

**POLITICAL IMPLICATIONS OF BUILDING SMALL DAMS IN COMMUNAL AREAS OF ZIMBABWE:
THE CASE OF MHAKWE DAM IN CHIMANIMANI DISTRICT**

Oswell Rusinga, Talent Murwendo and Hardlife Zinhiva

Department of Physics, Geography and Environmental Science, Great Zimbabwe University

ABSTRACT

The development of water resources in communal areas of Zimbabwe is now an integral part of the community-based natural resources management. The study sought to examine contentious political issues which characterize the politics of inclusion and exclusion in places with regard to claiming entitlements which resulted from the building of a small dam in Mhakwe Ward in Chimanimani District. A qualitative approach was used to select participants whereby interviewees were purposively selected on the criteria that they were once in the local dam committee, contributed labour during and after the construction of the dam and attended the meetings during the allocation of irrigated land. The study noted that although the government embraced the bottom-up approach to natural resources management and development in order to promote sustainable utilization of natural resources, the development of water resources in communal areas revealed that the success of such projects is beyond mere decentralization of power and authority to local institutions mainly because lack of respecting indigenous knowledge systems is an affront to sustainable development. It has been envisaged that local culture is a key component in attempts to improve sustainable livelihoods. The inequitable allocation of land revealed lack of respect for local dynamics of social and power relations in current sustainable rural development planning because the people who were displaced during the construction of the dam were resettled in the dryland instead of also being prioritised in the allocation of land in the irrigation project.

Keywords: livelihood, dam, rural development, water, community natural resources management

INTRODUCTION

The livelihoods of people in rural areas of Zimbabwe are closely linked to availability, accessibility and management of natural resources such as water for both subsistence and income generation (Mubaya, 2009). The vitality of water among communities in communal areas is manifested in its spiritual, social and economic significance. Water is a sacrosanct resource and its scarcity is a source of anxiety and social disruption because the continuity of life among rural communities revolves around the assured availability and accessibility to water. Traditionally, the norms and controls with regards to governance of the utilisation of water and related resources were ideally premised in that there were no limits imposed in accessing water mainly because of its importance in production and reproduction purposes. Although there were no limits

imposed in utilising water, traditional societies had developed complex mechanisms and value systems which inculcate sustainable utilization of water resources. As in other parts of Southern Africa, Mujwahuzi (2002) point out that communities, for a very long time, have been managing their water resources in a manner that is suggested in the Dublin-Rio Statements of management based on a participatory approach involving all stakeholders from policy makers to local communities. Traditional notions of social order and control were obsessed with promoting communality than individuality because societies believed in the conceptions of descendants and regeneration of the environment as the bases of continuity (Rusinga and Maposa, 2010). These traditional conceptions are ideally characterised in contemporary perspectives of intergenerational equities which inform the concept of sustainable development.

However, the formation of the state and its bureaucratic machinations with the onset of colonialism in Zimbabwe ushered in a new paradigm of development which created contestations over the legitimacy of utilisation of natural resources through various, but conflicting tenure systems and also of what constitutes development between the state and local communities. The Eurocentric perspective privileged ecological modernisation characterised by state-centrism and private ownership over communal ownership. The focus of state control over natural resources was the regulation of individual resource users, whereas indigenous regulatory mechanisms had focused on the regulation of groups of users (Murombedzi, 1998). This generated the politics of claiming entitlement and ownership of territory and its natural resources between the state and local communities and within local communities.

In the post-colonial period, water laws still largely reflect neoliberal perspectives on natural resources governance in Zimbabwe. They are characterised by the politics of inclusion and exclusion with regards to definitions of roles and obligations of institutions which govern the utilisation and management of water and other natural resources. For instance, the Water Act (CAP 20:24) and the Zimbabwe National Water Authority Act (CAP 20:25) do not spell out the roles of traditional leaders such as village heads and spirit mediums (Mubaya, 2009). This assumption of state control over natural resources has been maintained from the colonial era where the colonial governments saw themselves as having the jurisdiction of building capacities which replace pre-existing natural resource management institutions, (Murombedzi, 1998), since traditional customs and norms were viewed as contrary to the process of modernisation. Moreover, top-down policies were part of a political process in which the state was founded, extended and maintained control (Matondi, 2000). Therefore, most water development projects in Zimbabwe did not evolve as autonomous systems, isolated from the state but were created through top-down policies with tight boundaries of administration (Matondi, 2000).

Although rural development in Zimbabwe involves recognition of grassroots institutions which define power and control over the utilization and management of natural resources, in general, the state did not make it a priority to empower traditional authority (Manzungu and Kujinga, 2002). Local communities still appeal for help from administrators, Non-governmental Organisations (NGOs) and the state to manage local resources because grassroots institutions especially traditional authority lack material and financial resources to make autonomous decisions (Manzungu and Kujinga, 2002; Matondi, 2000).

The paradoxes can be seen in cases of determining people who should benefit from projects such as dam construction. The distribution of benefits is complex because the existence of many parties who have different sources of legitimacy poses the challenge of spelling out the real people with the right of access to the dam. This might degenerate to manipulation of modes of clientage which are divisive and subversive. The politics of claiming entitlement and ownership normally result in overt and covert revenge and resentment among those who develop feelings of being excluded. The imaginations and symbolic interpretations of feeling being included or excluded are premised on historical memories, ideologies and images societies used to distinguish what is theirs from what is not-theirs. This is because ideologies are not simply deceptive and imaginary mental relations that individuals and groups live out relative to their material conditions of existence, but are also very much inscribed in the materiality of social and institutional practices (McLaren, 1989 cited in Kincheloe and McLaren, 1994). In this context, the sustainability of livelihoods cannot only be achieved by institutional transformation but also by recognizing the vitality of local traditional cultural value systems which were imparted in natural resources conservation. There is a growing recognition that local-level knowledge and organizations provide the foundation for participatory approaches to development that are both cost-effective and sustainable mainly because sustainable conservation of biodiversity is now seen as inextricably related to culture (Warren, 1992).

CONCEPTUAL FRAMEWORK

During the 1990s, Community-Based Natural Resources Management (CBNRM) was taken up and promoted by a wide range of organizations at the global, regional, national and local scales (Duffy, 2009). There is no need to discuss in detail the main arguments of this conception here because it had been extensively discussed elsewhere by many scholars such as Jones (2009) and Murombedzi (1998), among others. The shift from top-down to bottom-up approaches was seen as a panacea to the inherent problems manifested in the top-down approach which reinforces state-centrism in the management of natural resources while neglecting the role of other stakeholders, especially local communities. Top-down policies were seen as reinforcing the centralisation of natural resources management which does not recognise the realities which form the basis upon which local communities set up controls and norms for distributing and utilizing natural resources. In other words, labels ascribed to rural communities such as ignorant or target groups construct a problem in such a way as to prescribe a predetermined solution and legitimize the actions of development agencies and other public bodies in intervening to bring the intended results while neglecting received environmental wisdom of targeted local communities (Leach and Mearns, 1996).

Nemarundwe (2003) points out that local controls include explicit as well as implicit norms and taboos that are often voluntarily observed or tacitly enforced through spiritual belief censure. A bottom-up approach is therefore now appealing to achieve sustainable utilization of natural resources because of the value it places in the rights of indigenous people and the emphasis it put in ensuring that local communities benefit from development projects in their localities. Therefore, CBNRM is seen as a key element to sustainable development by promoting equity in the distribution of benefits among various stakeholders accrued from utilising and managing natural resources.

Since independence in 1980, the Government of Zimbabwe has taken steps to ensure that the formerly disadvantaged Black majority population access productive resources such as land and water (Manzungu and Kujinga, 2002). The Government of

Zimbabwe initiated the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) as a method of promoting CBNRM. The programme has been represented as an antidote to the colonial 'fortress conservation' which undermined people's control over their environment (Wolmer, 2007). The CAMPFIRE model had made great strides in decentralizing natural resources management and provided a model for conservation and development practice that was used as a template in sub-Saharan Africa and beyond (Murombedzi, 2005 cited in Duffy, 2009). Initially, the thrust of the CAMPFIRE programme in Zimbabwe was towards wildlife use but this has now shifted to include other natural resources (Chenje et al., 1998). In this context, the utilization and management of water resources have also been integrated into the CAMPFIRE programme. Water management functions have also been decentralized to the catchment or watershed scale where stakeholders have a larger say in the management of water in their own areas (Makurira and Mugumo, 2003). A community-based approach is very important in water resources management in Zimbabwe given the diminishing of water sources and contentious issues involving the politics of entitlement and ownership among different claimants.

Decentralisation of power and authority to local institutions is being overshadowed by official hesitation to fully acknowledge the authenticity of traditional wisdom in natural resource management mainly because the state privileges ecological modernism over indigenous natural resources management systems. This is, to a greater or lesser extent, not deliberate because most of the researches have tended to concentrate on visible and formal institutions yet there are other hidden and informal institutions, such as social networks, that are important for appropriating natural resources (Sithole, 2001 cited in Nemarundwe, 2003). Moreover, the traditional natural resource management systems recognise flexibility in natural resource use and distribution. Hughes (2006) argues that Africans do cherish land but not as discrete parcels of bounded hectares. Geographical delineation of the landscape into fixed and discrete units creates ambiguities in controlling resource use among neighbouring communities. Historically, communities were and are still not bounded, homogenous entities, but rather socially differentiated and diverse (Nemarundwe, 2003).

OBJECTIVES OF THE STUDY

The study examined the contentious political issues which characterize the politics of inclusion and exclusion in places and spaces with regard to claiming entitlement which resulted from the building of a small dam in Mhakwe Ward in Chimanimani District. This study was guided by two specific objectives. Firstly, it examined the principles used to determine the selection of beneficiaries. The second specific objective sought to discuss the political implications of water development in the ward resulted from an attempt to claim legitimate entitlements to the benefits of the project.

STUDY AREA

Mhakwe Ward is found in Chimanimani District located in the south-eastern part of Zimbabwe and is about 150km from the City of Mutare. The ward is located in agro-ecological region two. It receives mean annual rainfall of between 700-1000mm and the temperatures are cool. Annual rainfall averages permit summer season crop cultivation but the area is vulnerable to both inter- and intra-seasonal rainfall variability. The physical terrain is characterized by rugged mountains and deep valleys dissected by rivers and streams. The ward is in the Nyanyadzi Catchment Area. The major rivers supplying water in the area throughout the year are Mhakwe, Shekani and Matanho. Mhakwe Dam is sited on Matanho River. The physical landscape

appears to be the major influence of human settlements since most people live on low lying areas. Subsistence agriculture is the major economic activity in this area. Crops grown include maize, sorghum, millet, beans and sunflowers, among others.

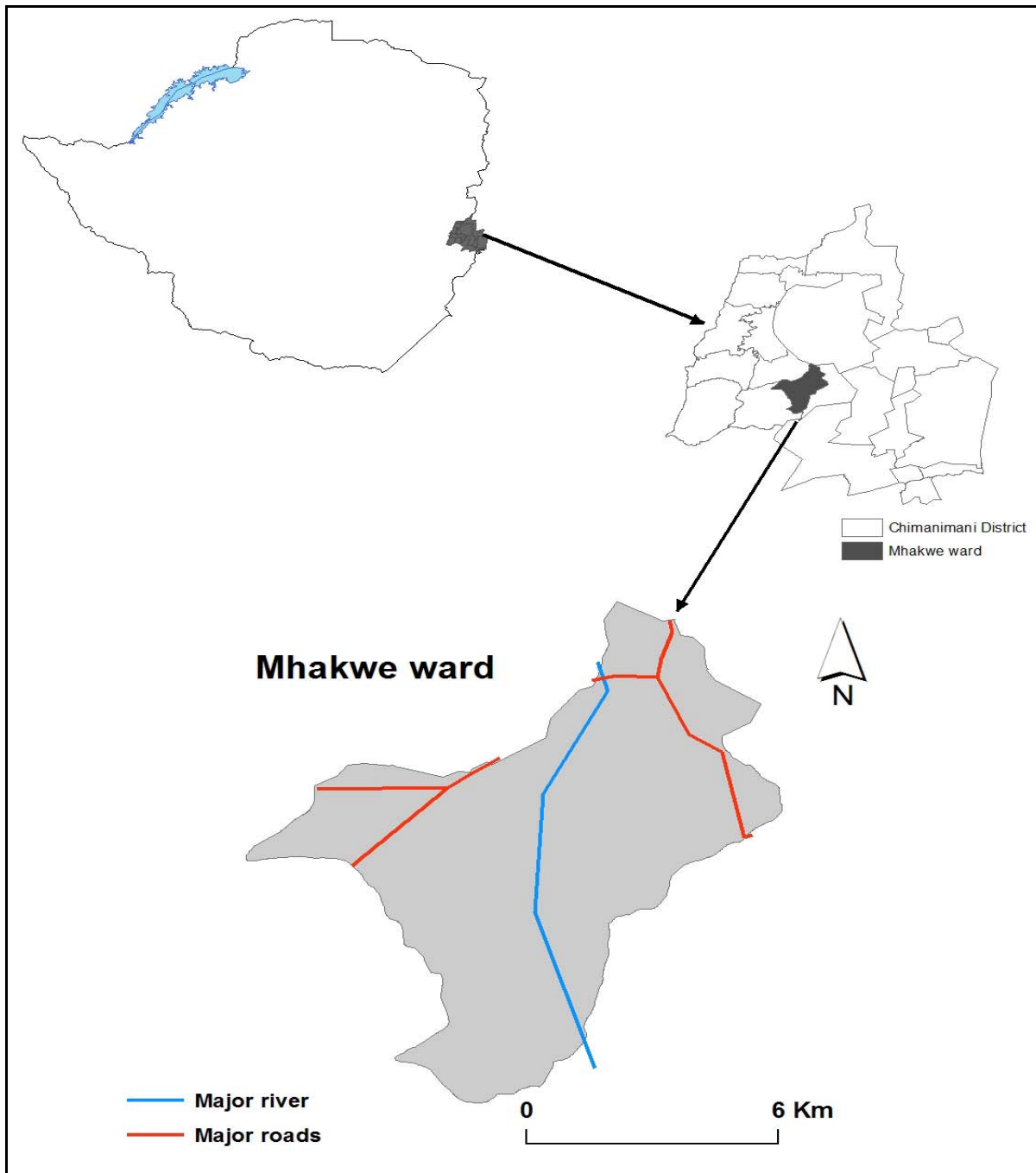


Figure 1: A Map Showing Zimbabwe, Chimanimani District and Mhakwe Ward

METHODOLOGY

The study employed a qualitative approach where respondents were purposively selected to get an in-depth insight into political contentious issues in controlling access to the dam. These were individuals who at one time held positions in the committee which drafted the by-laws used to govern access water in the dam and also to the dam; those who are in the

committee which has the responsibility for overseeing whether people are adhering to the by-laws and some individuals who attended meetings before, during and after the building of the dam mainly because the aim of the study was to understand the contending issues from the local community point of view. This is important because the local community determines the nature of symbolic capital, which is a product of distinctive historically specific forms of social organization and imaginings and these imaginings in their ideal forms, determine the allocation and use of land and water resources (Matondi, 2000). They also help in understanding the politics of alienation and clientage. In addition, given that the local community drafted its proposal and by-laws, the study desired to investigate the institutional shortcomings of the local committee to implement its plan. Twenty five unstructured interviews were conducted with the respondents in the ward to elicit for opinions and perceptions of local people about the effectiveness of the criteria used to select beneficiaries of the dam project. Document analysis was also used to understand the controversies revolving around water development and management in communal areas.

RESULTS AND DISCUSSION

Purpose of Constructing Mhakwe Dam

The building of Mhakwe dam was an integral part of integrated rural development which attempts to develop natural resources such as land and water for the benefit of the local people. According to Bongo and Bourdillon (2001), the Ministry of Water and Department of Natural Resources constructed Mhakwe Dam in Chimanimani District under the CAMPFIRE project and the construction was completed in 1994. The main objectives of constructing the dam were to provide water for irrigation on the lower side of the dam and for fish project. In the holistic sense, the idea was to improve sustainable utilization of natural resources by reducing pressure on the most utilised natural resources. The Department of Natural Resources was anticipating that as an income-generating project, fishing would occupy people and leave them without time for craftwork thereby curbing tree cutting and bark stripping. Basically, the irrigation project was to boost crop and vegetable farming in order to improve food security and also for sale. Fishing was mainly to be an income-generating project. According to the respondents, the local community proposed to source donor funding in order to purchase refrigerators, boats and nets and installation of electricity at the dam. This reflects a commercial outlook of the project.

Management of the Dam

Although the government provided the technical and monetary resources for constructing the dam, 84% of the people who were interviewed reported that the local community worked with the government to come up with the idea. Therefore, they wanted exclusive control of the dam after construction, that is, the local community was to have autonomy in making decisions and controlling use of the infrastructure and access to the dam. The local people proposed that they do not like to have the Ministry of Water employees who built the dam come and fish as they like without the locals' consent (Bongo and Bourdillon, 2001). An elected committee was responsible for managing and controlling use of the infrastructure. By 14 July 1999, workshops were held to draft by-laws to be used on the dam (Bongo and Bourdillon, 2001). The committee was also to ensure that people who wanted to fish in the dam were to pay a small fee and was mandated to keep records for money collected. The study noted that people allocated plots in the irrigated area were paying US\$3 per month. This is in line with national water reforms which seek to promote water management self-financing (Manzungu and Kujinga, 2002).

Criterion Used for Selecting Beneficiaries

Technically, the dam project was intended to serve the whole of Mhakwe ward, particularly the fish project and five villages were to benefit from the irrigation project. The intended beneficiaries of the irrigation project were to be exclusively selected from Chikutukutu, Muchada, Mukowangedai, Nechirinda and Zimunda villages. The criterion for selecting the beneficiaries of the irrigation project was based on politico-geographical, socio-economic and cultural factors. Due to shortage of land and small size of the dam only 50 households got land for irrigation and were selected from Chikutukutu, Mukowangedai and Nechirinda. The households who used to farm in the area designated for irrigation were the first to be considered and were allocated plots of one acre in size. Among these households, the household heads were to register some of their sons. One of the interviewed said, *“It was agreed during the meetings that those who already had plots in the area designated for irrigation were to register two sons in the irrigation project and then gave the remainder to others (non-relatives).”* Disadvantaged women particularly widows were also allocated land.

Symbolic Capital and Customary Entitlements

The allocation of land on the lower side of the dam for irrigation was the most contested issue largely because there were people who had been farming in the area designated for the irrigation project and they used customary rights to claim entitlement to the area. Although the area was very small, the criterion used for allocating land reflected, to a greater extent, customary entitlements to land rather than the objectives of the dam project and principles of equity and democracy. The people who had been farming in the area before the irrigation project were the first to be given land and were empowered to choose people they wanted to apportion land. Such respect of customary entitlements promoted the politics of clientage and ultimately used as a source of capital accumulation.

However, these people were reluctant to apportion some of the land to others, arguing that they had no other land for farming elsewhere. A woman reinforced this point by remarking, *“The owners of plots complained because they did not have any other land to cultivate besides the one in the area designated for irrigation.”* Moreover, some people argued that the tension was also complicated by giving people who used to farm in the area designated for irrigation the authority to choose people they wanted to apportion land. One of the interviewed men revealed *“They [people farming in area designated for irrigation] wrote the names of their relatives first, that is why people complained.”* The criterion was susceptible to manipulation because, one of the women interviewed revealed that, *‘a person with land in the irrigated area was to be apportioned land in the dryland by the person he/she apportion his/her land in the irrigated area.’* Previous studies have noted that irrigation schemes are seen as public institutions expressive of social relations, status, prestige and honour (Matondi, 2000).

This created a dilemma of defining beneficiaries of the project and legitimacy of accessing to natural resources because the people displaced during the building of the dam did not get land in the irrigated area but were resettled in the dryland. What is implicit is that while those displaced during the building of the dam did not benefit during the allocation of land, the people who had plots in the area designated for the irrigation project were the first to benefit using customary rights to legitimise their claims to land. Berry (2002 cited in Alexander, 2006) argues that struggles over land in Africa are as much about power

and the legitimacy of competing claims to authority, as about control of property per se. To a largely peasant rural populace in Africa, ownership of land for settlement, and as a means of production, is vital for survival, and is at the core of local political agenda (Richards, 1983 cited in Mutimukuru-Maravanyika, 2010). The situation became more complicated because people who were evicted from the place where the dam was built lost their property and therefore were expecting to benefit as a compensation of losses of their property. One of the interviewed people who were displaced said, “*We were not happy because our houses were destroyed and our farming areas and fruit trees were taken by the dam area and worse we were not given land in the irrigated area.*”

Power, Legitimacy and Conflict Resolution

The adjudication of land disputes in communal areas remains controversial due to overlapping and duplication of roles between the traditional authority and elected leadership. The situation is complicated by parallel structures such as ward and village development committees which tend to claim their legitimacy from the state. This inevitably leads conflicts or tensions to emerge because some sections of the stakeholder institutions do not have autonomous powers to make binding decisions. Manzungu and Kujinga (2002) pointed out that the question of how the distributed resources will be governed has not been spelt out adequately in legislation and policies. This anomaly surfaced after the construction of Mhakwe Dam was completed. The elected local committee was given the mandate to monitor the allocation of land and preside in processions of resolving tensions which arose from competing claimants but it lacked financial and political resources to effectively implement its decisions. It found itself wanting and continually looked for assistance from the District Administrator’s office. Although there was a headwoman (*Sadunhu*) in the committee, the role of the traditional authority in land disputes was not acknowledged.

After a series of meetings, the local committee failed to resolve the dispute and it sought assistance from the District Administrator’s office. This revealed the ambiguity and duplication of definitions of roles in adjudication of disputes related to access to water and land resources which can be easily manipulated by those who try to justify their claims. Moreover, the duplication of roles between structures exposed power struggles between the traditional authority and elected local leadership. Although state interventions created and transformed the institutions that shaped access to and the use of land and the means by which access and use of land is justified and legitimized (Alexander 2006), appealing to the state for assistance without acknowledging the role of traditional leaders in land disputes made it difficult, if not impossible, to justify claims based on customary rights. This is because the authority of the custodian of customary rights, that is traditional leaders, was compromised during the mediation of the land disputes.

The District Administrator resolved the dispute, with the co-operation of traditional leaders, by resettling people who had been displaced during the construction of the dam in the neighbouring dryland arguing that both the area designated for irrigation and the dam were very small to serve the whole ward. The study noted that, although the general consensus was that the dam was very small, most of the people were distrustful about the way under which the land was allocated. People were expecting equity during the allocation of land. One woman pointed out that “*people were expecting the allocation*

procedure to reflect inclusivity not to allocate to people from one clan, like the owner of the plot is given first then the remainder is given to those who do not have.”

Implications of the Inclusion-Exclusion Paradox

The assurance that those who did not benefit from the irrigation project shall be the first to benefit from other projects in future and the evidence that the fish project was unrealistic generated feelings of resentment, jealous and sabotage. The refrigerator and money for buying some equipment for the fish project disappeared and the members of the committee of the dam project were the main suspects. The management of the project plunged into chaos because the Rural District Council, traditional leaders and the local people in general withdrew their co-operation especially in the management of the fish project. This gave in to sabotage since the fence around the dam was vandalised and stolen. People were fishing for free because people deliberately refused to pay the fee and there were no people to collect the money.

Historically, sabotage was not so much the result of ‘misunderstanding’ the science of technical development, of seeing it as ‘irrational’, as understanding all too well that it was an integral part of the ‘trickery’ involved in ruling Africans and robbing them of resources (McGregor (1991, as cited in Alexander 2006). In the post-colonial period, the distribution of benefits from the development of natural resources still reflects the extension of the power and domination of the state. Development plans based on idyllic images of community have, however, largely performed below expectations and much of the failure reflects the fundamental contradictions between planning on the basis of assumptions of homogeneity and fixity in an otherwise complex and dynamic world (Scoones 1996 cited in Mandondo, 2000).

Such development planning is ideally characterized by over-expectations and exaggeration of benefits. Mandondo (2000) argues that development planning must go beyond the mere targeting appropriate communities because this gives some local powerful people the power to manipulate rules in such a way that they are inclusionary in respect to cost, but exclusionary in respect to benefit. People provided labour during the construction of the dam, such as digging trenches for pipes, whenever the need arose. There was high anticipation of benefiting from the dam project particularly in the irrigation project.

CONCLUSION

Although the Government of Zimbabwe embraced the concept of sustainable development since the 1990s, it is still a mystery to envisage the extent to which received indigenous wisdom and knowledge have been embraced in promoting sustainable utilization and management of natural resources in communal areas. The government spearheaded the CBNRM concept with caution since it created parallel structures which compete with traditional institutions in adjudication of local conflicts or tensions in accessing natural resources. Understanding ideological and political perspectives of local communities in the governance of natural resource conservation, in general, helps in reducing trade-offs and improving the equity distribution of benefits accrued from the development of water resources. From the discussion above, the notion of state-centrism is still the guiding ideology in water resources development in communal areas in Zimbabwe. This shows that the state mistrusts the capacity of local communities in managing common property resources. However, state development planning ideally causes over-expectations and exaggerates benefits even when resources are scarce.

REFERENCES

- Alexander J. (2006). *The Unsettled Land: State-Making and the Politics of Land in Zimbabwe 1893-2003*. Harare: Weaver Press.
- Bongo P. P. and Bourdillon M. F. C. (2001). Intervention in Natural Resource Use in Biriwiri, Zimbabwe. *Zambezia*, 28 (2), 133 – 145.
- Chenje M., Sola L., and Paleczny D. (1998). *The State of Zimbabwe's Environment 1998*, Harare: Government of Zimbabwe.
- Duffy R. (2009). Global-local Linkages. The Meanings of CBNRM in Global Conservation Politics. In Mukamuri B. B., Manjengwa J. M. and Anstey S. (Eds.), *Beyond Proprietorship. Murphree's Laws on Community-Based Natural Resources Management in Southern Africa*, Harare: Weaver Press.
- Kincheloe J. L. and McLaren P. L. (1994). Rethinking Critical Theory and Qualitative Research. In Denzin N. K. and Lincoln Y. S. (Eds.) *Handbook of Qualitative Research* (pp138 -157). London: Sage Publications Inc.
- Leach, M. and Mearns, R. (1996). Environmental Change and Policy: Challenging Received Wisdom in Africa. In Leach M and Mearns R (Eds.) *The Lie of the Land. Challenging Received Wisdom on the African Environment, Africa Issues*, London: The International African Institute.
- Makurira H. and Mugumo M. (2003) *Water Sector Reforms in Zimbabwe: The Importance of Policy and Institutional Coordination on Implementation*. Proceedings of the African Regional Workshop on Watershed Management Nairobi, Kenya, 8 – 10 October 2003. Retrieved May 16, 2011, from <http://www.fao.org/docrep/009/a0380e/a0380e00.pdf>.
- Mandondo A. (2000). Situating Zimbabwe's Natural Resources Governance Systems in History. *Occasional Paper No. 32*. Jakarta: Centre for International Forestry Research. Retrieved May 9, 2011, from http://www.cifor.cgiar.org/publications/pdf_files/OccPapers/OP-32.pdf.
- Manzungu E. and Kujinga K. (2002). The Theory and Practice of Governance of Water Resources in Zimbabwe. *Zambezia*, 29 (2), 191 – 212.
- Matondi P. (2000). Access to Land and Water Resources in Zimbabwe's Rural Environments. In Tevera D. and Moyo S. (Eds.), *Environmental Security in Southern Africa*, Harare: SAPES Books.
- Mubaya C. P. (2009). Gender Issues Surrounding Water Development and Management in Chishawasha Settlement Area. In Mukamuri B. B., Manjengwa J. M. and Anstey S. (Eds.), *Beyond Proprietorship. Murphree's Laws on Community-Based Natural Resources Management in Southern Africa*. Harare: Weaver Press.
- Mujwahuzi M. R. (2002). Community-Based Water Resources Management. In Hirji R., Johnson P., Maro P. and Matiza-Chiuta T. (Eds.), *Defining and Mainstreaming Environmental Sustainability in Water Resources Management in Southern Africa*. Maseru: SADC.
- Jones A. (2009). Trying to Make Sense of it All: Dealing with the Complexities of Community-Based Natural Resource Management. In Mukamuri B. B., Manjengwa J. M. and Anstey S. (Eds.), *Beyond Proprietorship. Murphree's Laws on Community-Based Natural Resources Management in Southern Africa*. Harare: Weaver Press.
- Murombedzi J. C. (1998). *The Evolving Context of Community-Based Natural Resource Management in Sub-Saharan Africa in Historical Perspective*. Plenary Presentation, International CBNRM Workshop Washington D.C., USA, 10-14 May 1998. Retrieved April 20, 2011, from http://www.info.worldbank.org/etools/docs/library/.../May98Workshop_Report.pdf.
- Mutumukuru-Maravanyika T. (2010). *Can We Learn Our Way to Sustainable Management? Adaptive Collaborative Management in Mafungautsi State Forest, Zimbabwe*, Unpublished PhD Thesis, Wageningen University, The Netherlands. Retrieved May 10, 2011, from <http://www.edepot.wur.nl/136242>.

Nemarundwe N. (2003) 'Managing Micro-Catchment Resources: Institutional Arrangements for Water Use in Chiwi District, Zimbabwe' *Proceedings of the African Regional Workshop on Watershed Management Nairobi, Kenya, 8 – 10 October 2003*. Retrieved May 16, 2011, from <http://www.fao.org/docrep/009/a0380e/a0380e00.pdf>.

Rusinga O. and Maposa R. (2010, September). 'Traditional Religion and Natural Resources': A Reflection on the Significance of Indigenous Knowledge Systems on the Utilisation of Natural Resources among the Ndau People in South-eastern Zimbabwe. *Journal of Ecology and the Natural Environment*, Vol. 2(9) Retrieved May 11, 2011, from <http://www.academicjournals.org/jene>.

Wolmer W. (2007). *From Wilderness Vision to Farm Invasions. Conservation & Development in Zimbabwe's Southeast Lowveld*. Harare: Zimbabwe.

ABOUT AUTHORS

Oswell Rusinga: a Lecturer, Department of Physics, Geography and Environmental Science, Great Zimbabwe University.

Talent Murwendo: a Lecturer, Department of Physics, Geography and Environmental Science, Great Zimbabwe University.

Hardlife Zinhiva: a Lecturer, Department of Physics, Geography and Environmental Science at Great Zimbabwe University.