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A case study on the establishment of a WUA in the upper Kromme River catchment, South Africa



Figure 1: Drie Krone

Part of PRESENCE in the Kromme River Catchment



Facilitated by:

lovinglands

ABSTRACT

The upper Kromme River catchment located in the Eastern Cape, South Africa, is an important wetland providing ecosystem services such as erosion control, good water quality, buffers against floods. This area is under the human pressure and has been destroyed. The NGO called Living Lands has started a the project PRESENCE in the Kromme. The aim of this project is to set up a local learning network to discuss sustainable land use issues and land restoration projects with the local stakeholders. Developing a learning network or a communication platform may help the different stakeholders involved in the area to work together to conserve and restore the area in order to create a living landscape. This learning network or forum may be institutionalized in the future, and according to the context of the area, a Water Users Association may be a good option.

List of abbreviation

CMA: Catchment Management Agency
NMBMM: Nelson Mandela Bay Metropolis Municipality
UKC: Upper Kromme catchment
WfWater: Working for Water
WfWetlands: Working for Wetlands
WUA: Water Users Association

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1. INTRODUCTION

1.1. PRESENTATION OF THE ORGANIZATION

1.1.1. What is PRESENCE?



Figure 2: logo of the PRESENCE network

PRESENCE meaning **P**articipatory **R**estoration of **E**cosystem **S**ervices and **N**atural **C**apital, Eastern Cape, is a network helping to get people working together to restore landscapes for the benefit of everyone. PRESENCE is a multi-stakeholder learning network active in forming mutually beneficial and synergistic partnerships for enabling socio-ecological restoration in South Africa. It is presently securing additional investment and collaboration to ensure that its ambitious vision of 'guiding the restoration of living landscapes' remains achievable into the foreseeable future. National and international partners include: governmental departments, universities and research institutes; implementation agencies, NGOs; private consultancies and community-based organization.

PRESENCE aims to be an adaptive learning community which serves as a dynamic platform to support and mainstream existing-and catalyse new- programmes for restoring 'living landscapes' (Ecosystem Services and social and Natural capital) in key areas of the Eastern Cape and Maputaland-Pondoland-Albony hotspot. Also, to achieve this goal, students from all around the world come to the PRESENCE learning village, near the Kouga Damon the border of the Baviaanskloof Mega reserve, and by doing their researches and internships; they accelerate the research process and build the bond between the parties involved.

1.1.2. Who is Living Lands?



Figure 3: logo of the organization Living Lands

Living Lands is a South African foundation (section 21 NPO) for conserving and restoring 'living landscapes'. Living Lands is also the secretariat to the PRESENCE Learning Network.

The goal of the projects driving by Living Lands is to mobilize civil society to create 'living landscapes', that is, building and facilitating locally-driven 'learning networks' to create living landscapes. A living landscape is a variety of healthy ecosystems and land uses and is home to ecological, agricultural, and social ecosystems which are managed so that they can function sustainably.

Living Lands' vision is to build collaborations working on living landscapes. Its mission is to bring synergies and added value to the landscape through: promoting living landscapes; enabling and facilitating social learning/change processes; and mutually beneficial partnerships and participatory networks.

1.1.3. Where did PRESENCE in the Kromme start?

Living Lands did its first project in the Baviaanskloof, called PRESENCE in the Baviaanskloof. This area is dealing with issues around land erosion mainly due to overgrazing but also erosion in the river bed. During seven years, Living Lands with PRESENCE partners had done a lot of studies and implemented a learning network, a multi-stakeholder platform for catalyzing capacity building initiatives. After seven years, a new landscape vision has been signed by the stakeholders to protect and rehabilitate the area; 1 500 ha of spekboom (a pioneer tree species, providing a suitable micro-climate that allows other species to prosper, and serving as a means to sequester carbon) were planted and restoration of the river was started. Also, the farmers are now directly involved in these projects of restoration (Eck, B. van et al., 2010).

The idea of initiating a project in the Kromme area came after getting to know a request of the Gamtoos Irrigation Boards who is working in the area as implementer of Working for Water and Working for Wetlands. After talks with several stakeholders who indicated the challenges in the catchment, and it's potential to create a living landscape. The lesson learn from PRESENCE in the Baviaanskloof could help in this process.

1.1.4 How does Living Lands work with students in its project?

Living Lands host students from all around the world; they do their researches or internship in the studied areas and then accelerate the projects. These students focus on different topics; biophysical assessment; economical assessment; social assessment; payment for ecosystem services; water security. The students doing their researches in the area are an important bound between Living Lands and the stakeholders. Mainly, by doing interviews with the land owners, they allow to keep contact and good communication. Moreover, the information collected during those interviews is used in the progress of the project.

1.2. PRESENTATION OF THE STUDIED AREA: THE UPPER KROMME RIVER CATCHMENT

This background of the study area was compiled using information and text by Alanna Rebelo, MA student Stellenbosch and information from Japie buckle, Provincial Coordinator: Eastern Cape, Working for Wetlands. He is an expert and works in the area for 15 years.

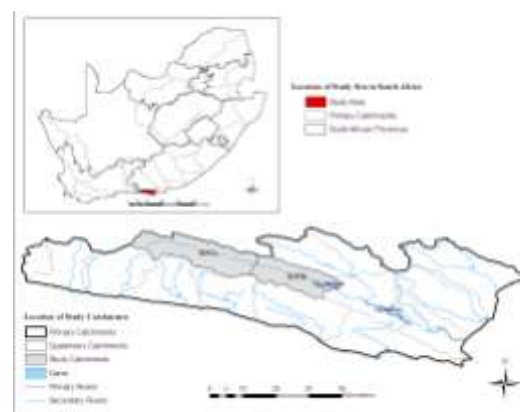


Figure 4: localization of the studied area; the upper Kromme River catchment (Alana Rebelo; 2011)

The Kromme River Catchment is located in the Eastern Cape Province of South Africa, bordered by the Suuranys Mountain range (1050m altitude) on the North and the Tsitsikamma Mountain range (1500m) on the South (Haigh *et al.* 2002, Hosking & du Preez 2002), hence the important rainfalls and regular floods which occurred in the Kromme area (Midgley *et al.* 1994). The river is about 100 km length, the total involved area is about 155 631ha (Mander *et al.* 2010), and, the catchment area is narrow and steep. The total area of the Kromme River Catchment is 155 631 ha (Mander *et al.* 2010). The area is extensively transformed, especially in the lower estuarine reaches where there are a number of tourist resorts. The catchment has been invaded by alien plants. The upper reaches of the river are mostly privately owned and farmed.

The Kromme River area hosts large areas of natural vegetation. Fynbos is the dominant vegetation type, followed by grassland, thicket, renosterveld and forest (Euston-Brown 2006, Mucina & Rutherford 2006, Vlok *et al.* 2008). Fynbos has an overall number of 8000 to 10000 species; around 15 different species grow per square meter. The upper Kromme river catchment presents important quantities of peat (Kotze & Ellery, 2009). The dominant vegetation on the peat beds is palmiet (*P. serratum*) with smaller patches of ferns, grasses, reeds and sedges (Haigh *et al.* 2002). A wetland is

defined as “a land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which in normal circumstances supports or would support vegetation typically adapted to life in saturated soils” (The National Water Act, 1998). A palmiet wetland gets many functions in ecosystem resilience (Klages, N. et al., 2011). It is a natural water purification mechanism, indeed palmiet is adapted to trap sediments; on purifying the water that is, pollutants filter. Wetlands represent rich and unique natural ecosystems, numerous birds, fishes, aquatic plants are dependant of the wetlands. Wetlands are also natural buffers against flood damage. It is the “glue” that keeps the soil together, the buffers against floodwater; for example, bulrushes are useful plant to break the energy of the floods. It is natural sponges or water storage areas; palmiet makes peat, about 0.7 mm per ha each year. Peat is holding about 600/700 liters of water per ha. It stores rainwater and releases it steadily over time.

Two dams are downstream of the Kromme river system, the Churchill dam and the Impofu dam. Both these dams are used for the water supply of Port Elizabeth. The Kromme River catchment is one of the most important sources of fresh water for the Nelson Mandela Metropolis in the Eastern Cape, about 60% of its water supply (Kotze & Ellery, 2009). Furthermore, the wetlands are associated with sustained high quality water yield to dams that supply water to this large urban node.

Over the time, in the Kromme River, the hydrologic scheme has been modified by human activities. Approximately 200 to 250 years ago the first settlers came into the Langkloof. (personal information Japie Buckle, 2011). Farming in the catchment is predominantly large livestock farming, dairy, intensive fruit, and vegetable. Some farmers are taking advantage of ecotourism and a few game and holiday farms have been developed to attract tourists (figure 3 and graph 1). Today, the studied area counts 53 farmers.

There are one towns in the area, Kareedouw.

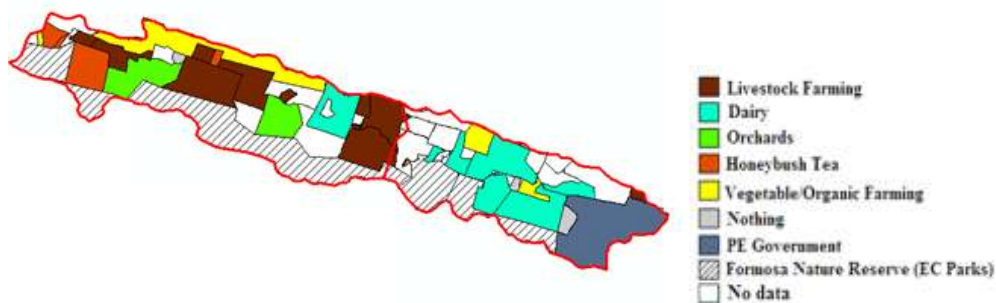
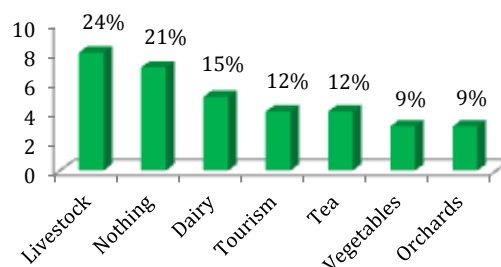
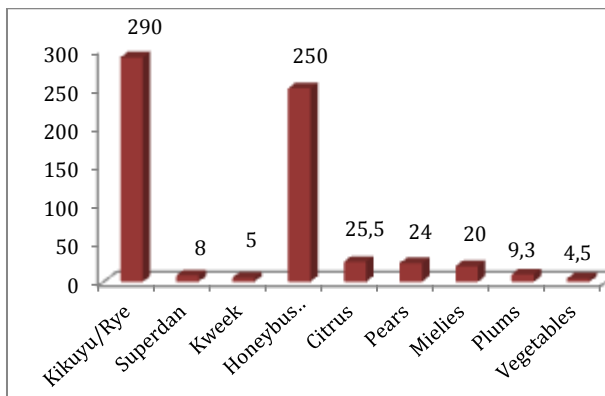


Figure 5: Map of the main farming activities in the upper Kromme River catchment, presentation Alana Rebelo



Graph 1: Main farming activities, n=34; presentation Alana Rebelo



Graph 2: Cultivated areas (ha); presentation Alana Rebelo

According to the research of Alana Rebelo, the total size of the cultivated area is about 636,30 ha. Most of the cultivated areas are kikuyu and rye grass for grazing (290ha that is, 46%); followed by honeybush tea (250ha that is, 39%); and then fruit and vegetables production (83,3ha that is, 13%).

Wetlands are extensive, however, most are heavily degraded or completely transformed (SANParks 2009, Skowno 2008). Peat beds are being heavily affected by agriculture, ploughing of the wetlands, the removal of palmiet, water abstraction, draining, donga and head-cut erosion, the construction of dams, roads, railway lines and fences, alien plant invasion and peat fires (Haigh *et al.* 2002). The farmers in the area usually plough the fynbos and grow grasses for their cattle. Fynbos burns naturally every 15 to 20 years. But the cattle prefer the first stages of Fynbos, which are grasslike species. Therefore the farmers burn the Fynbos in shorter cycle than the natural one (information from Japie Buckle, 2011).

The road through the Kromme River Catchment, what used to be the main road to Cape Town, caused a lot of damage to the wetland systems, it changed the hydrologic scheme. For example due to places where the water had to be crossed, it caused headcuts. Bridges cause a lot of damage to the river system, because a bridge is always built at the most narrow place in the river system. In the middle of the narrow river, they built a pillar. The river cannot become any broader, so it becomes deeper (information Japie Buckle, 2011).

In the area there are especially lots of Alien invasive trees from Australia, because the geology and the climate are quite similar. The biggest pest in the area is *Acacia menziesii*, locally named Black wattle. Most of the exotic species were introduced to stabilize the sands, because the people who came to South Africa thought it was not natural to move. The black wattle was introduced around 200 years ago, because in the bark fibers it has high tannin levels. Black wattle grows along riversides because it is used to the Australian climate, where more rainfall occurs. This species grows fast, mainly because it does not have natural enemies. It often forms dense stands, maintains a high green leaf area throughout the year, and frequently replaces seasonally dormant grasslands and fynbos, through its particularly efficient dispersion system. It makes millions of seeds and stores it into the ground; all these seeds have a thick hull and can survive up to 80-100 years. Black wattle is good firewood and also it makes a very good source for charcoal. In the past, there was a charcoal factory in the area, but this company and it is no longer in use. It is widely admitted that Black wattles use a lot of water by growing in such stand (Dye, P. and Jarman, C., 2004). It sucks up a lot of water, about 32 kiloliters per day per hectare; this is much more than the natural vegetation that should grow in the area. Because it is growing on the riverside, where the slopes are mostly steep and it is difficult to reach to clear.

All these changes compromise the water security (the quantity and the quality of the water) for the water users, dependant of the Kromme River system. For instance, recently, in July 2012,

flood occurred and a lot of damages are visible: bridges have been washed away, erosion in the river bed (about 20 meters long and 3 meters deep at one point), and then huge quantities of sand have been transported by the river flow and deposited before the different spots where wetlands remained and certainly in the wetlands themselves.

Governmental agencies have started programs to restore the area. Working for Water (DEA) has starting, since 1996, to clear the alien plants, Black wattles. This clearing revealed the extent of the damage to the wetlands, which included extensive in-stream gullyng (especially in the peat basins) and widespread river bank erosion. Then, in 2000, Working for Wetland began mechanical restoration of the Kromme River.

2. AIM OF STUDY ON THE ESTABLISHMENT OF A WUA

The workshops of the Project PRESENCE in the Kromme brought the conclusion that a forum is probably a good way in the area to respond to the communication issues. And the last workshop involving the different stakeholders was mainly about the structure of the forum; that is, what should be its size, functions, structure; who should be involved. In addition to this, it has been related that DWA wants to establish WUAs; then the idea of looking at what a WUA is, and if it is possible to transform the forum into a WUA in the future.

The aim of this research is: *“study if a WUA is a useful tool for the improvement of the communication on catchment issues in the upper kromme and the steps on how implementing a successful WUA in the upper Kromme catchment.”*

The research has primarily focused on general research on WUA. That is, what is a WUA, its functions, its roles; what is the law in South Africa around the WUA. That resulted in the aim for this research with the following research’s questions:

1. What do land users/owners think about the forum?
2. What is a WUA and can a WUA be implemented in the upper Kromme catchment?
3. What do farmers think about the idea of a WUA?
4. What do the other stakeholders think about having a forum or a WUA in the upper Kromme?
5. What is needed to do to insure that the communication platform/forum is in line with implementing a WUA?

3. METHODS

This study started with the rules, regulation and policies of WUA in South Africa and looked at case studies in other countries where there is more experience to establish WUA, this identified the potential advantages for the local actors, the potential risks which can lead a WUA to collapse; how to prevent them; and to identify the main steps of establishing a WUA.

A second phase of my research was based on interviews with the landowners, the purpose was to hear their opinion towards the forum and its evolution; the questions were the following :

1) what are your thought about this idea of developing a catchment forum?

- 2) What should be the functions of such a forum?
- 3) According to your point of view, what are the advantages of a catchment forum? And what are the risks? What would be its strength and weakness?
- 4) According to your point of view, how do you think the catchment forum should evolve in the future?
- 5) If a kind of farmers’ association or a WUA would be developed in the Kromme, would you like to be a part of it? What should be its functions?
- 6) Would you be interested in joining the forum/association?
- 7) Would you like to occupy a main role?

- 8) What kind of topics, do you think, should be discussed at the forum?
 9) What would be the best time for you to have this meeting? The best period, day, and time?"

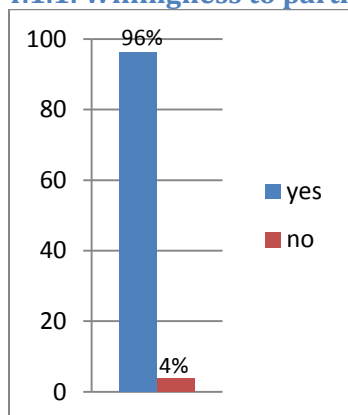
Beside the landowners the several interviews with the other stakeholders were held: representatives of NMBMM, WfWater, WfWetlands and DWA, have been done, in order to hear their opinion and thought about the forum and the idea of establishing a WUA in the upper Kromme.

We interviewed Japie Buckle, Coordinator of WfWetlands in the Eastern Cape, who is working in the area for 15 years. He already participated to most of the workshops organized by PRESENE in the Kromme; Michael Kawa, from the department of Environmental Affairs, he is in charge of the whole Working for Water program in the Eastern Cape. Pierre Joubert is the CEO of the Gamtoos Irrigation Board (GIB), based in Patensie, and which implements the WfWater program in the area. GIB is in pass of becoming a WUA by law. We interviewed Eric Roux, the manager of the Churchill Dam; Shanon Barkes, Technician water; engineer, Paul du Plessis, water treatment officer; Stuart Ferguson, pipeline dam management bulk supply side; and Stan Groenewold, Stan director water supply, as representatives of NMBM. Finally we also interviewed two representatives of the Department of Water Affairs: Mesuli Sitole, Principal Community Development Officer, he is one of the responsible for the establishment of WUA and CMA from the Department of Water Affairs.; and Gibson Gumede, regional officer Eastern Cape, water resources management, he is responsible of the water rights registration and licensing process. The interviews with Mesuli Sitole and Pierre Joubert were more developed; precise questions about the structure, the functions, and the process of establishment were asked.

4. RESULTS

4.1. Results on the project of developing a forum in the upper Kromme River catchment

4.1.1. Willingness to participate



Graph 3: Landowners' willingness to participate to the forum, n=26

The interviews with the landowners were a way to know what the landowners were thinking about the outcomes from the last workshop as not all of them assisted to this meeting. Four people declared themselves interested in playing a role in the forum, be part of the decision team.

4.1.2. Functions of the forum

The landowners interviewed gave their opinion towards the functions of the forum. Three categories of functions can be identified. The forum should first allow landowners to be involved in

the management of the area; that is, in the water management, the alien clearing plan, the erosion control. The forum should also be a tool to diffuse knowledge and information in order to create awareness, educate landowners around the issues in the area. Finally, the forum should serve to improve the communication and the cooperation within the landowners committee and the government and other stakeholders.

According to the interviews with the other stakeholders, the communication is the main function of the forum. Eric Roux, the manager of the Churchill Dam said the forum is a good tool to share knowledge, experience and ideas in order to work together to improve the management of the area. The four representatives of NMBM declared that they do see the forum as a good idea to improve the communication with the other stakeholders to make a regulation for the whole catchment area. Japie Buckle (WfWetlands) and Michael Kawa (WfWater) both declared that the forum may facilitate their projects. Then, the forum can diffuse the information about the regulation around the wetlands, that is, what are the practices allowed in the wetlands; and the regulation on the cleared lands, that is, for instance if this land used to be a wetland, it should be rehabilitated and not turn into a pasture. The forum is useful to build trust and understanding between the role players and it is a place where the landowners and the other stakeholders can bring problems up front and discuss them.

4.1.3. Topics that landowners want to discuss during the forum

To the question, “what kind of topics would you like to discuss at this forum?”, the 26 landowners interviewed gave between 1 to 4 topics, only one landowner did not give any topic. If we look only at the first topic, the two main topics are: first, the water management, and alien clearing. The topic around water management includes the control and monitor of landowners’ water consumption, get information about water right registration, about dams, the waste of water, and the water conservation measures.

The topic about alien vegetation includes getting information about the alien vegetation, getting advices how to deal with it as a landowner, and discussing about WfWater actions.

If we consider all the topics given by the landowners, we can distinguish two categories of topics. The first one which has been the more declared by the landowners is around the management of the area. This includes, per order of importance (frequencies of declaration), the issues in the area such as water, alien vegetation, erosion, fires and wetlands; the activities going on to manage the area: WfWater and WfWetlands; and the landowners’ responsibilities towards the cleared lands and wetlands. The second category is about the forum itself, to determine its final purpose, goals, focus in order to give a meaning to this forum; and also to discuss on how they are going to do it. Then, two emerging farmers wanted to discuss about managing a farm with other farmers.

4.1.4. The advantages, disadvantages and risks of having a forum

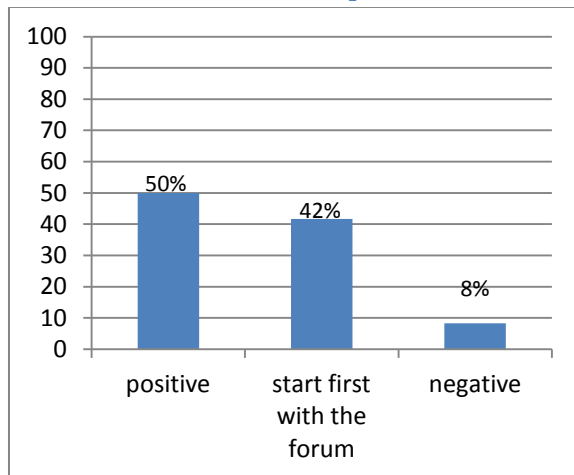
During the interviews, a question was about the advantages that the forum may bring to the landowners. The main advantage coming out of the interviews is that the forum can facilitate the relationship between landowners by getting to know each other, improving the communication and facilitating the resolution of conflicts. The second advantage to have a forum is to give access to knowledge by learning from each other, by sharing each other knowledge. Finally, the last advantage identified is the fact that the forum can empower the landowners: through the forum, they will share objectives, goals and the collective actions are more efficient than individual actions.

The risks land users identified are first of all, the differences among the landowners; that is landowners have different origins, different activities, different issues and priorities; then getting them together may be difficult. Another main risk identified is that the forum may be inactive, that is, the forum may be only a group talking without taking any initiatives or actions

The different stakeholders agree on the fact that the forum is a good tool to improve the communication among the stakeholders and may facilitate the diffusion of the information. On the other hand, according to the point of view of the representatives of NMBM, as the forum is not an official body, it cannot achieve an agreement on the water resource management. Gibson Gumede added that at the end a WUA is necessary if the members of the forum want to build some projects.

4.2. Results on the possible evolution of the forum into a WUA

4.2.1. The stakeholders' opinion towards the evolution of the forum



Graph 4: Landowners' opinion towards the evolution of the forum into an association, n=24

The outcome of the interviews on how landowners foresee the evolution of the forum is that 42% of the landowners interviewed did not want to talk about the evolution of the forum into an association or a WUA yet. They considered that the focus should be first on the form; that is, they want the forum to become a reality before talking about its future evolution. 50% of the landowners (12 of them) were positive towards the idea of the forum evolution into an association.

The coordinator of WfWetlands, the responsible of the WfWater program and the CEO of GIB, all declared that a WUA will definitely improve the communication among the stakeholders. According to the representatives of NMBMM, a WUA is the better solution than a forum because it is easier to agree on an agreement with an official body.

4.4.2. The functions of the potential WUA

To the 12 farmers who were willing to discuss about having an association in the area in the future, we asked them what should be the functions of a WUA. 11 declared themselves around the WUA functions. First, the WUA is seen as an institution to deal with water management; notably to involve landowners in the decision process on the amount of the water tax, in the water right registration or licensing process, and to look after their water rights. Then, the WUA may have for function to deal with the management of the area, that is, aliens, erosion, wetlands; to preserve the catchment area. Finally, the WUA will facilitate the communication and cooperation with the government, in order to work together.

According to the representatives from NMBMM, the WUA should regulate the water use allocation and implement the law.

The WUA is in charge of the water management and can be involved in the WfWater/Wetlands programs, it will manage the extra of water available from these actions Finally, a WUA will facilitate the communication between the landowners and the government.

5. CONTEXT ON THE WATER RESOURCES AND CHARACTERISTICS OF A WUA

5.1. THE LAW AROUND WATER RESOURCES

The National Water Act of 1998 promotes equity, sustainability, representing, water users' registration and licensing, and the emergence of water rights' markets (Perret, 2002). The new law made water resources a national asset whereby the State is regarded its custodian (van Koppen and Jha, 2005; Waalewijn *et al.*, 2005). Furthermore, the NWA of 1998 specifies clearly, that water is essentially a tool to move society towards social, environmental justice and poverty reduction, and its stated aim is to redress race and gender inequities from the past (van Koppen and Jha, 2005).

The implementation of the NWA of 1998 is envisioned to happen through participation of all the water users and stakeholders by creating Catchment Management Agencies (CMA) and Water Users Associations (WUA).



Figure 6: Scheme of the three levels of institutions dealing with water resource management (de la Harpe, J. et al.)

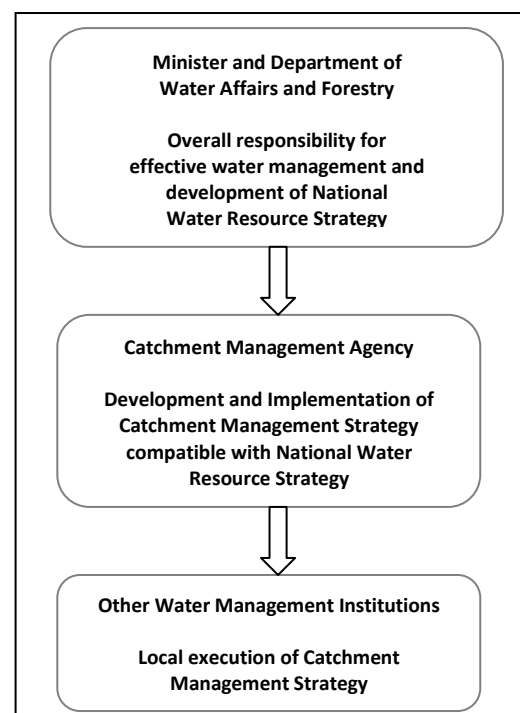


Figure 7: Scheme of the hierarchy of Water Management Institutions

A CMA is responsible for water resources management over an entire Water Management Area. It has 5 initial functions that are to investigate and advise on the protection, use, development, conservation, management and control of the water resources in its water management area; to promote co-ordination between implementation of its catchment management strategy with implementation of water services development plans by water services authorities (municipalities); to develop a catchment management strategy for its water management area; to co-ordinate the activities of water users and water management institutions within its water management area ; and to promote community participation in the protection, use, development, conservation, management and control of the water resources in its water management area (de la Harpe, year unknown).

A CMA has a Governing Board representative of stakeholders from this wide region. In contrast, a WUA will represent a much smaller scope of interest, usually a sector of water users in a confined geographical area. A CMA will prepare a Catchment Management Strategy to address water resource issues over the whole Water Management Area. The Catchment Management Strategy will

provide guidance to the Minister as to whether specific WUAs should be established and what functions they should be authorised to carry out within the Water Management Area. In turn, WUAs will provide a local institutional structure through which the Catchment Management Strategy can be implemented at a local level. (DWAF, Unkown year, report: Establishing a WUA)

The government has started to implement water reforms, among others, the Water Allocation Reform (WAR) program (DWAF, 2005). The principle of this reform is based on compulsory licensing, which is a process where all the water has been putting back into a common “bucket”; and then divide it up more fairly in the best interests of all water users (including all the activities, and the environment) (Liebrand, 2008). This reform is implementing through a process of water uses registration and allocation of water rights. The goal is to control and monitor the water consumption; and to deal more efficiently with water scarcity problems.

According to Gibson Gudeme, responsible of the water management in the whole Eastern Cape, in the upper Kromme, most of the land users had been registered; also it is known today that too much water has been registered compared to the water available in the river; meaning that the river is under water stress. Thus, the Department of Water Affairs has to redistribute the water allocation. Today, no more registration is allowed and the DWA is going to verify all the water registration in the Kromme River Catchment in the coming two years. A consultant will check if the landowners are using the amount of water they have registered for and if their water rights are lawful. A water right is lawful if this water use started under the previous act of 1956; in the case of a registration done in 2000 but that the farmer can prove (via satellite images or electricity bill) that this use was taking place in two years before the 1st of October, 1998, then this water right is also lawful. Then, the DWA may have the right to take away some water rights from the farmers if their registration is not correct. After this process of verification, the DWA will distribute the water licenses.

According to law, the people have priority on agricultural activities, meaning that if more water is needed by the population of NMBMM, the government might require water rights from the landowners in the upper Kromme catchment. If some lawful water rights are taking away that generates losses of income for the farmer, the government will compensate the water right owner.

Next to the process of licensing, the government is on the way to implement the different water management bodies that are CMA and WUA. The idea is to delegate certain functions from the State to the local scales. The goal is to establish one CMA in each of the 19 districts designated concerning the water resource (see figure 3). According to a governmental agent, the DWA is going to introduce the concept of WUA to the landowners when they will come in the area to verify the water consumption and rights (minutes Gibson, M. (2012-07-18)). Then, the establishment of a WUA in the upper Kromme catchment area appears necessary as the government is planning to establish one.

5.2. WHAT IS A WUA?

5.2.1. Definition of a WUA

A Water Users Association (WUA) is the third level of water resource management. It is a co-operative association of individual water users who wish to undertake water-related activities for their mutual benefit. Then, the members will pool their financial, technical, material, and human resources for the operation and maintenance of a water system. A water user association is an institution established in response to the aspirations of its members (DWAF, 2002). A WUA can be created where there are water resources and particularly where there are dams or irrigation activities (minutes Mesuli, S. (2012-07-17)).

5.2.2. The structure of a WUA

There are two distinct types of WUAs, a sector based WUA and a multi-sector based WUA (de la Harpe J. et al):

- A sector based WUA, which acts in the interests and on behalf of a group of similar users; for example, a group of irrigation farmers;
- A multi-sector based WUA, which acts in the interests and on behalf of a combination of different water users, such as irrigation farmers, recreational sectors, factories, etc.

Then, a WUA is defined by its size. The size a WUA includes the geographic area, and the number of members. The number of members in a WUA is a critic question because it should not be too low to permit to accomplish the designated tasks by collective action, but it should also not be too large because it makes difficult for the farmers to meet, increases the risk of conflict within the group, and can make the organizational and managerial tasks more complex. The size of the command area depends on many criteria from the institution itself but also from the area. According to the DWA officer, the size of the WUA should be up to the catchment borders, where there is a dam for irrigation purpose. But in the literature, it is said that we need to have a look at the topography, the technology involved in the water supply system, the socioeconomic variables, such as the average farm size in the system, etc. The farmers themselves are best able to determine the exact boundaries of actual units (DWAF, 2002).

A WUA is a structure in itself. A WUA may have a general assembly, an executive board, a manager and the operation, maintenance, administrative and financial departments. It is important to know that in a search to eradicate the effects of apartheid, it is clear in the NWA (1998) that the establishment of WUA has to play a role to promote equity through consultation and empowerment of local stakeholders. A WUA may represent all the different social class and genders to serve everybody's interests in order to contribute to redress the results of past racial and gender discrimination. A WUA may also promoting equitable access to water, facilitating social and economic development. Therefore, WUA presents a social challenge that goes beyond the strict confines of water management and contributes to rural integration in a broad sense (DWAF, 2002).

Then, the board of a WUA have to include the representatives of the water users, emerging farmers and commercial farmers; a representative of DWA and other stakeholders according to the context of the area. For instance, the board of GIB is composed of 2 farmers representatives per sub-scheme, that is, 6 representatives in total, a representative of DWA, the CEO of GIB and a representative of NMBMM (minutes Joubert, P. (2012-06-28)).

Next to the board, in the structure, we should find personal with background such as, water engineer, environmentalist, responsible of the human resources, etc. The DWA is here to assist and find these people (minutes Mesuli, S. (2012-07-17)).

5.2.3. Functions of a WUA

According to the NWA of 1998, WUAs, as local institutions, best respond to the local management issues and implement the water reforms (DWAF, 2002). Then, a WUA receives some power and functions from the CMA and the DWA in order to first of all manage water resources in its area (see figure 8). Its actions will impact upon the overall quantity and quality of the water resources in the catchment in which they are located, but also, those of downstream people.

A WUA is responsible of the water allocation. It has to investigate and record the quantity of water at different levels of flow in a watercourse; the times when; and the places where water may be used by any person entitled to use water from a water resources. It has to supervise and regulate the distribution and use of water from a water resource according to the relevant water use entitlements, by erecting and maintaining devices for measuring and dividing; or controlling the diversion of the flow of water. It is in order to protect water resources from waste, unlawful use and act that reduce the quantity and quality of water (de la Harpe, year unknown).

A WUA has to control, operate and maintain waterworks considered to be necessary for draining land; and supplying water to land for irrigation or other purposes. It has to manage the pipes, to replace it if there is any damage or if they are getting old. It may give advices to its members in order to improve their irrigation systems to limit waste (DWAF, 2000; minutes Joubert, P. (2012-06-28)).

A WUA can regulate the flow of any watercourse by reducing the risks of damage to the land in the event of floods; and changing a water course back to its previous course where it has been altered through natural causes (de la Harpe, year unknown).

There is a serious shortage of information on irrigation and irrigation farming taking place in South Africa, on the crops that are grown, where they are grown, how much water each crop requires in various localities and the quality of water they need, etc. Thus, this information shortage will have to be adequately addressed by the WUAs in collaboration with CMAs, DWA and DoA (DWAF, 2000).

More generally, a WUA is responsible of the protection and conservation of the catchment area where it is established. Furthermore, a WUA may also be characterized by others functions according to its own constitution, that is, according to the characteristics of the area.



Figure 8: Delegation of power and functions to WUAs, source :de la Harpe, year unknown

6. IMPLICATION FOR THE POTENTIAL WUA IN THE UPPER KROMME CATCHMENT

6.1. THE POTENTIAL STRUCTURE OF THE WUA IN THE UPPER KROMME CATCHMENT

In our study area, the focus of the project is on the upper Kromme catchment, that is, from the source of the Kromme River down to the Churchill dam. But the size of the WUA might also include the downstream part. The stakeholders have discussed this point during the workshop in May (minutes of the workshop the 2nd of May, 2012), and the conclusion was that the focus should be first on the upper Kromme catchment and might be extended to the whole Kromme River catchment in the future. The size of the WUA is extremely important because it has a big impact on its capacities in term of funds and thus in terms of objectives that are possible to achieve. The upper Kromme River catchment counts only around 50 landowners, than the size of the area might be too small to insure the financial viability of the WUA, as the main source of funds for a WUA is the water tax that its members are paying.

Related to the Kromme catchment area context, the activities using water are only farming activities and domestic uses. Then, the WUA in this area would be agricultural activities based WUA; that is, a one sector-based WUA.

According to the information from Pierre Joubert, CEO of GIB which on the process to become a WUA, the board of GIB is composed of himself, the representatives of the farmers, that is, 2 representatives per scheme of the irrigation system; 6 farmers' representatives in total. NMBM is in the board, as well as a representative of the DWA. According to the feedback from interviews with the landowners, about 17 landowners declared some risks about the forum and for 8 of them, that is

47% of them, the differences among the landowners (different origins, activities, issues, priorities) is the biggest one. It may make getting together the landowners difficult. Indeed, contrary to the Kouga catchment area where the main farming activity is fruit production (minutes Pierre Joubert (2012-06-28)); in the upper Kromme, activities are various such as dairy farm, beef cattle, sheep, fruit farm and honey bush tea production (cf. figure 5). Then, it also means that the water is not used for the same purpose among the landowners and competition around the water resource uses might appear with misunderstanding of each other activities. Then, it might be interesting and relevant in this case, to form farming activity groups which will be represented in the board. Each group would elect its representative to the board.

As seen in the previous section, regarding the NWA of 1998, all the races and gender have to be represented. Then, in the board you should also have representative(s) for the emerging farmers and representative(s) for the commercial farmers (minutes Mesuli, S. (2012-07-17)). Then the emerging farmers present in the upper Kromme: Drie Krone, Gyptjiesgat Farm and Kransbos Trust; must be represented in the WUA. Also, according to law, they must be involved in the board of the WUA; that is, a representative from the trust must be present in the board.

6.2. POTENTIAL FUNCTIONS FOR A WUA IN THE UPPER KROMME CATCHMENT, RELATED TO THE ISSUES OF THE STUDY AREA.

In the upper Kromme catchment, the human activities and invasion of alien species have an impact on the hydrologic scheme and the main riverbed is currently under accelerated erosion process (cf. section 1.2.). These issues endanger the water availability and quality. It is acknowledge that Black wattle is using a lot of water, thus it represents a threat towards the water quantity (cf. section 1.2.). The accelerated erosion process is threatening the quality of the water.

In term of water availability, removing Black wattle is necessary; and the government has started project, Working for Water, to clear the aliens. According to the representative of WfWater in the Eastern Cape, and the representatives of DWA, a WUA can be involved in the clearing project because the main function of a WUA is to manage the water, then after clearing the WUA is in charge of the extra water available. Besides, a WUA can participate to the clearing process by providing some background information about the particularities of the area or by supporting financially (minutes Michael Kawa ((2012-07-10)). As the potential WUA in the upper Kromme may not have all the skills to deal directly with the clearing program, it can work in cooperation with the Gamtoos Irrigation Board which is the implementing agent of the WfWater program in the Kromme River catchment. Also, a WUA can facilitate the following up of the clearing by diffusing the information about landowners responsibilities, giving them access to poison and checking their actions (minutes Kawa, M. (2012-07-10)). It may also facilitate the regulation towards the allowed uses of the cleared lands, in cooperation with DoA and DEA. A WUA may accelerate the process of rehabilitation by drawing efficiently action plans.

The WUA in the upper Kromme catchment can also cope with the erosion control, as this is connected to the water quality. Then, it can be included in its functions. As the area is under an accelerated process of natural erosion mainly due to changes in land uses; the control of erosion and the rehabilitation of wetlands are connected (Kotze & Ellery, 2009). A WUA can, then, be involved in the wetland rehabilitation program and erosion control. According to the provincial coordinator of WfWetlands in the Eastern Cape, the WUA may first help by facilitating communication with Working for Wetland; making local people awarded of the benefits of wetlands and diffusing the strategy plan.

The WUA can also be a tool to enforce changes of the agricultural practices. Indeed, the accelerated erosion is also due to inappropriate farming practises. Burning too frequently Fynbos, establishing pastures near the river bed imply that the land cover is too less, with heavy rain, the top soil can easily be washed away (information Japie Buckle; Le maire et al., 2006). Moreover, ploughing

near the river bed implies that the different layers of soil are mixed, implying the soil is disturbed and weakened; it can be more easily washing away. Moreover, by ploughing the soil is actually losing its fertility and its water storage capacity in the long term. The soil is becoming dryer, as it has been related by some farmers during the interviews. Indeed, even without any withdrawal for irrigation, agriculture by locally modifying the vegetation coverage rate of soil is directly involved in local or regional water balances, and therefore has an impact on the renewal of water resources that may be available for all human activities (Le maire et al., 2006). Therefore, studies around the impact of land use patterns from agriculture on groundwater recharge and management of water resources should be done. Then, appropriate advices can be diffused such as what is the best type of vegetation cover to plant in order to limit water loss from the vegetation, what are the farming practises to avoid, what are those which are more appropriate, etc.

6.3. WHAT ARE THE BENEFITS FOR THE WUA MEMBERS?

In the literature it is related that to insure a sustainable WUA, it has to bring sufficient benefits to its members. Indeed, the benefits must be higher than the costs; otherwise, the members are just going to lose their motivations (World Bank Office, 2007).

According to the officer of DWA responsible of the establishment of WUAs and CMF in the Eastern Cape, the main advantage for the local actors is that “the local people have the opportunity to take control of the water resource themselves instead of removing this responsibility to another body”. The main advantage related in the literature, that is, the example of the Colorado River Water Users Association in the USA (CRWUA, 2011); the case of Indian WUAs (Naik G. & Kalro A.H., 1998), the WUAs in the SouthEastern Europe (World Bank Office, 2007) is the improvement of the water resource management by the local structure. Indeed, the government already agreed in its NWA of 1998 by developing 3 levels of institutions to manage water resources, that a local institution is more able to response to the local needs because they have a better understanding of the characteristics of the area, that is, the landscape, the hydrology, the weather, the land and water uses, etc.

The advantage to get a WUA in the upper Kromme River catchment may be the improvement of the communication between local people and governmental agencies. Indeed, by getting together as a group, and having representatives speaking for a big group; the landowners get a stronger voice. Then, the government can really take what will be reported into account because it will be the opinion of an entire group and not just one individual. This creates a better understanding of local actors and the government actions relating to water supply management. This may lead to an enhanced satisfaction of the service provided and received by each party (Garces-Restrepo C. et al., 2007). Then, the WUAs must be interfaces between the state and society in order to facilitate the communication from up to below and *vice versa*. Then, a WUA may facilitate the diffusion of the information and the implementation of the reforms (DWAF, 2000). And a WUA may report the difficulties, issues and opinion of the local scale to the DWA (minutes Mesuli, S. and Gibson, G. (2012-07-17)). Also, the Kromme WUA would increase the landowners involvement in what is happening in their area; that is, the alien clearing project implemented by WfWater and in the wetland rehabilitation project implementing by WfWetlands. As a group and as an official body, the landowners may have a stronger voice to push the municipalities to get involved in the catchment area. Moreover, it may also increase the landowners’ involvement in the decision making process.

7. ESTABLISHMENT/ADVICES/RECOMMENDATIONS

7.1. SOME RISKS TO AVOID TO PREVENT THE COLLAPSING OF A WUA

According to the French Agriculture Academy (GARIN et al., 2002; Tue Kell Nielsen, 2004), one of the key success factors to reach a sustainable WUA is to get well defined base units (geographic limits, number of members), using hydraulic boundary; well defined functions and roles;

collective decisions making; well defined rules. In short, transparency and participatory are required. And, another key success factor is to get adequate managerial and business skills available as required with each decision-making body. Furthermore, according to the report of Michael M. Cernea and Ruth Meinzen-Dick (1991), a WUA may fail, or become inactive due to: insufficient involvement in the decisions about water allocation and distribution; underestimation of the responsibilities, so that the members can develop feeling of failure; or the reverse, not enough responsibilities, and the members get frustrated. The farmers must view the WUA as their own organization.

As related in the World Bank report (2007), the development of effective WUAs is also based on other fundamental principals, that a WUA must measure water at intake, collect irrigation fee from members and pay directly to supplier based on volume of water receive. This is more related to the financial aspect of a WUA.

Then, according to the literature, the social capital and the financial viability are the two relevant factors for the sustainability of a WUA.

7.2. THE FORUM

In the literature it is related that it is preferable to have a locally strong based such as a farmer association, a forum, etc. Indeed, this may limit the risk of intern conflicts, due to bad relationships, in the future WUA (Cernea, M. & Meinzen-Dick, R., 1991; Smit, T., 2003). However, the establishment and the maintaining of a forum may also be complex.

7.2.1. Advices for the first step of the forum

The aims of the first Forum meeting are first to develop “a future desired state” and secondly, “to develop actions to remedy the issues that were identified at the first meetings”. Developing a draft about the objectives and actions, the participants want to achieve is important to keep them involved and active (Smit, 2003).

Another step in this first forum is to begin the formation of its structure, that is, to elect representatives and a good secretary. The representatives will be charged to organize, to choose the date for the next meeting. It is essential that the representatives meet outside of the forum meeting, they have to take their responsibilities towards the forum organization; that is, decision of the topics discuss, if they want to invite representatives from outside, etc. Having a secretary is a priority to give regular feedback to the Forum members (Smit, 2003).

According to the interviews, the feedback of the workshop in May, the participants of the forum would be the landowners, the representatives of WfWater, WfWetlands, DWA, and NMBM. The group of landowners need to be well structured before, to avoid the discussions going nowhere when the other stakeholders will attend to the forum. Furthermore, if the group of landowners is not well defined, the other stakeholders may not want anymore to attend to the forum (see figure9). Therefore, the group of the landowners may get together to discuss their issues, they can elect their representatives to the forum with all the stakeholders. A secretary is important to diffuse the information been discussed during the different meeting to allow those who cannot assist to the meeting to still be involved and to avoid the repetition the next meeting of some points already discussed. It is the same for the sub catchment forum, a president and a good secretary are necessary to keep the forum going well.

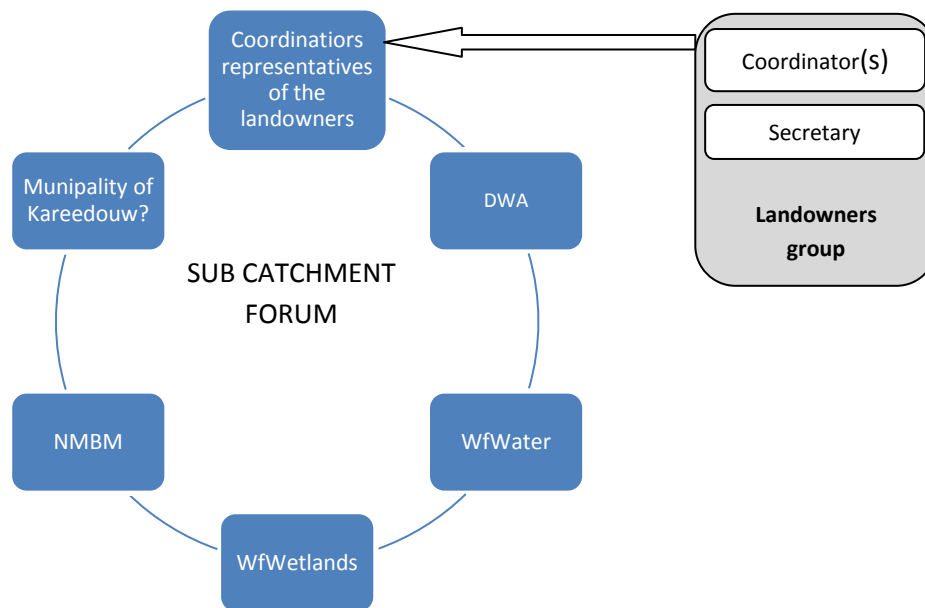


Figure 9: Potential structure of the sub catchment forum in the upper Kromme River catchment

The focus of the potential forum in the study area would be sustainable management of the area, as it has been identified during the workshop in May and during the interviews with the landowners who wanted to discuss many topics connected to this theme.

According to the answers of the different stakeholders, the functions of a forum are mainly connected to the improvement of the social capital, that is, the improvement of the relationship, the communication, the understanding of its members, and the diffusion of the information and knowledge about the issues and programs going on the area. The first objective of developing a forum, related to the upper Kromme social context, is to build bonds and trust among the landowners before trying to establish an official structure. The forum will be a way to debate about issues land users are dealing with, create awareness, diffuse information; and may also foster a spirit of joint and participative decision making.

7.2.2. Risks and weakness of a forum; how to prevent it

One of the main risks for a forum to collapse is its community members. The forum may become inactive because no plans about the targets to achieve or projects are coming out of it, and the members may just lose their motivation. Indeed, as a forum is on a voluntary based, a forum should develop action plans and projects because "For a successful long term operation of the Forum it is very important that new projects are initiated and more members will active and responsible for Forum outcomes." (Smit, 2003). Indeed, building a project with the local people if knowledge and background are shared will definitely push them to get more involved in it.

However, a forum may collapse for other reasons than becoming inactive. It is important to avoid the apparition of a more important group because it is involved in a project and not the others. That will create a misbalance and frustration within the community. On the other hand, increasing the activities demand more checks and balances as well as more formal and informal rules. The success then, will depend on the available leadership capacities amongst the Forum members.

Another problem is the lack of commitment of the counsellors or municipalities' representatives is a real problem. The Forum members need to prioritise themselves in the eye of the counsellors.

It is important to remember that a forum still not an official body, then its actions can be relatively minim. Indeed, the forum is mainly a communication tool. And as it had been said by the representatives of DWA, of NMBMM and by the CEO of GIB, it might be difficult to have an

agreement coming out of a forum. Then, when the bases are in place, discussions about the pros and cons of implementing a WUA should take place. And the first steps concerning the characteristics of the WUA should be discussed via this forum.

7.2.3. From a forum to the establishment of a WUA

According to the DWAF report (2002), it is only after a period of collective vision building it is possible for a community to formulate a set of goals, institutional roles and responsibilities for the WUA that all parties can agree upon. Indeed, according to the interviews done with the land owners, most of them just want to see the forum appearing and then, it is working, talking about having an association or WUA will be discussed.

If the members of the forum decide then to create a WUA, they should discuss, through the forum, how the WUA should look like. The forum should be used as a vehicle to provide to the members, full information about different institutional arrangements and options, their roles and functions as well as their need in terms of government. It is very important that the future members of the WUA understand perfectly their roles and functions. It has been recorded as a main issue in different experiences of establishing a WUA (Smit, 2003; Nielsen, 2004). A forum is considered as a good tool to make sure the roles are understood (Smit, 2003).

As soon as the group decides to create a WUA, the DWA has to be involved, it is there to advice. The contact for the implementation process is Mesuli Sitole as well as Siziwe Blie.

The process to establish a WUA is the following one (minutes Mesuli, S. (2012-07-17); DWAF, 2002):

1. DWA consults the community, and explain the national water act, give information about the functioning of a WUA, the support that the institution will get including financial and capacity building.
2. Then, if the community and DWA agree on these general points, it is publish in the news
3. DWA consult all the water users: municipalities, farmers, etc; explain and encourage them to elect representatives in the structure.
4. Together with the structure, DWA is making sure that they got the capacities, the skills to lead a WUA; if it is not the case, DWA can facilitate the training to the different skills necessary (management and business skills, keep-booking skills, marketing skills, etc.)
5. Public event should be organized. The idea is to have an interim committee which role is to draw up a constitution. They used the draft version from the DWA. Every WUA is different and you have to adapt it and create your own constitution This is an opportunity for the public to ask questions; and the points discussed should be taken into account to review the constitution
6. Then review, real constitution
7. Then write a proposal to the Minister of water affairs, to allow/approve this structure to establish a WUA in this area
8. Put on the newspaper when it is official.
9. Final stage: another public event should be organized to tell the public that the WUA application has been approved, they can start their actions, elect representatives to represent the structure: financial function, presidential function, etc.

7.2.4 FINANCIAL VIABILITY

“The case of a WUA in Morocco shows how the lack of funds delayed unnecessarily the process of WUAs creation and hampered adequate maintenance. This also demonstrates the need for a well-thought, properly funded capacity-building plan to be carried out in order to put farmers organizations in a position in which they can on their own take care of the long-term needs of their irrigation schemes.” (Garces-Restrepo C. et al.,2007)

The institutional viability of WUAs is strongly related to their financial viability. A new WUA should try to forecast the costs and benefits that will occur to avoid financial collapse and thus, insure the viability of the institution.

The establishment of a WUA is only possible if it has the ability to fund itself, that is, if members are able to pay for the administrative costs of the WUA as well as the operation and maintenance costs of any capital works associated with the WUA. A WUA is therefore normally funded through charges levied on its members called 'water use charges'. These water fees should be voted by general assembly, and should vary from year to year (World Bank Office, 2007). To get an idea of these charges, it is required to have a look to the water price according to the governmental based line, the actual volume of water, the cost of the technology involved in the water management system, if its use requires particular skills or if farmers can use it by their one, if its maintenance is simple or requires particular skills (de la Harpe J. et al; World Bank Office, 2007). The operational and maintenance costs would have to increase after transfer of functions from the government to the local institution at least for a period in order to raise the quality of operation to a satisfactory level. After the cost level can stay higher or decrease or be the same than before transfer, this depends on needs, expenditures, income and functions of the WUA. Finally, the charge for upstream and downstream farmers should be different, with higher charges for upstream users in time of water shortage (Garces-Restrepo C. et al., 2007; World Bank Office, 2007). According the CEO of GIB, he has to deal with the resistance of the board to increase the water use charges. The members want to pay as less as possible, but it is a main priority to keep the water use charges above the inflation rate; because he explained that the water supply system is getting old and then, the maintenance costs are increasing as time goes.

The WUA may have the possibility to get some subsidies or equipment facilities from the government according the functions and services it will provide, towards the Nation Water Act (1998). Its activities may interest several departments, then, the WUA can be supported at higher amount of subsidies. But, of course, before giving any financial assistance, the Minister must take into account the purpose of the financial assistance; the financial position of the recipient; and the need for water resources protection (DWA, 2000). According to a DWA agent, the DWA gives funds to the new institution during its 5 first years, but at the end of these 5 years, the structure should be able to finance itself. That is, DWA may subsidy the structure up to 100% the first year, 80% the second year, 60% the third one, etc. (minutes Mesuli, S. (2012-07-17)). Indeed, according to a report from the World Bank about WUAs in India (Naik G. and Kalro A.H., 1998), during the first years of a WUA, the association may need to perceive some subsidies to meet the high repair and maintenance expenses. But if these subsidies and attendant measures can be necessary at the beginning, it is a key success factor to be financially independent. Thus, to reach this independence, it is necessary that the society has the ability to recover the water charges from members in a timely manner (Naik G. and Kalro A.H., 1998). Some bureaucrats argue that governments cannot subsidize water management program by bearing the operational and management costs indefinitely. They argue that when projects mature and farmers reach a stable level of income, these costs should be covered by farmers alone (Garces-Restrepo C. et al., 2007). Nevertheless, according to the DWA officer, the institution can still apply for funds in the case of particular high cost management project, such as pipelines replacement, etc. (minutes Mesuli, S. (2012-07-17)).

Another aspect of financial sustainability of WUAs is the ability to undertake other business plan and projects, or to trade in water rights. For a better understanding of what is a trade in water rights, here are some examples on trading water rights: a farmer not using all the water allocated to his or her property sells his or her rights to another farmer wishing to use more water; the trade can also occur between two users located in different areas but utilising the same resource (e.g. a river). This requires that the seller relinquishes his entitlement to water and that the buyer applies for an entitlement to use that same water. This system is well developed and used in the Kouga catchment

under GIB control. Thus a WUA could sell part of its water rights to other users to boost its income and reduce its use of water (DWAF, 2002).

CONCLUSION

The project Living Lands is trying to implement in the upper Kromme River catchment required the involvement of various stakeholders. The idea of developing a forum, coming from the workshop with the landowners, interests the landowners and the other stakeholders interviewed and they are in general willing to participate to this forum.

A WUA can be implemented in the upper Kromme River Catchment because there is the Churchill Dam and some irrigation activities going on the catchment. Basically, the landowners are not ready to discuss about having an association such as a WUA yet. But to insure the communication platform, that Living Lands is trying to implement, is in line with implementing a WUA, this platform need to serve as a tool of communication. It has to improve the social capital that is, improving the communication, the relationship, the understanding among the stakeholders. It can diffuse the information of what a WUA is, can help the members to understand the roles and functions of the WUA, and understand their role and functions within the institution. But then, the forum should be used to discuss what the landowners want; it need to be active, to involve all its members, and start to develop an action plan to keep the members involved. Indeed, participating to a forum is time and energy consuming, then, if the members do not feel involved or do feel they are losing their time, they will not participate anymore. A forum as well as a WUA has to bring enough benefits to keep its members going on. Finally, it is necessary to be sure that the WUA has enough financial resources to finance its structure and its projects.

The success of the project depends on the willingness of the different stakeholders to get involved in it. The more difficult today seems to get and keep involved the landowners. It may be important to enforce the diffusion of the information concerning the meetings organized, to remember the time and place of the meetings to insure people to attend to them.

8. REFERENCES

- Cernea M.M. & Meinzen-Dick R., 1991, *Design for Water User Associations: Organizational Characteristics*, 29 October 1991, 18 pages. A Report from the Environment Department_The World Bank available online: URL address: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2005/08/04/000160016_20050804113752/Rendered/PDF/27392.pdf, read on the 4th of June 2012
- CRWUA, 2012, *2012 Supporting Position Statements To Accompany the 2012 Resolutions of the Colorado River Water Users Association*, December 2012, 17 pages. Available online URL address: <http://www.crwua.org/Portals/6/Documents/2011-12/2012%20Supporting%20Position%20Statements-Final.pdf>
- de la Harpe J., Ferriera J. and Potter A., *Water Management Institutions Overview*, Department of Water Affairs and Forestry, 40 pages. Available online URL address: <http://www.dwaf.gov.za/documents/publications/WMIoverview.pdf>
- Department of Water Affairs and Forestry, 1998, *The National Water Act _ Republic of South Africa, 1998*. Available on line URL address: <http://www.dwaf.gov.za/IO/Docs/nwa.pdf>
- Department of Water Affairs and Forestry, 2000, *Water Conservation and Demand Management Strategy for the Agricultural Sector*, December 2000. Available online, URL address: <http://www.info.gov.za/view/DownloadFileAction?id=70347>, read on the 25th of May 2012
- Department of Water Affairs and Forestry, 2002, *Empowerment of the poor through agricultural water user associations: a clarification of policy with respect to the establishment and operation of developmental water user associations*, the 13th of February 2002, 19 pages.
- Department of Water Affairs and Forestry, 2005, *A Draft Position Paper for Water Allocation Reform in South Africa. Towards a framework for water allocation planning*. Discussion document. Directorate: Water Allocations. January 2005, 24 pages.
- Department of Water Affairs and Forestry, year????, *Establishing a Water User Association*, guide 3 in the CMA/WUA Guide Series, 24 pages
- Dye, P. and Jarmain, C., 2004, *Water use by black wattle (Acacia mearnsii):implications for the link between removal ofinvading trees and catchment streamflowresponse*, South African Journal of Science 100, January/February 2004. Available on line URL address: <http://www.dwaf.gov.za/wfw/docs/Dye&Jarmain,2004.pdf>
- Garces-Restrepo C., Vermillion D. and Muñoz G., 2007, *Irrigation Management Transfer*, FAO report, december 2007, from page 45 to page 53. Available online URL address: www.fao.org/nr/water/docs/wr32eng_web.pdf
- GARIN, P., et LOUBIER, S. (2002). "Durabilité et fragilité des Associations Syndicales Autorisées (ASA) d'irrigation en France." *Compte rendu pour l'Académie de l'Agriculture Fr n°88(3)*: p.61-71. Available online URL address : http://www.isiimm.agropolis.fr/OSIRIS/article/ASA_Ostrom_Garin_2002.pdf

-
- Hosking & du Preez, 2002, *Valuing water gains in the Eastern Cape's Working for Water Programme*, WaterSA Vol.28(1)
- Klages, N. et al., 2011, *Nelson Mandela Bay Municipality state of the environment report*, NMBM SOER, February 2011. Available online URL address:
<http://projects.gibb.co.za/Portals/3/projects/201104%20NMB/NMBM%20SOER%20screen%20view.pdf>
- Kopen, Barbara van; and Nitish Jha, 2005, Redressing racial inequities through water law in South Africa. Interaction and contest among legal frameworks. *Liquid relations, contested water rights and legal complexity*. Rutgers University Press, US. Chapter 9: 195-214
- Kotze, D. and Ellery, W., 2009, WET-OutcomeEvaluate_An evaluation of the rehabilitation outcomes at six wetland sites in South Africa, Part 4: The Wetland Rehabilitation Project in the Kromme River Wetlands, Eastern Cape; Wetland Management Series, march 2009, pages 109-166
- Le maire, G., et al., 2006, *Impacts des modes d'occupation des sols par l'agriculture sur la recharge des aquifères et la gestion des ressources en eau*, pages 108-125, ESCo "Sécheresse et agriculture", October 2006.
- Midgley, D.C., Pitman, W.V. and Middleton, B.J. 1994a to f. *Surface Water Resources of South Africa*, Volumes I, II, III, IV, V and VI, Reports No's. 298/1.1/94, 298/2.1/94, 298/3.1/94, 298/4.1/94, 298/5.1/94 and 298/6.1/94, Water Research Commission, Pretoria, South Africa.
- Naik G. and Kalro A.H., 1998, *Two Case Studies on the Role of Water Users' Associations in Irrigation Management in Maharashtra, India*, URL address: <http://srdis.ciesin.org/cases/india-038.html>
- Nielsen T. K., 2004, *Water Users Association*, May 2004, 9 pages
- Perret, S., 2002, *Water policies and smallholding irrigation schemes in South Africa: a history and new institutional challenges*; water policy 4 (2002) 283-300. Available on line URL address www.waterpolicy.net
- Smit, T., 2003, *Catchment Management Forums in the Eastern Cape Province of South Africa*, July 2003, 41 pages
- World Bank Office, Bucharest, Romania, *WATER USERS' ASSOCIATIONS DEVELOPMENT IN SOUTHEASTERN EUROPEAN COUNTRIES, Proceedings of the Regional Workshop on WUAs Development, June 4 – 7, 2007*. Available online URL address:
<http://www.inpim.org/Resources/Folder.2004-03-10.2336/Proceedings/Romania.pdf>, page 8

10.5. STEPS FOR A WUA APPLICATION

The following section refers to the report of the Department of Water Affairs and Forestry (DWAF, 2002).

An application for implanting a Water User Association is composed of several phases:

1. Submit a proposal for the establishment of a WUAs

The Director-General of the Department of Water Affairs and Forestry may assist water users to develop a proposal.

The members need to define in this proposal, the general characteristics of the association:

- the reasons for making the proposal;
- a proposed name and area of operation for the association;
- the proposed activities of the association;
- a description of any existing or proposed waterwork within the proposed area of operation which is relevant to the proposed activities of the association;
- a description of the water use licences or any other authorisations which the proposed members hold or intend applying for;
- a list of the proposed members or categories of members of the association; and
- an indication whether there has been consultation in developing the proposal and the results of the consultation.

Then, we should also find the proposal of the association constitution. The latter matches the characteristics of the different WUAs such as the size and functions. Further, there are elements, which should be contained in all constitutions of WUAs. These are: (DWAF, 2001: 5)

- details of the principal and ancillary functions,
For instance, the Colorado River WUA get many various functions (because of the size of the association), among them: position on the endangered species act, on the clear water act, use and maintenance of water supply facilities, maintaining financial stability, managing and increasing the water supply, and climate change issues (CRWUA, 2011). Another example is the Mara River Water User Association: "The primary objectives of MRWUA are to promote the protection and conservation of the Mara Catchment area, support the sustainable and efficient use of water, assist relevant authorities with water resources management and issuance of water use permits, and water conflict resolution." (Equator Initiative, 2010)
- the procedures and requirements for admitting new members,
- the voting powers of members, procedures for terminating membership,
- procedures for electing the management committee,
- procedural requirements for the appointment of employees,
- procedural requirements for obtaining loans and the financial obligations of members towards the association

To get more details about how drawing up a constitution, the future WUA members should report to the section 93 of the National Water Act and they can also check the model constitution provided in schedule five (annex 2).

The proposal thus submitted to the district council will be transferred to the Minister involved, but it can involve several ministers depending on the characteristics of the association and the area. But in our case, involving farmers, two ministers should be involved: the Department of Water Affairs and Forestry and the Department of Agriculture and Lands.

The Minister will approve the establishment of a WUA if the WUA promotes the objectives set out under the **Purpose of the National Water Act**. These objectives include factors such as:

- 3 protection, use, development, conservation, management and control of the nation's water resources
- 3 meeting basic human needs of present and future generations
- 3 promoting equity, efficient, sustainable and beneficial use of water
- 3 social and economic development, and
- 3 protecting aquatic ecosystems.

The proposal to establish a WUA should also be consistent with the Catchment Management Strategy of the CMA.

Source: Water Management Institute

2. Business plan

Once the association is approved by the Minister involved, a business plan should be prepared within the six months of the establishment of the institution and be updated annually then.

Business plans are an important tool for the members in determining how their institution will operate in practice.

The business plans are tools to achieve total independence according to an economical and functional point of view. Also, there are some outlines in the business plan, which need to be clarified to achieve such sustainability of the institution:

- The need for the business plan to provide for capacity building amongst board members and officials;
- The need to describe how the WUA is ensuring consultations with stakeholders;
- The formulation of financial and performance indicators (that the WUA will utilize to monitor and evaluate its operations) and targets for the organization as required under item 22
- The development of a financial strategy for the institution including the setting of charges, borrowing, investment and purchasing and disposal strategies required under item 23;
- The development of a forecast of revenue and expenditure as required under item 23;
- The immediate submission of business plans to the Minister as required under item 25.

However, these items are required by law and therefore a key goal of the facilitation process will be to ensure that the community in question is:

- Empowered to develop the general outlines of a business plan;
- Empowered to develop a financial strategy;
- Empowered to meet the operational requirements contained in schedule four.

The Department of Water Affairs and Forestry, in its capacity as regulator, is responsible for monitoring the performance of water management institutions in order to identify problems and decide on appropriate interventions (DWAF, 2002).