* is created by the absence of any constitution or mission statement to help guide the group. The barrier should become less of an issue as the CF works with Spiral Trust to create a constitution and mission statement. Removal of this barrier will strengthen the institutional connection between the CF and the WUA.

To be fully inclusive the new constitution will need to allow more communities in the KRV to join the CF over time. As *low recognition, poor transportation, communication,*

and *limited funding* barriers become less of a problem, this inclusion will become easier to achieve. The CF's lack of structure has made other barriers more significant. These include *lack of clarity* about the purpose of the CF and WUA, *lack of interest, inadequate communication, low recognition, transportation issues, capacity issues, limited funding, understanding of representation,* and *inadequate feedback*.

The WUA could improve domestic water users' participation by granting the three domestic water user representative seats, as well as the two CF representative seats, voting rights on the WUA board. These changes would make negotiations more equal.

Low recognition

Low recognition isn't identified as a barrier in the public participation literature. Carrol and Stenquist come the closest to discussing recognition as a participation barrier.[397] They describe the positive effects of developing political and interest group affiliations. Carroll and Stenquist see such affiliations as a way to involve political and interest groups in the process as stakeholders. As Carrol and Stenguist advocate, involving interested and affected stakeholders is critical to process success. However, their affiliations issue is not the same as the *low recognition* barrier in the findings section of this paper.

For the purpose of this study the term *low recognition* denotes institutions' recognition of one another, and the effect which the degree of such recognition has on stakeholders' interest in participation and on institutions' access to funding.

[397] (Carroll and Stenquist 3).

It is possible that *low recognition* shows up more clearly in the KRV context than in most other studies because the KRV process is a bottom-up process. Bottom-up processes often have more trouble gaining recognition from major institutions than do processes that are started by the major institutions themselves. In South Africa the KRV is the only water management process trying to implement the NWA mandates from the bottom up. Most resource management processes in South Africa and in other countries are initiated by or closely connected to government agencies. This means that the planning and management undertaken for most processes is top-down. Powerful agencies and large institutions are involved from the beginning. Such top-down management often guarantees recognition of a process by other major institutions and frequently entails resource access through funding, technical, and human support.

In the case of the KRV bottom-up process, government and powerful institutions seem less willing to be involved. It is possible that these institutions are less comfortable when required to participate outside of their normal leadership roles.

If the KRV process were top-down, it might receive DWAF, municipal, and other institutional recognition that it currently lacks. It should be noted here, however, that the researcher is not recommending top-down process or management. The benefits of grass roots, bottom-up initiation and management are clearly evident in the KRV. The findings section shows many of these benefits, which include trust, transparency, flexibility and interest.

Lack of unified understanding of representation

The barrier created by domestic water users' *lack of a unified understanding of representation* isn't discussed in any of the existing literature which has been reviewed. This barrier is similar in nature to the *lack of understanding of decision process by public and staff* discussed by Lord and Cheng.[398] However, the *lack of unified understanding* barrier discussed in the findings section of this report is specific to understanding representation as opposed to understanding the process as a whole. In addition, Lord and Cheng mention the barrier in order to suggest participants must know how the process works so they can more successfully participate. The *lack of unified understanding of representation* barrier deals with divergent views and the need for a common set of expectations. In other words, the former barrier indicates lack of *awareness,* while the latter barrier indicates lack of *consensus*.

In the KRV, process participants have differing ideas of what good representation looks like. If clearly defined roles are not established for representatives and communities, the divergent expectations are likely to create eventual problems for the process. Representatives may lose the support of constituents who feel they aren't being adequately represented. Ultimately institutions may loose the support of the people those institutions are meant to serve.

Domestic water users in the KRV have begun to confer and formulate common expectations about what representatives should do and what they themselves, as water

[398] (Lord and Cheng 62).

users, are expected to do as members of their communities. This common vision will help representatives be more responsive to domestic water users and allow communities to better support their representatives.

IV. Recommendations

The water management process in the KRV is working. It is successfully involving domestic water users within the WUA and the KRV catchment management planning process. This achievement is no small feat in South Africa, where many water management institutions have failed to reach out to this stakeholder group. This finding is very significant. However, barriers still exist that limit the degree of involvement by domestic water users. Additional progress is needed - and feasible.

The following recommendations are provided to suggest how the water management process might achieve greater inclusion of domestic water users. These recommendations are made with the acknowledgement that the task of eliminating barriers to public participation is never complete. It is also not linear. Barriers may need to be re-examined and re-addressed over time as the water management process changes and grows. Furthermore, it will be very difficult to address some barriers until such time when greater financial resources become available.

This study provides just one researcher’s perspective. Some conclusions made in this chapter may become outdated; others my ultimately be proven incorrect. That

understood, every attempt has been made to be credible and accurate in developing these recommendations.

The key recommendations are:

- increasing clarity of purpose
- creating protocols for communication, transportation, and feedback
- increasing written communication
- being more aware of people who identify with multiple stakeholder groups
- being more aware of continuity issues

Clarity of Purpose

Many domestic water users involved in the KRV water management process are unclear about the purpose of many aspects of the process such as why certain institutions exist, why meetings are held, why their own participation is important, and why others' are participating. Clarity of purpose could be improved within the process in three main areas. First, findings showed that representatives don't clearly understand why they are at meetings. Second, it is clear representatives don't understand why other members are at meetings. Third, overall institutional purpose is often not clear to members. Because of these three issues representatives are often confused. Interest, communication, and the likelihood of process success will be increased if CF and WUA members understand why they are at meetings, why others are at meetings, and why the WUA and CF are holding meetings. It is recommended that action be taken to clarifying these three matters. For example, the WUA might create a space where each member could discuss and define

what they feel their “purpose” is. Such exploration would not only help individuals understand their purpose better but it would help members understand each other’s “purpose.” Clarifying purpose, in the three areas mentioned, could greatly improve understanding and ultimately improve the entire process.

Protocol creation

The study revealed that procedures are not clear to representatives and institutions within the water management process. This confusion leads to frustration when people trying to fulfill their responsibilities are told they haven’t met expectations.

Recognized protocols could fix these problems by defining procedures that everyone can agree on and setting expectations that everyone can be accountable for. The successes and failures experienced by participants and institutions trying to perform their roles over the past few years could be surveyed in order to help define best practices. With protocols in place it would be clear to everyone involved how institutions were going to communicate with them, how transportation was going to be provided, how feedback should be given, and how other tasks should be preformed.

If problems still persist after protocols are in place, two steps can be taken. If the actions of institutions, representatives, or communities aren’t in accordance with the protocol, other participants must confront the violator. If actions *are* in accordance with the protocol yet there are still problems, then participants should evaluate the protocols and make necessary changes.

Increased written communication

WUA members say that written communication has helped them stay up to date on meeting discussions and decisions. Furthermore, the meeting reports are being successfully used to show constituents what is happening within the water management process. Members say pictures of the representatives working together at meetings have been particularly helpful.

When written communication has been provided in Xhosa, the reports have been very useful for constituents who don't understand English. Currently minimal written material is handed out at meetings or used to communicate with domestic water users. Due to the positive response written material is getting, those directing the water management process should resolve to share even more information in written form. Unfortunately, the water management process is not looking to expand written communications. There is not enough money and written communication has been cut back.

If written communication can be increased it would strengthen domestic water user participation. Written communication in the form of translated reports, pamphlets in local languages about WUA and CF purposes, and yearly updates in the form of a newsletter, would all help with domestic water user interest and participation.

As more water users become engaged, the demand for accurate records will become critical. Written documents will help catch new participants up on what has happened

already and on what decisions have already been made. These documents will become a valuable tool for maintaining process transparency.

Awareness of participants who identify with multiple stakeholder groups

Findings show that stakeholders don't fit neatly into "stakeholder group boxes." For example, domestic water users often use water for non-domestic purposes such as small scale farming. Because of this "stakeholder group crossover," most stakeholders identify with multiple stakeholder groups.

Currently, participants' multiple group identities aren't acknowledged. In the KRV water management process the forestry stakeholder group is seen as separate from the domestic water user group. Likewise, small scale farmers are seen as entirely distinct from large scale farmers or domestic water users.

Being aware of reality and acknowledging overlapping categories is important. Dividing stakeholders into isolated groups defines participants by their differences. If participants can be identified in such a way that their "multiple stakeholder group identities" are acknowledged in the process, thereby highlighting members' similarities, the process can help people find common values, needs, and goals. Such discoveries could ultimately help the process goal of collaboration.

It is unclear how one might move away from having distinct stakeholder groups represented on the WUA, since voting has been set up based on stakeholder groups.

Having the separate groups helps people more easily (but possibly more artificially) verify that the WUA is being inclusive.

Attention given to this subject during "purpose clarification" discussions would be helpful. Recognition of overlap between stakeholder group classifications could allow WUA members from specific stakeholder groups to define their roles as having a primary "purpose" and less defined "secondary purposes." In this way, for example, voting members of the WUA who were elected as small scale farmer representatives could clarify secondary purposes of their attendance. These secondary purposes could then include domestic water use as well as other water needs.

Continuity

Continuity of the process affects participation over the long term. Short term inclusion does little to help domestic water users, and may in fact hurt future efforts by lowering participant's trust and willingness to invest time to participate in other processes. In addition, if the WUA process fails to maintain its inclusion of domestic water users during the implementation or monitoring phases of water management then the WUA will fail to meet NWA mandates.

Beginning in 2008 the WUA will no longer have money from the Water Research Commission to help with participation efforts. Whether the WUA is able to secure funding from other sources in 2008 will have a significant impact on the process's inclusiveness. The WUA needs to find funding to provide participation for domestic

water users. The amount of funding will impact how effective the WUA will be in continuing to address and remove barriers to participation for domestic water users.

V. Follow Up Research

Conducting this research has led to as many questions as answers. Moreover, due to the limited scope of the research, many questions remain unanswered.

Age and gender

Only a very preliminary understanding of gender and age dynamics was gained through research findings. More investigation on age and gender could reveal significant issues and perhaps help shape recommendations about how to more effectively enable youth, the elderly, and women to participate.

Currently there is a group of people in the KRV who are trying to create a Junior Catchment Forum. One of the aims of the junior forum is to help youth develop the skills to eventually participate in water management efforts with the WUA. Cultivating interest in water management and the skills to participate in local water management groups would benefit both locals and the WUA.

Recognition

The barriers caused by *low recognition* are not well understood in the KRV study or in the existing literature. Understanding the implications of recognition, and how

recognition is connected to top-down versus bottom-up processes, would be very valuable to process planners, regardless of their approach.

Non-participants

Because this research looked at participation from within the process, people who weren't participating at any level were not significantly consulted. Non-participants likely hold valuable information regarding why some people don't get involved. Research focused on this group of non-participants would significantly help process planners to better reach out to non-participants. There is a strong need for this information.

Understanding of representation

The barrier caused by having participants with differing expectations of representatives was examined within the domestic water user stakeholder group. The understanding gained from this examination was very helpful for this research, the water management process planners, and the domestic water users involved. It is likely that understandings of representation vary not only within the domestic water user stakeholder group, but within other stakeholder groups as well. Research that looked at how other groups within the WUA understand the concept of representation would help the WUA provide for the needs of all stakeholder groups represented within the institution.

Stakeholder identity

This study only just began to recognize how stakeholders that identify with multiple stakeholder groups contribute to and affect the process. If most water users do in fact identify with more than one group, then this issue may be very important. The WUA will need a better understanding of the implications that identity has for how participants communicate and perceive the purpose of their participation. With a better understanding the process can become more proactive, learning from and accommodating the needs of those constituents with multiple stakeholder group identities.

Time

Because this research was conducted over a short time period, significant barriers may have been overlooked. For example, once larger barriers to participation, like capacity or funding, are removed, participants may discover new barriers emerging. Likewise, there may be barriers unique to the implementation and monitoring phases of water management. Data collection used in this study was concluded before the process reached these later stages. Researchers need to continue to monitor barriers to see how they change over time. Planners will need to understand new or changing barriers and react to appropriately.

A follow up study

This study is only a snapshot of the barriers which currently exist. Barriers come and go, affected by who is participating, by funding, by leaders, and by politics. Follow-up studies performed at different project phases, but using the same research question and methods, would help process planners understand how barriers change over time.

Furthermore, some actions may be taken by the WUA, planners, and/or participants with the aim of removing barriers identified in this study. If documented, the successes and failures of such efforts will provide valuable guidance for future water management in the KRV, in South Africa and possibly in other areas of the world as well.

Final Conclusions

Many barriers identified in this case study are also found in other studies documented in the professional scientific literature. To the credit of the Water User Association and others involved in the KRV water management process, several barriers found in other studies don't exist in the KRV. The absence of these barriers is significant and should be seen as a great achievement.

It is also significant that several barriers found in the KRV study are unique. It will be important for process planners to recognize these unique barriers and be flexible in trying to solve them. The ideas found in the recommendations section provide the opportunity to more deeply understand the process and to improve on it. Participation will never be perfect, but improvements will bring the KRV process closer to the goal of complete inclusion.

By design this study has focused on barriers faced by domestic water users. This focus can present a grim picture, inevitably emphasizing process shortcomings. It is important

to note, however, that the water management effort in the KRV is successfully including domestic water users in tangible ways not common anywhere else in the country. This is a significant step toward meeting the National Water Act's mandate of inclusion.

There are many barriers that were identified during research that have helped to answer the original research question. In many ways domestic water users *do* face barriers that make participation difficult. Yet with persistence, creativity, and support in many forms, domestic water users are finding ways over, around, and through the barriers that do exist.

These efforts to confront barriers to domestic water user involvement in the KRV are commendable. Every person involved in the WUA and CF is participating in a creative learning process. If successful, the learning that occurs in the KRV could help pave the way for other bottom-up water management efforts all over South Africa. This potential significance is acknowledged by the Water Research Commission, the WUA, and Rhodes University.

APPENDICES

APPENDIX 1**:** Meeting and Interview Dates

WUA meeting	3-8-2005
Informal Interview	5-4-2005
Informal Interviews	5-11-2005
Informal Interviews	5-18-2005
Informal Interviews	5-24-2005
CF workshop	5-31-2005
Village feedback workshops and Informal Interviews	6-1, 6-2-2005
Informal Interview	6-3-2005
WUA meeting	6-9-2005
Informal Interviews	6-13, 6-14-2005
Informal Interviews	6-21-2005
Informal Interviews	6-27, 6-28-2005
Informal Interviews	7-12-2005
Forestry Forum Meeting	7-13-2005
Informal Interview	7-28-2005
Informal Interviews	8-24-2005
Informal Interviews	8-31-2005
WUA meeting	9-5-2005
Informal Interviews and municipal tourism group	9-6-2005
Poster Workshop	9-13-2005
Poster Workshop	9-15-2005
WUA meeting	9-22-2005
Water Resource Commission	9-29-2005
Informal Interviews	10-4-2005
CF meeting	10-6-2005
Formal Interviews	10-10, 10-11, 10-12-2005
Community Chapter ANC Meeting	10-17-2005
DWAF Premier Visit	10-20-2005
CF Poster Workshop Planning Meeting	10-27-2005
CF Poster Workshop	11-3-2005
WUA Workshop	11-9, 11-10-2005
CF Workshop Planning Meeting	11-24-2005
CF Workshop	12-1, 12-2-2005

APPENDIX 2: Kat River Valley Stakeholder List

Irrigators	Large Scale Citrus Farmers
	Immerging Citrus Farmers
	Small Scale Farmers
Domestic Users	Municipality/towns
	Rural communities
	Church groups
	Traditional Leaders and Traditional Healers
Tourism	Katberg Hotel
	Hiking Trail
	Bed and Breakfasts
Forestry	Public
	Private
Stock Farmers	Xhosa families
	Lower Kat Farmers
	(Future) Stock Farmers Association
Conservation and Tourism	Sam Knott Game Reserve
	Double Drift Game Reserve
	Mpofu Game Reserve
	Fort Fordyce Game Reserve
	Farmers Conservancies
	Game Farms
Academic Institutions	Rhodes
	Fort Hare
	Winterberg Agricultural School
	Rural schools/youth
Department of Water Affairs and Forestry	
Department of Agriculture	
Working for Water	
NGOs	Spiral Trust
Scientists	Ecological Research Specialist Team
People Downstream Who Use Water or Whom Are Affected by Water Use	

APPENDIX 3: Research Purpose Form

Rhodes University Student in Partnership with the Water User Association

Research Purpose:

This research is attempting to understand representation within water management in the Kat River Valley. I will specifically be looking at the current representation of groups and individuals within water management. I will be doing this through informal dialog and group discussions. Perspectives on historical representation issues and stories, outside the confines of water management, are also valued and welcome.

This research is particularly interested in water management's representational structure strengths, weaknesses, gaps and potential improvements, (broad level, within the Catchment Forum, and within the Water User Association.) **With the acknowledgement that representation can always be made better, this research's aim is to work with you to strengthen group's and people's individual representation within water management, here in the Kat.**

Your Part:

Your part in this research is to help fill a void in knowledge and perspective. The knowledge and perspective you have from your own personal involvement in the Kat River Valley give you unique opportunity to fill this void, identifying strengths, weaknesses, gaps, and potential improvements within the current representational structures. I hope to work with you to build representation in this way. In addition, your involvement has the potential to strengthen the water management representational structures that represent, impact, and/or involve you.

Your input will be used to identify positive and negative trends in representation, identifying areas for improvement and continued support. Thank you for your help.

Paul Vanderford
Researcher at Rhodes University, working in partnership with the Kat River Valley Water User Association and you.

Feel free to contact me with any questions or concerns that may arise:
E-mail: PaulVanderford51581@hotmail.com
Phone: 073-784-7157

APPENDIX 4: Ethical Protocol and Participant Consent Form

Participant Consent Form

Thank you for taking the time to read and consider this consent form before you agree to participate in my research. I would like you to read and tick the appropriate statements below before signing at the bottom. If at any stage you feel uncomfortable about proceedings you are free to renegotiate any of the terms below. My research depends on your time and goodwill. Your concerns will always be taken seriously.

Tick or cross out any of the statements below as you wish them to apply to you:

I understand the purpose of the research
I understand my part in the research
I agree to participate in this research
I understand my participation is voluntary
I understand I can renegotiate my participation at any time
I understand that I can withdraw at any time
I understand that my name will be left out of the research write-up to maintain privacy.
I am happy for pictures taken during our dialog to be used in the research write-up and potential presentations
I am happy for our dialog to be tape-recorded and transcribed
I wish to review the research interpretations that come from our dialog so that I can make amendments where I see fit
I wish to see a copy of the final write-up my contributes are used in
I understand that parts of this research could be submitted to academic journals or presented at educational conferences

Signed:_____ Date:_____

With thanks,
Paul Vanderford

Feel free to contact me with any questions or concerns that my arise:
E-mail: PaulVanderford51581@hotmail.com
Phone: 073-784-7157

P.S. feel free to take a copy of this form for your own personal records.
Please return the signed copy to me.

APPENDIX 5: Informal Interview Guiding Points

Name

Ways they use water

What groups of people in the KRV use water? Contacts?

What groups of people in the KRV are affected by water use? Contacts?

(If the interviewee has been involved in either the CF or WUA)
which groups have been involved in the CF and WUA in the past?

Who is involved currently?

What are the positives, negatives, gaps, and potential improvements within the CF and or WUA?

If there are gaps or negatives, what do you see solving the problems?

Worries, optimisms, stories?

What do you think about the CF as a representative bridge between domestic water users and the WUA?

APPENDIX 6: Formal Interview Questions

Guiding questions used during interviews held etween October 10th-13th
Interviews were held with WUA members to evaluate AWARE Model workshops: Mava Mgwali, Yannie DeVilliers, Mr Taboo, Eric Nohamba, Mike Magwa, Lew Roberts, Ester Ebi, Elias Manci, Makhwabe Ntsiknlelo, Luyanda Nkayi, and Andile Ndindwa.

What are the benefits you see in the AWARE workshops?

Is there anything that is un-clear?

What is most interesting to you?

How do you feel about the translation at workshops?

How do you feel about the meeting reports being provided by the social team?

Do you report back to your stakeholder group?

How do you feel about the communication/participation happening at WUA meetings?

Are there any obstacles to attending meetings?

Is there any missing information within the model/ how can it be improved?

What is the CF's role at WUA meetings?

What is your definition of the word representation/ what is your understanding of ideal representation?

APPENDIX 7: Catchment Forum Poster Workshop Attendance List

Catchment Forum Members:

(Name, Community)
Thandiwe Memani, Seymour
Ndedomzi Silani, Tamboekisvlei
Margan Sindapi, Tamboekiesvlei
Mave Mgwali, Hertzog
Z.E. Siyona, Hertzog
Phindile Fanapi, Fairbairn
Lungelwa Ketile, Phillipton
Andile Ndindwa, Stonehenge
X.E. Nike, Balfour
Luyanda Nkayi, Balfour
Mzwamele Mbanjwa, Platform
Ntongelga Ngxangane, Picardy
Sonwabile Gontsi, Gonzana
Bulelani Zondani, Gonzana
Buyiswa Ngqokoto, Gonzana
Hofesti Dike, Gonzana
Ntombentsha Somketile, Gonzana
Thembakazi Vokiyana, Gonzana
Thokozile Bosman, Lower Blinkwater
Nomaphelo Mkonto, Ntilini
Zongezile Notana, Ntilini
Bonani Nyanga, Cimezile
Nomangesi Dyasi, Cimezile
Andile Petros, Nondyola

Ntilini:

K Blaan
Kholeko Vece
Luyanda Konzani
Zolile Ngqokotho
Thandiswa Tancu
Regina Dlani
Sakhele Gora
Vuyokazi Mkonto

Seymour:

Nomfundo Thobi
Thobeke Yeko
Nokwandisa Gwayi
Noxolo Ngindo
Vuyokazi Potyisi
Nosimphiwe S.
Thobeka Mvundlela

Social Process Planning and Implementation Team:

Marjolein De Jong, Paul Vanderford, Monde Ntshudu, and Jane Burt

APPENDIX 8: Community Workshop Posters for Ntilini and Seymour, "What Does Being Represented Mean to the Ntilini and Seymour Communities?"

BUILDING THE FUTURE OF THE KAT RIVER TOGETHER

What does being represented mean to the Ntilini community?

It means that…

•The community has a local person who has been elected by the community
•Once a representative is elected, this person must hold a community meeting for the issues of the village to be discussed
•This person must go, on our behalf, to all required meetings
•Our representative must speak for us at meetings and do exactly what the community asks
•We must be able to trust this person to represent us and our community issues
•Feedback meetings must be held with the community so that the community can be updated and discuss what is happening
•The community must be notified about feedback meetings through written invitations handed out house-to-house, telling us in person, and when available by using the community loudspeaker to announce the meeting times and locations

These are the community's needs and expectations of our representatives.

(Ntilini Community Members: Nomaphelo Mkonto, Xolile Ngqokotho, N. S. Thiso,Thobeka Mvundlela, Regina Dlani, Kenneth Bhayi, Luyanda Khonzani.)

BUILDING THE FUTURE OF THE KAT RIVER TOGETHER

What does being represented mean to the Seymour community?

It means that…

•The community has a local person who has been elected by the community
•This person must be passionate about the job of being a representative
•Once a representative is elected, this person must hold a community meeting for the issues of the village to be discussed, such as water, housing, work, education, and welfare
•This person must go, on our behalf, to all required meetings
•At meetings our representative must uphold and focus on our community's needs
•Our representative must not be scared to take our issues to what ever level is necessary to speak with someone who can address our needs.
•Feedback meetings must be held with the community so that the community can be updated and discuss what is happening
•The community must be notified about feedback meetings by loudspeaker the day before the meeting, as well as right before the meeting. (If a loudspeaker isn't available written invites must be handed out at churches and other places where community members gather.
•Our representative must be a role model for the community by helping the community solve conflicts, not drinking in public and not committing crimes.

These are the community's needs and expectations of our representatives.

(Seymour Community Members: Samson Gwayi Vuyokazi Potyi Thandiwe Memani Noxolo Ngindo Thobeka Yeko Nosimpiwo Solani Nomfundo Thobi.)

APPENDIX 9: Catchment Forum Poster, “What Does Being a Representative Look Like?”

BUILDING THE FUTURE OF THE KAT RIVER TOGETHER

What Does Being a Representative Mean to the Community Representatives on the Catchment Forum?

It means that…

- The representative has a local community who has elected them.
- Once a representative has been elected they will perform their duties for a one year term.
- After this one year term the community must organize and hold another election.
- The representative must meet with their community to understand the needs and issues of their community.
- The representative must bring these community issues and needs to CF meetings.
- A representative must go to all meetings.
- If a representative can't make a meeting it is their responsibility to make sure someone attends the meeting in their place and will be able to fill them in on what happened at the meeting afterwards.
- After meetings a representative must give feedback to their community.
- In return, a representative expects that community members will attend feedback meetings and bringing needs and issues to the representative. In this way, a representative and their community can work together keeping the representative informed about community issues.
- The representative expects the community to communicate with them instead of complaining to others.
- A representative is honest and trustworthy.

These are the commitments and needs of Catchment Forum members.

Catchment Forum and Community Members: K Blaan, Hofesti Dike, Regina Dlani, Nomangesi Dyasi, Phindile Fanapi, Sonwabile Gontsi, Sakhele Gora, Nokwandisa Gwayi, Lungelwa Ketile, Luyanda Konzani, Mzwamele Mbanjwa, Thandiwe Memani, Mava C Mgwali, Nomaphelo Mkonto, Vuyokazi Mkonto, Thobeka Mvundlela, Andile Ndindwa, Noxolo Ngindo, Buyiswa Ngqokotho, Zolile Ngqokotho, Ntongelaga Ngxangane, X.E. Nika, Luyanda Nkayi, Zongezile Notana, Bonani Nyanga, Andile Petros, Vuyokazi Potyisi, Nosimphiwe S., Ndedomzi Silani, Morgan Sindapi, Z.E. Siyona, Ntombentsha Somketile, Thandiswa Tancu, Nomfundo Thobi, Kholeko Vece, Thembakazi Vokiyana, Thobeka Yeko, Bulelani Zondani

APPENDIX 10: Catchment Forum Poster Workshop Invitation in Xhosa

Uyamenywa kwi-workshop yeCatchment Forum

Inini le ntlanganiso?
NgoLwesine,umhla we-3 kuNovemba 2005, Kusasa Ntsimbi ye-10(10:00 am)

Iphi lentlanganiso?
Kwiholo yabahlali yaseBlinkwater
(Izithuthi zizakuza neRhodes University)

Ingantoni le ntlanganiso?

Le ntlanganiso izakuxoxa imiba emibini
Okukuqala, amalungu eCF aye achaza ukuba kumanye amalungu eCF oko kulindelwe kubo ngabahlali noko kufuneka amalungu ekwenzile akucacanga kakuhle.. Ngoba akukho nto ichaza kakuhle ukuba uyintoni umsebenzi wabo nokuthi abameli bebesenza indima zabo ngokwahlukileyo omnye komye.Umbono wokuba uyintoni umsebenzi we CF kuzakuxoxwa ngawo kule workshop.Bekunye namalungu eCF abahalali abasixhenxe baseNtilini kunye naseSeymour baye baxoxwa ngale miba baze benza iposta ebonakalisa ukuba bayiqonda njani bona indima yobumeli.Abahlali baseNtilini kunye nabeseSeymour bathanda ukubonisa ngale posta kumalungu eCF.Ngengxoxo ezizakubakho kule workshop, kuzakuphuma iposta ezakuchaza ngobumeli kwingxoxo ezisuka kweli qela.

Okwesibini, iRhodes ikwabona ukuba unxulumano kunye lwesiCF neRhodes ngomba wokuza koMphathiswa ngelenziwe ngcono.iRhodes iyeyangxengxeza kumalungu eKomiti yeCF ngenxa yengxaki ezithe zavela zonxulumano ebelingakhange libe luhle lweRhodes susela oko sasineworskshop yeCF malunga nokuvulwa kweProject. Ukuze sifunde kwimpazamo zethu size sikhule kunye neCF, iRhodes izakuthanda ukusihlale kunye nayo apho sizakubeka izikhokelo zonxulumano.Singathanda ukusebenzisana neCF ngendlela iCF ebingathanda ngayo ukuba sisebenzisane nayo.Ezi zikhokelo zonxulumano sizakuxoxa ngazo kule workshop zizakusinceda ukuba sisebenzisane kakuhle nakwixa elizayo.

Kutheni kufuneka ndize kule workshop?

Le ntlanganiso izakukunika umbono omhle wokuba yintoni kanye umsebenzi weCF.Ngenxa yokuba ulilungu leCF kubalulekile ukuba ingcamango zakho kunye nendlela ovakalelwa ngayo iviwe ngamanye amalungu. Imbono zakho zibalulekile kule nkqubo.

APPENDIX 11: Village Group Poster Workshop Guiding Questions

Community poster creation guiding questions

Who is being represented?

How are they represented?

How does a representative gain their position?

What are the responsibilities and role of the community being represented?

What are the community's understandings and expectations of the representative's role?

What are examples of situations where there is poor representation?

What are the differences between these poor representation situations and positive situations?

How can these bad situations be changed to be positive situations?

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