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PARTICIPATION AND REPRESENTATION OF SMALLHOLDER IRRIGATION IN ZIMBABWE'S DECENTRALIZED WATER MANAGEMENT: A CONCEPTUAL FRAMEWORK FOR ANALYSIS

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ABSTRACT

An analytical framework for the participation of rural community members as water users and their representation in the water sector in Zimbabwe is proffered. The framework is generated by reflecting on some key concepts on the local level participation and representational participation. Our approach is also located within theories on community institutional arrangements for collective natural resource management, but we also draw extensively from our field experiences. The ultimate objective is to develop a model that is both theoretically sound and applicable in practice. Consequently, we applied the framework to a specific case in southwestern Zimbabwe, where we isolated the smallholder formal and informal irrigation stakeholder groups to see how the framework might help us understand community participation in smallholder irrigation activities and their subsequent representation in the new water councils.

Keywords: Smallholder Formal and Informal Irrigation; Water Users Association; Participation; Representational Participation; Catchment and Sub-Catchment Councils;

INTRODUCTION

The 1990s period has seen many African countries implementing decentralization programs. One of the motivations of decentralization believed is the promotion of good governance and other democratic principles by broadening access to and participation in governance institutions (Ferguson & Mulwafu, 2001). According to Agrawal and Ribot (1999), the presumed benefits of decentralization become available to local populations only when empowered local actors are downwardly accountable. Other arguments for decentralization is that those with livelihoods derived from the particular natural resources will manage them better and will have greater decision-making over them.

International trends in water resources management has been significantly shaped by the Integrated Water Resources Management (IWRM), Dublin principles from the International Conference on Water and the Environment held in Dublin in 1992, as well as from the 1992 Rio Summit's Agenda 21 of the United Nations Conference on Environment and Development. These principles were also adopted by the World Bank as a new policy framework approach to managing water resources (World Bank, 1993). These new ideas on water resources management include the creation of institutions of

decentralized management with greater stakeholder participation. They also embrace the promotion of an integrated approach to water management, focusing on river basin/catchment management, as well as across economic sectors and ministries. The new ideas also campaign for increased social equity in access to water and voice in water-related institutions.

EVOLUTION OF WRM INSTITUTIONS IN ZIMBABWE

A combination of going along with the internationally driven IWRM bandwagon, enactment of requisite legislation, supporting policy framework and stakeholder consultations in the reform process led to the birth of the new institutions of water resources management in Zimbabwe. The reform process claimed that a consultative approach with the full participation of stakeholders was taken (Water Resources Management Strategy, n.d.). Other independent work pointed out that the 'grassroots level' involvement was weak or non-existent and that the whole exercise of setting up the catchment and sub-catchment councils was hurried (Chikozho & Latham, 2005). On the other hand, community level institutions for the management of natural resources were already in existence in Zimbabwe. Other researchers refer to them as customary laws, traditional informal practices, or indigenous institutions for the management of natural resources (Cleaver, 2000; Chikozho & Latham, 2005). The traditional nested levels of governance started at the village level, headed by an appointed village head/kraal-head. The kraal-head is appointed by the Chief at the recommendation of the Headman. Immediately above the village level is the Headman, who presides over several (25-30) villages. The Chief appoints the Headman and he presides over 3-5 Headmen. Chikozho and Latham (2005) claimed that these traditional institutional arrangements (chieftainship systems) are the only robust and observable form of management in the grassroots communities. Hence, it is the domain where the local common/communal resources management falls.

The traditional institutions, together with the customary laws and other informal practices of natural resource management, already in existence lie juxtapose, or overlaid, by the new institutions of water resources management. The question is how will they relate and/or link and operate? The new water institutions appear to have come into existence through the idea of institutional crafting based on prescribed 'design principles' for robust and durable institutions for common property resource management (Ostrom, 1990). On the other hand, the traditional institutions, together with the customary laws and other informal practices of natural resource management, appear to be more favored by concept of institutional *bricolage*, that is, institutions that are often invisible, being located in the daily interactions of people (Cleaver, 2000; Cleaver & Franks, 2005).

Participation in the new water institutions created (catchment and sub-catchment councils), is through the stakeholder group representation. The statutory regulations identified different stakeholder categories, which include the large scale commercial farmers, Rural District Councils, communal farmers, resettlement farmers, small scale commercial farmers, indigenous commercial farmers, urban authorities, and large scale and small scale miners (Zimbabwe, 2000a; Zimbabwe, 2000b). Each stakeholder category elects their respective representatives into the sub-catchment council. The sub-catchment councils, in turn, elect their representatives into the catchment council.

An analytical framework for the participation of rural community members as water users and their representation in the water sector is proposed. The framework is generated by reflecting on some key concepts on local level participation

(Cleaver & Toner, 2005; Toner & Cleaver, 2006; Mayoux, 1995) and representational participation (Lowry, Adler, & Milner, 1997; Ohio State University, 2000). Our approach is also located within theories on community institutional arrangements for collective natural resource management (Ostrom, 2000; Cleaver, 2000), but we also draw extensively from our field experiences. The ultimate objective is to develop a model that is both theoretically sound and applicable in practice. Consequently, we applied the framework to a specific case in southwestern Zimbabwe, where we isolated the smallholder formal and informal irrigation stakeholder group to see how the framework might help us understand community participation in smallholder irrigation activities and their subsequent representation in the new water councils.

SITUATING SMALLHOLDER IRRIGATION IN ZIMBABWE'S IRRIGATION SECTOR

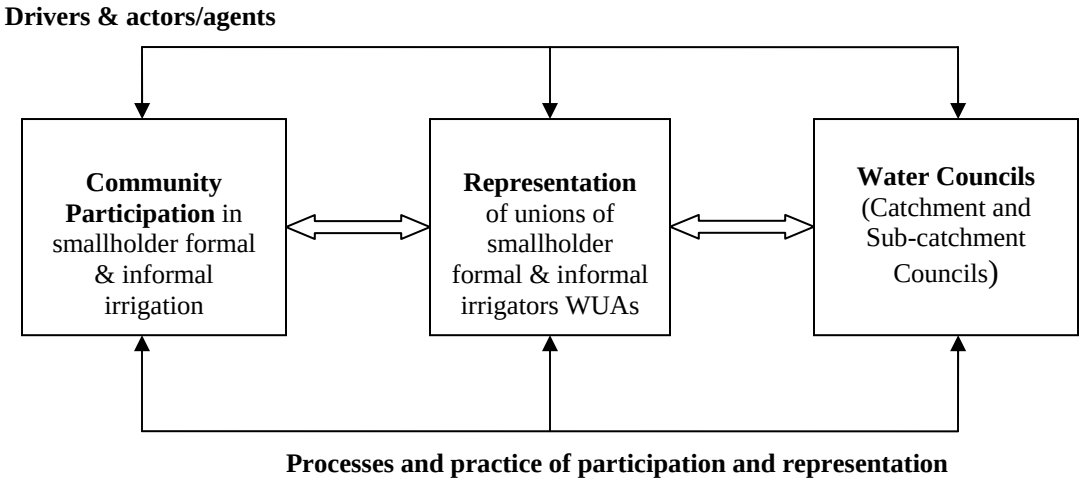
The irrigation sector in Zimbabwe at the close of the millennium comprised of two sub-sectors that varied enormously in terms of technology used, management regime, and contribution to the national economy. By 1999, 172,400 hectares of land were under irrigation, of which about 139,500 ha (81%) comprised the large scale commercial sector. The remaining 32,900 ha were under smallholder irrigation (FAO, 1999). Of the 32,900 ha under smallholder irrigation, estimates of about 20,000 ha were under informal or microscale irrigation and the remaining 10,900 ha being under formal irrigation (FAO, 1999). Following Zimbabwe's hotly disputed Land Reform of 2000, significant structural changes occurred to the irrigation sector (Zawe, Svubure, & Shambare, 2003; Svubure, 2007). The large scale commercial irrigation was reduced to about 8,000 ha and the vandalization of irrigation infrastructure left about 94,500 ha dysfunctional. The smallholder irrigation emerged as the largest sector comprising about 42% of the total irrigated land in the country, with formal irrigation and informal irrigation comprising 16% and 26% of the irrigated land, respectively (Zawe, Svubure, & Shambare, 2003; Svubure, 2007). Besides, in terms of livelihoods, smallholder irrigation far exceeds that of the other individual irrigation sub-sectors.

THE CONCEPTUAL FRAMEWORK

Introduction

Our analytical framework (Figure 1 below) is constructed as follows. It embraces the local level (micro sub-catchment level) participation premised on *human*, *technology*, and *social interaction factors* as drivers of the processes and practice of participation. In smallholder irrigation, these factors combine with the *facilitation of* and *networking* with already *existing formal and informal institutions* (also drivers) to cause the birth of the formal and informal smallholder irrigation Water Users Association (WUA) models.

Figure 1: Framework for community participation in smallholder irrigation and representation in the water sector



The second part of the framework embraces the concept of representational participation. Representatives of the local union of smallholder irrigation WUAs represent the interests of the individual smallholder irrigation WUAs at the micro-catchment level in the next higher tiers of sub-catchment and catchment levels.

Local level participation

In the 1990s, many African countries have placed a lot of emphasis on managing community resources and delivering services through participatory processes in their development policies (Ferguson & Mulwafu, 2001). This was mainly due to the influence of the changing international trend in managing community resources, including water (IWRM Dublin principles in 1992, 1992 Rio Summit's Agenda 21, and World Bank, 1993). However community participation is fraught with many complexities making attempts at participatory development subject to many inherent tensions (Mayoux, 1995). The basis of participatory development is achieving consensus on needs and priorities among the community members. This may be difficult because communities are not a homogenous group. For example, reaching a consensus on 'women's needs' is a serious problem in not only mixed-sex projects, but also within women only projects because women are not a homogenous group with similar interests, experiences, age, wealth, and power (Mayoux, 1995). Hence, the participatory tool tends to favor certain categories of community members at the expense of other members, especially the poor. The exclusion of the poorest from participating in community projects and its benefits has actually become a cause for concern (Cleaver & Toner, 2005). However, despite these and other limitations, the participatory paradigm has been enthusiastically adopted in the water sector by many African countries because there are also areas of strengths of the participatory approaches (Toner & Cleaver, 2006). For example, many researchers believe that collective participatory action can overcome social exclusion, achieves greater effectiveness and sustainability of projects, and can contribute to good governance of water at the local level (Toner & Cleaver, 2006). Urged by the preceding beliefs and the fact of communal ownership of natural resources in many African rural communities, our framework adopts the participatory process as an approach in community development.

The human factor of local level participation

In order to understand the opportunities and restrictions on local level participation in formal and informal irrigation WUAs, the framework can be used to analyze the characteristics of ordinary members and of those in leadership positions. Such an

analysis brings to the fore why certain people in the community are excluded from the respective WUAs and shows the difficulties of engaging them in formal and informal irrigation WUAs. Cleaver and Toner (2005) assert that individual participation in collective activity is shaped by both structural factors and the individual's ability to exercise their own agency. The individual's capacity to exercise their own agency is manifested in their personal motivations to participate, ability to shape local norms, and on the capacity to draw on social and human capital; whereas the structural factors include many factors, such as age, literacy, gender, and well-being (Cleaver & Toner, 2005). These characteristics comprise the *human factor* of our analytical framework. By grouping individuals according to their level of participation in selected spaces of local collective action, some of the structural factors, which influence the patterns of participation, may emerge. This concept is adapted in our framework to analyze how some people in the community exercised their agency to gain membership and leadership positions in the WUAs. The framework goes further to analyze how these people influence the institutional arrangements of the WUAs in their different placing. The *agency-structure* concept by Toner and Cleaver (2006), which we drew upon to construct the *human factor* component of our framework, suggests that the exclusion of the poorest members of society in the rural areas will not necessarily be surmounted by the creation of new spaces and rules for their engagement.

The technology factor of local level participation

In addition to the human factor described above, our framework adds the means to access water (*infrastructure/technology*) as a leverage or impediment to community members' participation in irrigation WUAs. Technologies provide the means to harness, control, and move and apply water on the land for productive use. Manzungu (2002) observed that without the resources to access water, there is no meaningful stake for the poor communities in the water sector. The donor fraternity and the government agencies play a pivotal role in assisting rural communities with technologies to access water for productive use and they also have a strong influence on the institutional arrangements/developments of the WUAs. In building the framework, we chose to focus on the *technology factor* in order to widen the analytical view that the lack of appropriate technology can curtail community engagement in water-related projects, thereby reducing their stake in water and vice-versa.

The social interaction factor of local level participation

The third factor influencing local level participation in informal and formal irrigation WUAs is the *social interactions*. Mtisi and Nicol (2003) observed that cultural constraints, such as norms, defining appropriate gender roles can discourage women to speak out at public meetings. Also informal irrigation activities (gardening) are still perceived as a women's activity in certain rural communities and male members of the community may feel uncomfortable to become members (FAO, 2005). In constructing the framework, we chose the *social interactions factor* to also widen the analytical gaze that members of WUAs and non-members, in one community, continue to interact for the sustainability, but sometimes to the detriment of the water-based project of the WUA.

Institutional arrangements for collective action

Institutions can be impeding or leveraging structures in people's livelihoods and theories abound on such institutions of collective action in the management of natural resources (Cleaver & Franks, 2005). Ostrom (1990, 1992, 2000) theorized that

institutions can be consciously crafted or shaped through external intervention by describing 'Design Principles' for robust and enduring institutions for common property resource management. Some of the design principles of creating institutions include the setting up of rules and regulations, clear boundaries of jurisdiction over the resource, the nesting of local institutions with other levels of decision-making, and a clearly defined user group (Ostrom, 1990; Ostrom, 1992; Ostrom, 2000). Another body of theory, institutional *bricolage*, suggests that, "…institutions are partial, intermittent and indeed often invisible, being located in the daily interactions of people" (Cleaver, 2000). The institutional *bricolage* concept further elaborates that institutions are formed from multiple processes comprised of both deliberate and unconscious acts that includes significant 'borrowing' of accepted patterns of interaction from socially accepted relationships (Cleaver, 2000). This component of our framework draws upon certain aspects of the design principles, like the management of water on the basis of clearly defined catchment boundaries and that the participation process of smallholder irrigators, together with other stakeholder groups, is based on nested levels of institutions. In addition, the WUAs are consciously crafted with defined user groups and with rules and regulations. We combine these design principles with aspects of institutional bricolage, such as the borrowing of socially sanctioned relationships and other multiple processes of institutional building. Hence, our analytical framework borrows elements from the 2 contrasting theories. The framework, first, analyzes how the formally crafted WUAs relate to other informal structures, social relations, and individuals with positions of power existing within them. Secondly, it analyzes how the respective WUAs tap into whatever existing linkages between them and the formal and informal institutions in the community at large and beyond. The institutions in which the individual WUAs are embedded may be tables (or platforms) where final decisions can be made. Hence, it may be worthwhile for an irrigator in a particular WUA to get a seat (or membership) in these platforms, than to get a seat in the formally crafted structures in the WUA. The framework, thus, recognizes the existence of a network of linkages between an individual irrigation WUA and the institutions around it important for institutional development.

REPRESENTATION

The final component of the framework comprises of a local (micro sub-catchment level) union of formal and informal smallholder irrigation WUAs, electing its representatives into the sub-catchment council. The sub-catchment council, in turn, elects its representatives into the catchment council. Informal and formal irrigation can form separate unions for effective representation in the sense that there will be separate representatives for each group. Our framework defines the term 'representation' to mean the act of representing; standing in for someone or some group; and speaking with authority in their behalf. As in politics, if the public is to participate in the government, citizens must select a small number from among themselves to act for them. In Zimbabwe, the stakeholder interests/stake in water resources is formally safe-guarded through representational participation in the catchment and sub-catchment councils arena.

Conditions that encourages citizen participation

Here, it is useful to borrow the concept developed by the Ohio State University (2000) on citizen participation in community development, which argued that it is a desired process that can meaningfully tie programs to people. The concept was developed from data on volunteering in community activities in the American society. It has 6 major principles or conditions, which likely leverages or impedes participation in voluntary community groups and activities. Our framework adapts 3 of the

6 principles to argue that the representational participation of the smallholder formal and informal irrigators in the new water councils in Zimbabwe. These are the principles of positive benefits, availability of appropriate organizational structure, and a better knowledge of the issue as leverages or impediments to participation.

Benefits to be attained

The principle illustrated here is that citizens will participate in a community activity when they see positive benefits to be gained. And since benefits seldom come without costs, the citizens usually participates when the benefits outweigh the costs. The costs, which may be in any form, such as money, time, social status, skills, hostility, and loss of friends, may be born personally or by the group to which one belongs. Mayoux (1995) noted that transaction costs, which include skills, resources, 'freedom to travel', and time, may present barriers to women participation. Further, Mayoux (1995) argued that women's participation should not be seen as shifting developmental costs from developmental agencies or men to women. It is the citizens who then use their own scale of values to determine whether or not to participate. While there are costs for participating, there are sometimes costs for not participating. This, too, is part of the trade-off, which the elected representative must consider in deciding when and how to participate in the community-decision making process. The principle of 'benefits to be attained' is factored into the framework to analyze the costs of representational participation in the water councils against the benefits to the WUAs.

An appropriate organization

This condition argues that in some instances, there may be no group or community organizational mechanisms through which the citizens can voluntarily participate or become involved in the decision-making process. The Ohio State University (2000) asserts that, "…citizens will voluntarily participate in a community activity when they have an appropriate organizational structure available to them for expressing their interests. If they view the organization as cumbersome, time consuming, dictatorial, or grossly inefficient, they will not join, will withdraw after joining, or their dissatisfaction may be evidenced by high absenteeism, or a general unwillingness to be supportive or cooperative

Better knowledge

This principle asserts that people are reluctant to participate in community activities when they do not have enough information to act responsibly. The water councils in Zimbabwe were established by the Water Act of 1998, which councilors are expected to be familiar with in order to discharge their duties well. Interpreting pieces of legislation is usually difficult for non-lawyers. Consequently, the councilors in the water councils in Zimbabwe may simply do not know how to act or will avoid participation as long as possible or until they have what they believe to be sufficient information. The framework goes beyond just information and knowledge alone, as sufficient to leverage participation. People need time to think about and discuss an issue, weighing the new information against previous knowledge and experience; then they will act.

The notion of representative democracy

Lowry, Adler, and Milner (1997) raised important analytical questions that have never been definitively answered in our endeavor to understand the concept of representative democracy. These questions include: How are the representatives

elected? What is their motivation? What does it mean to represent? Does it mean advocating the constituents' views as accurately as possible? Does it mean acting in what the representative sees as is in the constituent's best interest? Can representatives speak in their personal capacities rather than as special representatives of their constituencies? Can it be argued that this will allow representatives to enter into a no-risk and more position-free discussions? Is the chairperson accountable to the stakeholders? What accountability should there be between the representatives and those they represent? Participation needs to be defined. What does meaningful participation mean to the policy makers and what does it mean to the people? In theory and practice, these questions are important. They have been debated for as long as any notion of representative democracy has existed and, of course, they have never have been definitively answered (Lowry, Adler, & Milner, 1997). However, to enhance its practical application, our framework limited itself to the question of the selection of representatives of the smallholder irrigation stakeholder group in the sub-catchment council.

Participation And Representational Participation In The Mzingwane Catchment

We applied our framework on a specific situation, the case of participation in smallholder formal and informal irrigation and their representation in the new water councils in Mzingwane catchment in southwestern Zimbabwe. The main objective of the study was to understand what shapes the participation of community members in these smallholder irrigation arenas in the Mzingwane Catchment. The study, therefore, sought to understand who participates in the selected formal and informal irrigation WUAs and who is excluded. Furthermore, the diagnosis sought to understand how each respective WUA links to other existing decision-making arenas around it and how they all gain representation in the new water resources planning and management institutions.

The Mzingwane catchment (Figure 2) is a sub-basin of the larger transboundary Limpopo basin in southern Africa, straddling the 4 countries: Botswana, Mozambique, South Africa, and Zimbabwe. The Mzingwane catchment is one of the 7 catchments in Zimbabwe and is located in the semi-arid southwestern part of Zimbabwe. The catchment occupies an area of 15,695 square kilometres and it is sub-divided into 4 sub-catchments, namely: Shashe, Upper Mzingwane, Lower Mzingwane, and Mwenezi.

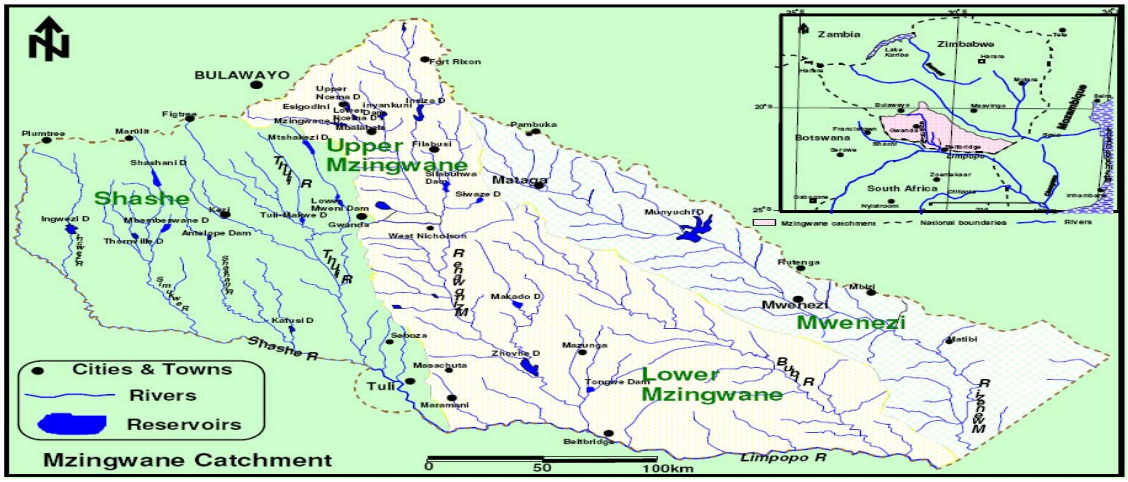
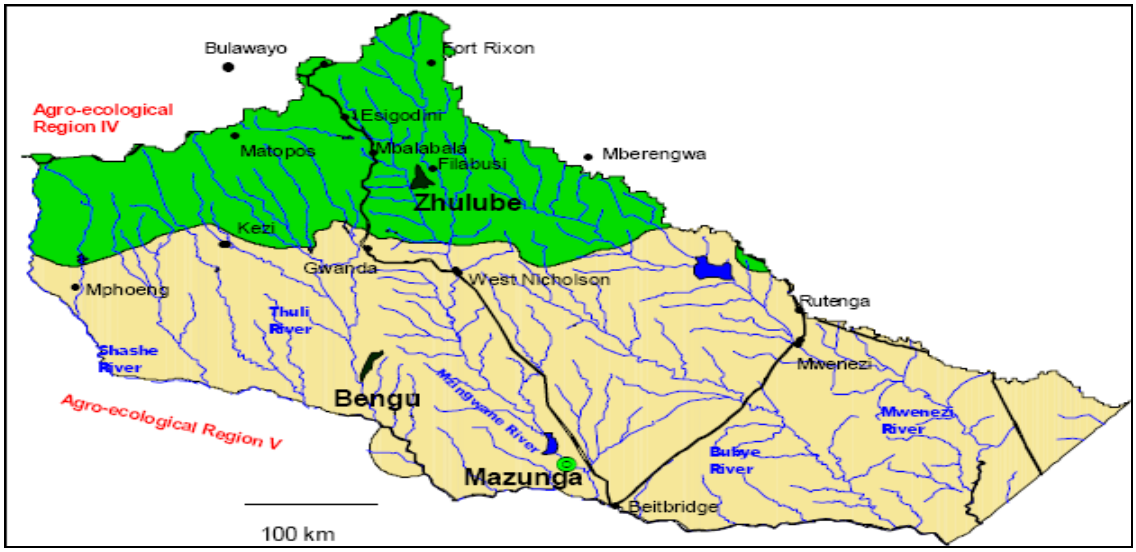


Figure 2: Mzingwane Catchment, in south-west Zimbabwe with its 4 sub-catchments catchments, namely: Shashe, Upper Mzingwane, Lower Mzingwane, and Mwenezi.

(*Source: compiled from David Love, unpublished).*

The small Zhulube catchment, a small part of the larger Mzingwane Catchment (Figure 3), encompassing the Zhulube irrigation scheme, several dams, and informal irrigation sites, was subsequently delineated as the unit of study. The small Zhulube catchment falls under the Upper Mzingwane sub-catchment area, making the Upper Mzingwane Sub-catchment council another decision-making arena for this study in addition to Mzingwane catchment council itself.

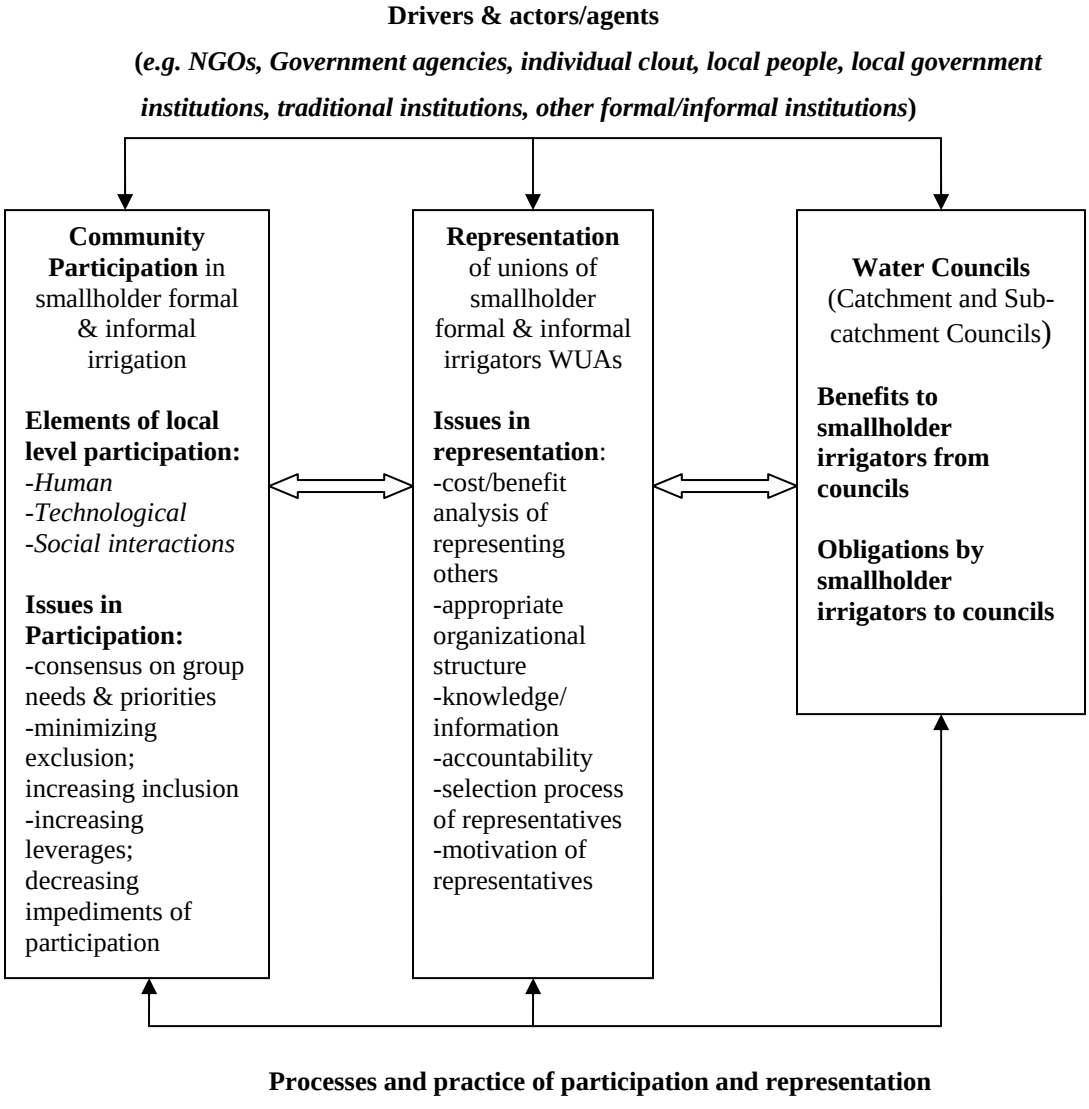
Figure 3. Location Map of the Zhulube Catchment, part of the larger Mzingwane Catchment in south-west Zimbabwe.



(Source: compiled from David Love, unpublished).

The river system of the Zhulube catchment consists of the sub-perennial Zhulube River and several ephemeral streams as its tributaries. The southwestern part of Zimbabwe is generally a dry region, receiving an erratic rainfall distribution pattern. Crop production, without supplementary irrigation, is therefore a highly risky enterprise. Therefore, the issue of access to water for productive purposes is imperative for the Zhulube community for a livelihood. We, therefore, employed the framework (Figure 4, below) to analyze what shapes the participation of local people in gaining membership and leadership positions in the WUAs.

Figure 4: Participation in smallholder irrigation and water sector representation in the Zhulube micro-catchment



The Drivers and the Actors

After the siltation of 2 dams, the request by the Zhulube community for a dam has been under discussion for a long time. The dam was needed to provide water for livestock, domestic use, and also for irrigation. Several institutions and individuals occupying positions of power within and outside Zhulube catchment played important roles that gave birth to the Zhulube formal irrigation. This already demonstrates that even before it became operational, the irrigation scheme was going to embed

itself into a web of already existing institutions both inside and outside the Zhulube catchment. The Zhulube community was engaged in a participatory/consultative process for the dam and irrigation projects under the facilitation of three institutional arrangements. These were the old traditional structures, the new local government structures, introduced after independence in 1980, and the donor World Vision. In practice, however, we learned from the community that the new local government was comprised of the Village Development Committees (VIDCO) and the Ward Development Committees (WADCO) were dormant and that they no longer hold meetings, contrary to the ward councilor's assertion. On the other hand, the traditional structures were active and the kraal-heads, headmen, and chiefs are, in fact, on the government payroll. The ward councilor frequently consulted, first, the village/kraal-heads, then Headmen and lastly the Chief for developmental issues and decision-making in the ward. This probably demonstrates the superiority of the traditional leadership structures over the invisible new administrative structures in decision-making. He also consults the traditional herbalists, church leaders, headmasters, and the clinic staff and any other leadership in the area. This consultative process is mainly informal. The councilor explained that he normally takes the decision (to the Rural District Council (RDC)), which the majority of the consulted community leaders converge on. The kraal-heads we managed to interact with corroborated the councilor. They confirmed that he frequently consults them and that he was a key member in the community, who was particularly instrumental in sourcing the donor funding for the dam and irrigation projects.

Here we see a demonstration of the social interaction in the community as a crucial element of a participation form in our analytical framework. What is important to note is that vital information is exchanged, such as the people's need for a new reservoir. One will also speculate that other information is discussed as well. This builds well into the institutional bricolage body of theory that institutions evolve through complex multiple processes, one of which is located in the daily interactions of the people (Cleaver, 2000).

On the other hand, World Vision identifies community problems through the Participatory Rural Appraisals (PRAs), a more formal approach, which usually take the form of focus group discussions. These are conducted to find out the community needs, which are, in turn, ranked. The projects would be implemented depending on the World Vision budget.

In the end, World Vision, thus, responded to the needs of the Zhulube community by designing and constructing the multipurpose 800,000 cubic meters Zhulube dam. The reservoir was constructed on the Zhulube River, downstream of the existing silted dams. The community provided labor through clearing the core trench area of the dam wall. They also carried stones used for the dam wall. Land close to the dam was identified for irrigation development. World Vision designed and constructed the irrigation scheme, which they immediately handed over to the community. World Vision, thus, played the facilitative role by providing funding and overseeing the implementation of the projects. The analytical framework argues that without the technological means to access water, the stake of the rural communities in the water will remain insignificantly low. The irrigation scheme, which has a net area of 15 hectares, started operating in July 2003. Water is conveyed from the dam to the field by gravity through a pipeline. The in-field works comprises of a network of (concrete) lined canals from which water is applied to the crops in basins through siphons.

The case of the genesis of the Zhulube dam and irrigation projects has demonstrated that an actor/agent could have campaigned for these projects on a seat (membership) at one of the tables (platforms) described (Ahlers, 2005). These tables include the traditional structures, the new local government structures, and World Vision. It was up to the actor to decide the table at which one felt that the final decision on the projects was made. Also, the framework helped us to see that positive and negative linkages evolved between the new and rationally crafted institutional arrangements and the old already existing institutional arrangements.

Informal irrigation (also gardening) is one of the forums of collective activity by the rural folks as they may be united as a WUA in sharing one water source or an irrigation site, or both. However, gardening activities are low in the Zhulube catchment, possibly because of the absence of wetlands in this dry area; wetlands are a favorite site for gardens in other parts of the country. Besides, Zhulube is a hot and dry area, making informal irrigation difficult, owing to the resultant water scarcity and high crop evaporative demand.

A pattern emerges from the genesis of the community nutrition garden WUAs in the Zhulube catchment. World Vision and the government agencies initiated the garden projects through primarily donating vegetable seed, fencing material, or both. World Vision embarked on promoting community gardens under a 'family nutrition program' as a way to fight rampant malnutrition, which was reportedly prevalent in the area especially among children under 5 years. The Sisebenzelandawenye garden project, started after World Vision, just left an assortment of vegetable seeds with an elderly grandmother and asked her to start a vegetable garden project. The elderly grandmother approached her neighbor, who later became the chairperson of the garden. The neighbor was middle-aged (35-35 years age group) and more energetic. The Nyelane and Green Valley garden projects were initiated in the same way with vegetable seed donation from World Vision. Both gardens draw their water from multipurpose boreholes. Another WUA, the Umthombo Wesizwe community garden, was started in 1991 at the initiative of the Ministry of Health as a government program in response to the 1991 drought-induced food shortages.

The facilitative role of the external institutions (World Vision and the Ministry of Health) in providing the technological means to access water for the productive use is manifested here. It can, therefore, be argued that the access to/lack of financial/technological support can leverage/constrain the participation of rural communities in the water sector.

Gaining membership in the WUAs

A Project Implementation Committee (PIC) was elected to help World Vision and the construction company to organize people in constructing the Zhulube irrigation scheme. Through an arrangement brokered by the local kraal-heads, people whose land (fields) were taken up by the scheme became the first priority for plot allocation, as well as those whose homes fell within the dam area and got inundated. These plot-holders were exempted from working on the scheme construction. The bulk of the membership (24 members) got in through working on the construction of the scheme without payment. Other people got membership through paying joining fees on a first-come-first served basis. This category of people was invited to join in order to complete the membership of 41 required. Only 6 members were enrolled through this way. The table below summarizes the characteristics of the members of the Zhulube formal irrigation WUA, indicating how some community

members were excluded. It can then be argued that age, wealth, gender, family labor availability, and farming experience were some of the structural factors that contributed to the attainment of membership in the Zhulube formal irrigation WUA. In addition, the walking distance to the scheme (10-15 km) was too much to endure, limiting some families to join the scheme. The latter particularly affected the older members of the community, as well as women who had other roles to perform in the home, such as caring for the AIDS patients.

On the other hand, membership to the individual informal WUAs was basically by open invitation to their respective local communities. However at least 2 factors were common in all the informal WUAs studied, which determined whether one could be included or excluded from participation as a member. These were the availability of labor and the payment of a joining fee. The work in the construction of the gardens entailed clearing the sites of trees and bushes and fencing the irrigation sites. Every member was required to contribute labor towards the construction of the gardens. Also, repairing the fence with the thorn tree branches was a routine work. This was hard work considering the family's day-to-day obligations, hence this probably tended to exclude families with elderly parents and those which were particularly labor-constrained. Gardening activities competes with the scarce family labor for other more labor-intensive activities, such as gold panning, cattle rearing, and rain-fed crop production.

Table. The characteristics of the members of the Zhulube formal irrigation WUA.

Structural factor	**Characteristics**
Gender	Families (95%) with women in the working age bracket of 35-45 years were allocated plots. Women form the bulk of the workers in this irrigation scheme. Labor was needed not only for working during the scheme, but also for working on the plots. Also, the distance to the scheme was too much for those women who could be already burdened with other reproductive roles in the home.
Age	The majority of the plot-holders were families with women and men in the age bracket of 35-45 years. The man (husband) would be involved in gold panning or working elsewhere, providing money to buy inputs, while the woman (wife) will be working on the plot. Families with old people were thus excluded and those with young people probably preferred to work elsewhere. The distance to the scheme was also too much (10-15km) for the old to freely walk to and from their homesteads on a regular basis.
Wealth	The majority of the plot-holders were from well-off families by their local standards. Such families afforded to pay the joining fee and did not work on the scheme construction. Other well-off families own cattle, which are important for draft power, such as tillage. Also, cattle provided manure used for fertilizer. Other well off families received remittance from children working in the urban areas. Poor families were, thus, excluded because of the lack of money needed to buy inputs and hire cattle for draft power.
Family labor (labor division)	Irrigation demands labor throughout the year, unlike rain-fed cropping. Hence labor availability was important as irrigation work competed for family labor with other activities, such as rain-fed agriculture, cattle rearing, and gold panning. Hence labor constrained families found themselves excluded from irrigation.
Farming experience	The majority of the plotholders were from reputable farmers in the community who had the farming experience. We learned that some people who opted out before work started on the scheme construction could not withstand the hard work they heard was associated with irrigated crop production.

The organizational arrangements within individual WUAs

At the inaugural training workshop organized by World Vision, the irrigators, with the assistance of both World Vision and AREX, crafted a number of management structures for the running of the scheme. Here we also see the manifestation of the facilitative roles in the analytical framework of the agencies World Vision and AREX. It is at this same workshop that the running of the scheme was officially handed over to the irrigators, in line with the World Vision policy of project ownership by the beneficiaries. The irrigators, with the help of AREX and World Vision, elected their Irrigation Management Committee (IMC), also referred to as the Main Committee (MC). A retired school headmaster was elected as the first chairman of the scheme. Several sub-committees were created, which includes the Development, Water, Catchment Protection, Maintenance, Disciplinary, Buying, and Marketing Committees. The chairman, his vice, and the secretary all were educated and literate and were regarded as wealthy by the community. Three categories of wealth could be roughly defined as poor, middle, and wealthy. The elements of wealthy were income, cattle ownership, and homestead appearance. Homestead with houses of brick under asbestos/zinc sheets were ones for wealthy families. The chairman had good links with external agencies, such as the government agencies and NGOs, acting as an entry point to the Zhulube area. This finding has important implications on ongoing debates of linking social capital in shaping active participation in collective activity (Cleaver & Toner, 2005).

In each of the four community garden WUAs studied, there is an elaborate management committee of seven (sometimes six) though the function of some of the individual committee members in each case is rather obscure. The positions of power in each of them comprise of the chairperson and the vice, secretary, treasurer, and two or three committee members. This management structure is common in all the institutions we interacted with in Zhulube, more of an unwritten standard. A series of distinct patterns emerge in the management committees of the community garden WUAs. Besides that the MCs are comprised of seven members, there is striking uniformity in that it is only the chairpersons and their secretaries who are the most active in the entire management committees. Also, chairpersons and their secretaries were literate women of the middle-age group who were known as hard-workers in the community. They occupied similar or other positions of leadership in other institutions of collective activity in the Zhulube community.

Decision-making in WUAs

Generally, the decision-making arrangements, in place in the WUAs, are that the MC meets first to deliberate on issues, before going to the rest of the members. Then, a general meeting is called to seek the members' input before decisions are finally made. In practice, however, the individual WUAs management committees no longer meet first to discuss issues before calling the general meetings. All members just meet and deliberate on the issues, cutting down on the number of meetings and saving precious time consumed by meetings. The frequency of the meetings varied with the individual WUA. Initially meetings were held semi-monthly; however, this was gradually reduced to once a month. Presently meetings are held only when there are issues for discussion, which any member can raise. Many other issues frequently arise during the meetings. Only the MC members can call for the general meetings.

The decision-making process is generally the same (consensus-oriented) in the WUAs studied. It is a laborious cycle of discussions, proposals on the way forward, and tests for consensus. If there is no consensus, those against it raise their concerns and the proposals are modified until consensus is achieved and a decision is passed. The whole process can last for more than half a day. These WUAs seem to converge in justifying this protracted decision-making model. They argue that it is inclusive and as many members as possible participate and cooperate in striving to reach the best possible decision for the group. Cleaver (2000) made similar observations on the lengthy meetings in Nkayi, a district in western Zimbabwe. In the Nkayi case, Cleaver (2000) notes that this decision-making process could stretch over several meetings until a common base of understanding is achieved, assuring cohesion and a lessening of the ensuing need for monitoring and sanctions. Cleaver (2000) acknowledged that while the decision-making process is high on transaction costs, it may be considered highly efficient in ensuring compliance with the decisions that are made.

Representation of the WUAs in the new water councils

The Water Act of 1998, together with the Zimbabwe National Water Authority (ZINWA) Act, provided the legal framework that led to the birth of new institutions of water. ZINWA is a parastatal body set up by a statute. It was mandated with authority to control and administer both ground and surface water on behalf of the state. The country was subsequently delineated into seven catchments or hydrological units namely, Gwayi, Manyame, Mazowe, Mzingwane, Sanyati, Save, and Runde, based on the country's major river systems. Sub-catchments were also delineated in each catchment and, together, these were adopted as the water resources management units. Each stakeholder category elects a representative into the sub-catchment councils (SCC) to safeguard the group's water interests. The SCC, itself, should not have more than fifteen members; the catchment council (CC), on the other hand, is composed of members from the SCCs, who include the chairpersons and their vice-chairpersons and one or two other members. The two councils, the Upper Mzingwane Sub-catchment council (UMSCC) and the Mzingwane Catchment council (MCC), are the new stakeholder platforms in which the interests of the water users in the small Zhulube catchment are represented.

An investigation of awareness of catchment councils in the Zhulube area

Neither the Zhulube irrigation scheme WUA, nor the community garden WUAs were aware of the new water councils. Asked about their participation in the water sector reform process of 1995 to 1998 that produced the legal framework for the water councils, the irrigators professed that the consultative process, if ever it was held, skipped their entire community. Such low levels of public awareness impacted negatively on stakeholder participation. One of the conditions that make citizens more likely to participate in government decision-making processes is when "…they are well-informed about the issue or opportunity concerning them…" (Ohio State University, 2000). The lack of awareness of the councils by the Zhulube smallholder irrigation WUAs was well corroborated by the ward councilor, who added that the water councils still have a lot of awareness creation work to do if they expect people to cooperate with its so-called statutory obligations. While the grassroots profess lack of awareness of the water councils, one wanders why the scenario is as it is some seven years or so after the councils were established. The fact that Zhulube is severely water-stressed should, in a way, have made the people inherently obligated to be aware of water councils, especially seven years after they were introduced. Consequently, none of the WUAs are paying fees for the use of water to both the UMSCC and ZINWA, as is required by the statutes.

Representation of smallholder irrigators in the UMSCC

The smallholder irrigation sector does not have a representative in the UMSCC. The stakeholder groups, which had representatives, were the communal farmers, small scale commercial farmers, large scale white commercial farmers, Rural District Councils (RDC), and the Urban Authorities. Each sector elects its own representatives. Smallholder irrigation, unlike other sectors, does not have a union or body to represent their interests. This probably explains why the sector lacks representation in the sub-catchment council. This agrees very well with one of the conditions that Ohio State University (2000) developed to help understand what can facilitate citizens to participate in government decision-making processes. This condition states that citizens are more likely to participate when they "…have an appropriate organizational structure or group available to them and feel comfortable within that structure or group …" In our analytical framework, we suggested a union of formal and informal irrigation WUAs, especially at the micro-catchment/local level.

The question of the election process is also important in our endeavor to understand the concept of representative democracy (Lowry, Adler, & Milner, 1997). On the election process, itself, the sub-catchment chairman explained that the sub-catchment council just receives names of elected councilors from their respective stakeholder unions. The chairman does not know how the individual councilors are elected in their individual sectors/unions. As previously alluded to, other research studies asserted that the entire process of setting up the catchment and sub-catchment councils in Zimbabwe and the election of the respective councilors were hasty and without proper consultation of the stakeholder groups represented (Kujinga, 2002). The legitimacy of the representatives may then be questionable, thereby compromising the participatory representation of the stakeholder groups.

According to minutes of previous meetings of the UMSCC, the dominant issue is the lack of finance to carry out the sub-catchment council duties. These duties include holding meetings, the processing of water permit applications, and the monitoring of the exercise of granted permits and conducting water users awareness meetings. In agreement with the reviewed minutes, the chairman confirmed that no issues concerning smallholder formal and informal irrigators were ever mentioned. This was mainly attributed to lack of representation of the group at this platform.

Previous council meetings revealed concerns by the chairman on the irregularity of meeting schedules. Sub-catchment meetings are reduced to only two meetings annually, against a requirement of once every month for both the catchment and sub-catchment council meetings (Manzungu, 2002). The reason for this trend, according to the chairman, is because of the financial constraints coupled with the transport problems caused by the shortage of fuel in the country. Related to this was the low turn out for council meetings as some councilors fail to attend meetings. The representation of stakeholders, whatever their identity (even if smallholder irrigation was represented) is, therefore, severely compromised when meetings are not held or when the representatives skip meetings. Is the sub-catchment council an appropriate organizational structure available to water users for expressing their interests? The Ohio State University (2000) asserted that, "…if they [citizens] view the organization as cumbersome, time consuming, dictatorial, or grossly inefficient, they will not join, will withdraw after joining, or their dissatisfaction may be evidenced by high absenteeism, or a general unwillingness to be supportive or

cooperative". The fact that the UMSCC meetings are infrequent and have high absenteeism may be a demonstration that the sub-catchment council is inappropriate as an institution for expressing water users' interests.

Similar studies on the operation of catchment and sub-catchment councils also observed that the attendance at the meetings, especially by the rural people, tended to be erratic (Manzungu, 2002). Manzungu (2002) further noted that the situation got worse when there was no money to cater for transport and accommodation, and it somewhat improved with the availability of donor funds. Another classic example is that of the Save the Catchment Council, which was inaugurated in July, 1999, was unable to hold a single meeting or carry out any catchment activity till May, 2000, when funding was secured from the Swedish International Development Agency (SIDA) (Kujinga, 2002). Using this data and the case of the absenteeism to meetings of the UMSCC, we can illustrate in our analytical framework and, according to the Ohio State University (2000), which citizens are more likely to participate in government decision-making processes when they can see positive benefits to be gained. The citizens usually participate when the benefits outweigh the costs; benefits seldom come without costs. The costs could be in the form of money, costs for not participating, time, and other things. The councilors use their own scale of values to determine whether or not to participate in the meetings. If the high absenteeism by the councilors is due to the lack of money to cover the transport and accommodation costs (Manzungu, 2002), then it can be argued that the benefits of participating in the sub-catchment councils is questionable. It implies that the benefits are low and insufficient to outweigh the reasonably low costs of transport and accommodation. In our analytical framework, we suggest a benefits flow from the sub-catchment council to the union of formal and informal irrigation WUAs in return for an obligations flow from the WUAs union back to the sub-catchment council.

Representation of smallholder irrigators in the MCC

At the MCC table, the four UMSCC members drawn from the white commercial farmers, urban councils, and communal farmers' representatives proceed to represent the sub-catchment council. The custodians of the interests of smallholder irrigation and, indeed, all the other stakeholder groups now lie with these four councilors. All the four members are not really close to smallholder irrigators, both spatially and in their day-to-day activities. This state of affairs make the representational participation of formal and informal smallholder irrigators at the MCC level weak, especially given the fact that their seat is already vacant at the UMSCC table. Asked on what issues concerning smallholder irrigators they have taken up to the MCC table, all four of the councilors said none. A pattern also emerged at the MCC table where all of the sub-catchment council's representatives had no representatives from the smallholder irrigators.

The issues dominating the MSCC meetings were similar to those frequently recurring at the MCC table, according to minutes of their past meetings. Such issues include that of levies and the insufficient financial resources to fund the activities of both the catchment and sub-catchment councils.

CONCLUSION

The framework as a diagnostic tool

The framework helped us understand what shapes the participation in smallholder irrigation activities of the rural community in Zhulube area. It further helped us understand how the WUAs of this tiny catchment of about 45 square kilometers, linked into the UMSCC and the MCC, respectively, as the higher institutional tiers of integrated water resources management in the larger Mzingwane catchment.

The structural factors of age, wealth, gender, family labor availability, and farming experience contributed to the attainment of membership in the Zhulube formal irrigation WUA. The same structural factors explained the exclusion of other community members from the formal irrigation activities in Zhulube. Those in positions of leadership in the WUA had family, social, religious, and outside agencies connections (social capital). Through linkages into social capital, they exercised their agency to get into leadership positions and influenced the institutional arrangement as final decision makers.

Similarly, the availability of family labor and the affordability of a joining fee were the leading factors to attain membership in the Zhulube Community garden WUA model. Therefore, families with labor constraints and those who could not afford joining fees found themselves excluded. This category mostly included families of poor people and those of the elderly and the infirm. The latter are a significant group owing to the ravages of HIV/AIDS in the community. There were reports of many patients needing care and also reports of HIV/AIDS related deaths. Also, clearly dominating the majority of the membership were women, most of which were of the middle age class. It can also be argued that the structural factors of gender, education/literacy, and age emerged to explain the participation of individual members in the Zhulube community garden WUA model as leaders. The power of the literate few in Zhulube is readily noticeable. These women occupy leadership positions in the WUAs and, indeed, in other spaces of collective action.

A network of linkages existed between the individual irrigation WUAs and the external agencies. Notable linkages/interactions of the WUAs were with the government agencies, World Vision, traditional leadership structures, schools, and other informal arrangements.

The framework clearly diagnosed that both the UMSCC and the MCC are virtually unknown to the water users on the ground in the small Zhulube catchment and, consequently, neither could they have representatives in them. The framework further shows that the representational participation of smallholder irrigators in the UMSCC and MCC is impeded by the absence of positive benefits from the councils and a lack of better knowledge of their purpose. We argue that the smallholder irrigators, themselves, lack an appropriate organizational structure or union from which to articulate their interests, unlike other stakeholder groups in Zimbabwe. The smallholder irrigators feel that no aspect of their “way-of-life” is threatened (in terms of their interests in water) by the new water institutions, hence they feel no commitment to participate.

Improving the framework

This analytical framework can basically be applied to other catchments in Zimbabwe, probably with slight contextually motivated variations. For example, studies contacted (and cited in this study) on stakeholder participation in other catchments shows a lot of similarities to those found in the Mzingwane catchment. Besides, rural communities in Zimbabwe also share a lot of commonalities, making it easier to adapt the framework to the different rural communities.

While the framework helps us understand the participation of rural communities in the smallholder informal and formal irrigation arena in their locale and in the new water councils in Zimbabwe, a number of important questions arise to improve the framework. These include the role of national/party politics and also the economic environment of the day. The key concepts of the framework are representation and participation, both of which may not be definitively defined because of inherent complexities.

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REFERENCES

Agrawal, A. & Ribot, J.C. (1999). Accountability in Decentralization: A Framework with South Asian and West African Cases. *The Journal of Developing Areas*, 33, 473-502.

Ahlers, R. (2005). *From Increasing Participation to Establishing Rights: Evading the gender question in Water Resources Management.* Paper presented at the EMPOWERS Regional Symposium: End Users Ownership and Involvement in IWRM, Cairo. 13-17 November.

Chikozho, C. & Latham, J. (2005). *Shona customary practices in the context of water sector reforms in Zimbabwe.* Paper presented at International workshop on 'African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa'. Johannesburg, 26-28 January.

Cleaver, F. (2000). Moral Ecological Rationality, Institutions, and the Management of Common Property Resources. *Development and Change*, 31, 361-383.

Cleaver, F. & Franks, T. (2005). How institutions elude design: river basin management and sustainable livelihoods. BCID Research Paper No. 12, *Bradford Centre for International Development*. Bradford: University of Bradford.

Cleaver, F. & Toner, A. (2005). How Participation Evolves: An exploration of participation in community-based water management in Tanzania. *Bradford Centre for International Development Research Paper Series.* Bradford: University of Bradford.

FAO. (1999). *Zimbabwe: Smallholder Irrigation Development Project.* Preparation Report, Volumes 1-3. ADB-ZIM. Rome.

FAO. (2005). *Review of Garden Based Production Activities For Food Security in Zimbabwe: A Study for the Food and Agriculture Organization Working Group on Gardens Project.* Harare.

Ferguson, A.E. & Mulwafu, W.O. (2001). *Decentralization, Participation and Access to Water Resources in Malawi.* BASIS CRSP Project Report.

Kujinga, K. (2002). Decentralization water management: an analysis of stakeholder participation in the management of water in Odzi subcatchment area, Save Catchment. *Physics and Chemistry of the Earth,* 27, 897-905.

Lowry, K., Adler, P., & Milner, N. (1997). Participating the Public: Group Process, Politics, and Planning. *Journal of Planning Education and Research,* 16, 177-187.

Manzungu, E. (2002). More than a headcount: Towards strategic stakeholder representation in catchment management in South Africa and Zimbabwe. *Physics and Chemistry of the Earth,* 27, 927-933.

Mayoux**,** L. (1995). Beyond Naivety: Women, Gender Inequality and Participatory Development. *Development and Change*, 26: 235–258

Mtisi, S. & Nicol, A. (2003). *Caught in the Act: New Stakeholders, Decentralisation and Water Management Processes in Zimbabwe.* Sustainable Livelihoods in Southern Africa Research Paper 14. Brighton, UK: Institute of Development Studies, University of Sussex.

Ohio State University. (2000. Ohio State University Fact Sheet – Community Development: Seeking the Good Community. Retrieved from: URL:http://www2.ag.ohio-state.edu/~ohioline/cd-fact/1703.html, on March 13, 2000.

Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. New York: Cambridge University Press.

Ostrom, E. (1992). *Crafting Institutions for Self-Governing Irrigation Systems*, San Francisco: ICS Press.

Ostrom, E. (2000). Collective action and the evolution of social norms. *Journal of Economic Perspectives*, 14(3), 137-158.

Svubure, O. (2007) Participation and Institutional Reform in the Water Sector in Zimbabwe: Case of smallholder formal and informal irrigation in the Mzingwane Catchment. MSc Thesis, UNESCO-IHE, Institute for Water Education, Delft, The Netherlands.

Toner, A. & Cleaver, F. (2006). The evolution of community water governance: democratizing access or localizing inequality? *Bradford Centre for International Development Research Paper Series.* Bradford: University of Bradford.

Water Resources Management Strategy (WRMS). (n.d.). *Towards Integrated Water Resources Management: Water Resources Management strategy for Zimbabwe*. Harare.

World Bank. (1993). *Water Resources Management.* Washington, D.C.: The World Bank.

Zawe, C., Svubure, O., & Shambare, E. (2003). *Dialogue on Water for food*: *Challenges in Irrigation development and management following the land redistribution program in Mashonaland West province of Zimbabwe*. Paper presented at the Workshop Access to Water, its Management, and Use in Food Production. Harare, 27-28 August.

Zimbabwe. (2000a). *Water (Catchment Councils) Regulations Statutory Instrument No. 33*. Harare: Government Printers.

Zimbabwe. (2000b). *Water (Subcatchment Councils) Regulations Statutory Instrument No. 47*. Harare: Government Printers, Harare.

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