

The making of a catchment plan: experiences of the Mzingwane Catchment, Zimbabwe

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Abstract

It is almost a decade since the water sector in Zimbabwe was reformed. The 1998 Water Act which replaced the 1976 Act set a legal obligation for the Zimbabwe National Water Authority, ZINWA, and the catchment councils to make outline plans for their river systems. However, to date none of the 7 catchments councils in the country has managed to have an outline plan approved, and this is rather worrisome given the importance of the plans. The Mzingwane Catchment has so far managed to produce a draft outline plan. This research sought to investigate how the Mzingwane Catchment approached catchment planning, particularly how stakeholder participation was undertaken. The catchment has a wide array of stakeholders with different needs and engaging them is critical for making a plan which addresses the needs of the stakeholders. Data collection for this research was based on qualitative research methods, mainly interviews with key informants in ZINWA, the Mzingwane Catchment Council, Mwenezi Subcatchment Council and in the rural district councils within the catchment. Documents such as minutes of meetings were also analysed. Results indicate that while some semblance of stakeholder participation took place, more could have been done to critical engage stakeholders in the process. The methods which were used to collect data, such as questionnaires failed to elicit information from some critical stakeholder groups. The paper also highlights how participation is also a factor of the individual actors, particularly their background and circumstances. The paper concludes that the catchment planning needs to be more involving and also to encompass a wider range of issues.

1. Introduction

It is almost a decade since Zimbabwe ushered in a new water resources management approach. A new Water Act was passed in 1998, and immediately after the translation of policy into action began with the setting up of a national water authority, the Zimbabwe National Water Authority (ZINWA), and 7 catchment councils. The Mzingwane Catchment is one such catchment council. The Water Act (1998) set for these institutions the legal obligation to prepare catchment outline plans for their respective catchments. Among other things, water allocation in catchments is supposed to be based on catchment outline plans. By implication, the plans are also supposed to chart the way for translating the aims of the water reforms into reality. However, years into the reforms, none of the 7 catchment councils has had its catchment outline plan approved, but most have managed to make draft plans. This situation raises questions related to the basis on which water resources are currently being managed, and how sustainability, equity and efficiency, the

main pillars of Integrated Water Resources Management (IWRM) can be achieved. The Mzingwane Catchment is one of the driest catchments in the country and the imperative to have in place a plan-based management approach is urgent given the water scarcity, inequities surrounding access to the resource and the levels of poverty in the catchment.

Legally catchment outline plans are supposed to be prepared with the participation of stakeholders, and this paper uses the case of the Mzingwane Catchment to highlight how the concept of participation is being implemented in the making of outline plans. The paper compares the approaches which the Mzingwane Catchment used with the methods which were employed by one other catchment in the country, the Gwayi Catchment Council. It also uses the draft outline plan which the Mzingwane Catchment has made to show the current focus of catchment plans.

The paper discusses catchment planning in relation to the aims of the water reforms in Zimbabwe and to the concept of stakeholder participation in natural resources management in general and specifically in the water sector. The second part of the paper discusses the approaches which the Gwayi Catchment Council used in the making of its catchment plan. The third section focuses on the making of the Mzingwane Catchment Outline Plan, tracing the project from the period immediately after the formation of the catchment council to the period soon after the submission of the draft plan to the Ministry of Water and Infrastructure Development.

2. A brief history of water resources management in Zimbabwe

A major aspect of the Zimbabwean socio-ecological situation that had to be addressed in post-independent Zimbabwe was the issue of who had access to water and who did not. Prior to independence water resources were mainly controlled by whites. Water rights were given based on land ownership, and that excluded the majority blacks from access to water. Water reforms were therefore part of the process of doing away with relics of colonialism and empowering the blacks. An immediate trigger of the reforms however, was the 1992 severe drought which had profound impacts on both the society and the economy. This drought event pointed towards the need to change approaches to water resources management by having in place mechanisms which could be used to dampen the overall effects of such events in future. The Water Act (1976) was viewed as hindering the entrance of new actors into the productive sector, particularly that of blacks into the commercial agricultural sector. Water scarcity was regarded not only as being physical in nature, but also socio-political in that in a way it was a construct of the colonial government which followed racially discriminatory policies and neglected the development of resources in the African areas. The Priority Date System (PDS) and the allocation of water rights in perpetuity were the major clauses which the Act (1976) was criticised for. Around that time there was also a pronounced shift in the management of natural resources, promoted by international donors and organisations. The concept of sustainable development was dominating the natural resources sector, having been popularised by the Rio Earth Summit. Particular to the water sector, IWRM was also being promoted, and Zimbabwe adopted these new concepts. The reforms therefore were a product of the interplay of factors, some physical, some historical and yet others a response to the international agenda, the common narratives being decentralisation,

privatisation, self-financing, scarcity, and human rights. The Water Resources Management Strategy Document (n.d) summarises the objectives of the reforms as to:

- a. ensure equal access to water by all Zimbabweans
- b. improve the management of the resource
- c. increase the protection of the environment
- d. improve the administration of the Water Act.

The Water Act (1998) abolished the PDS and water rights, replacing them with the permit system. Permits can be revoked, or have some of their conditions altered so that water can be allocated and re-allocated depending on need. Other changes which were introduced were the formation of a national water authority, the Zimbabwe National Water Authority (ZINWA) which was formed to regulate the water sector. National planning functions were also transferred to ZINWA. Stakeholder platforms in the management of water resources were also created. Where they had existed, River Boards were replaced with Catchment and Subcatchment Councils. Catchment Councils were created to collaborate with ZINWA in preparing and updating of catchment plans; deciding on and enforcing water allocation and re-allocation; and developing and supervising programmes for catchment protection. Subcatchment councils were created to monitor the exercise of permits; water flows and use; assist in pollution control, catchment protection, data gathering and to collect fees charged to water users. Functions of the new institutions hinge on catchment planning, which determines water allocations and re-allocations, catchment development plans, catchment protection, and also addresses the broader issues of social equity and economic development.

3.1 The Water Act (1998) and catchment planning

Catchment planning is not entirely a new phenomenon in the water sector in Zimbabwe. River Boards which used to manage water resources for particular rivers made their own plans. River boards were mostly operational in areas where commercial farming was taking place, and these tended to be white occupied areas. As a result, planning for water resources was sectoral with a bias towards meeting the needs of commercial farmers. However, with the promulgation of the Water Act of 1998, catchment planning became a legal obligation for catchment councils and ZINWA. The Act states that catchment planning is important for optimum development and utilisation of water resources. Catchment councils and ZINWA are tasked to make outline plans in consultations with “the authorities and bodies which in their opinion are likely to be concerned with the development of the catchment area ... and the utilization of its water resources.” The Act specifically identifies the drawing up of an inventory of water resources of the catchment area as one of the components of the outline plan. The Water Act (1998) states that an outline plan must indicate:

1. measures for the conservation and improvement of the physical environment of the catchment.
2. how water shall be apportioned between public and private development, and the allocation to the different sectors of the economy.
3. water quality standards which are to be enforced, such as the maximum permissible levels of pollution

4. how developmental projects are to be phased, and the order of priority for the development.
5. the priorities in the utilization and allocation of water.

3.2 Stakeholder participation

Wester et al (2003) trace the use of the concept of stakeholder participation in water resources management to the 1970s when decentralisation in the management of irrigation water and irrigation schemes began. In different parts of the developing world participation has been met with varied success. Mabiza et al (2006) found that in one of the catchments in Zimbabwe most of the stakeholders were not even aware of the existence of the stakeholder institutions through which they were supposed to participate in the management of water resources. This they attributed to limited publicity which reduced the visibility of the institutions. Manzungu (2004) found that participation is also hindered by factors such as the venues where stakeholder meetings are arranged. Wester et al. (2003) argue that the participation discourse draws attention away from the very real and social economic differences between people and the need for the redistribution of resources, entitlements and opportunities. The discourse also obscures the fact that water is a contested resource (Mehta et al, 1999). In a study on participation in subcatchment council meetings Sithole (2000) found that stakeholders face a very uneven playing field for meaningful participation and concluded that devolution as occurred in the water sector in Zimbabwe has not been accompanied by an automatic increase in the influence and participation of all strata in society. Table 1 shows the range of stakeholder groups in the Mzingwane Catchment Area.

Table 1: Stakeholder groups in the Mzingwane Catchment Area

| Subcatchment | Stakeholder groups |
|---------------------|--|
| Upper Mzingwane | RDCs; urban authorities; smallholder farmers; small scale miners; small scale irrigators |
| Shashe | Large scale miners; small scale miners; smallholder farmers; game ranchers; urban authorities; |
| Mwenezi | Large scale irrigators; small scale irrigators; game ranchers; livestock farmers; RDCs |
| Lower Mzingwane | Urban authorities; RDCs; smallholder farmers; livestock farmers |

The table shows that the catchment has a wide range of stakeholder groups, ranging from small scale miners to large industrial operations such as the cement factory works at Coleen Bawn in the Shashe subcatchment. Other activities which use water in the catchment include gold panning and irrigated agriculture. These activities have impacts on the water resources in the catchment in particular, and on the environment in general.

4 The study area

The Mzingwane Catchment Area forms the Zimbabwean portion of the Limpopo River Basin. The catchment lies mostly within Matabeleland South Province of Zimbabwe, but some of its parts are in the Masvingo and Midlands provinces which are also in Zimbabwe. It is divided into four subcatchments, which are Upper Mzingwane; Lower Mzingwane, Shashe and Mwenezi. The main tributaries of the rivers in the catchment include the Shashe, Mzingwane, Mwenezi, Insiza and Bubi Rivers. Figure 1 shows the Mzingwane Catchment Area.

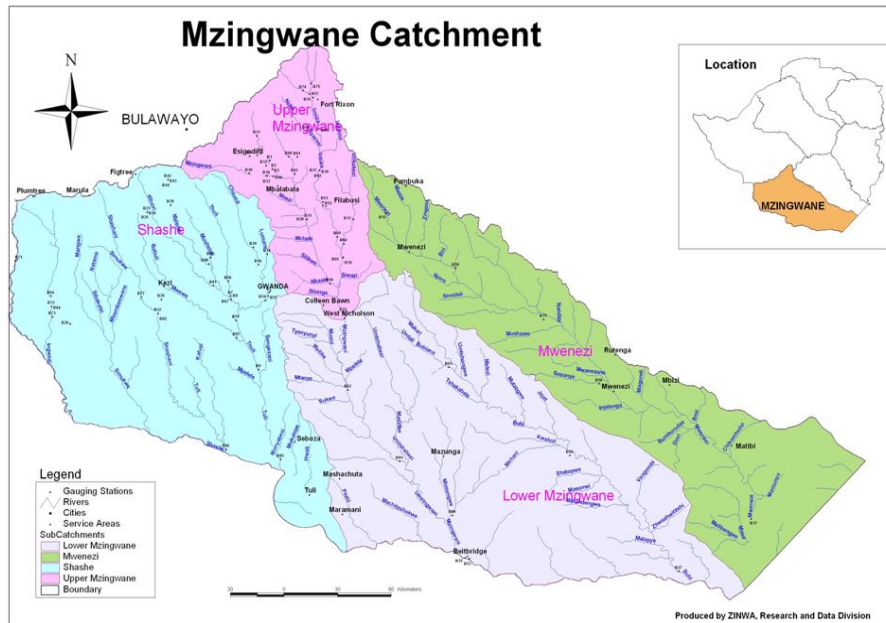


Fig.1 The Mzingwane Catchment

Rainfall generally decreases in a north-south orientation in Zimbabwe, and the Mzingwane Catchment Area lies in the southern part of the country. The same trend is also true within the catchment with northern reaches of the catchment receiving more rainfall than the southern end of the catchment. Areas in the Upper Mzingwane Subcatchment which is in the northern part of the catchment receive between 450-600mm/a while the Lower Mzingwane which is in the south receive as low as 200mm/a (Love et al, 2005).

There are 8 Rural District Councils (RDCs) in the Mzingwane Catchment. Main urban centers in the catchment are Beitbridge; Gwanda; and Plumtree. Smaller centers include Filabusi; Mataga; Neshuro and Coleen Bawn. The latter is a settlement based largely on cement production while the former 3 are rural centers. Bulawayo, which is the second largest city in Zimbabwe, is in the Gwayi Catchment, but gets most of its water from dams in the Mzingwane Catchment. The city is supplied with water from the Mzingwane, Upper and Lower Ncema, Inyankuni and Insiza dams, which are in the Mzingwane Catchment.

The Mzingwane catchment has an area of 63 000 km². Major water uses in the catchment are for domestic, industrial, mining and agricultural purposes. Gold mining is an important activity in the catchment, occurring at different scales such as the Blanket Mine which has several hundreds of employees and is owned by a transnational corporation, to smaller mines operated by a few individuals. Gold panning is also common in the catchment. Of the total population in the Mzingwane Catchment, 66 % lives in rural areas. Cattle ranching is a very important agricultural activity in the catchment, and some of the largest cattle ranches in the country are located in the catchment. There are also wildlife conservancies in the catchment. Poverty is rampant in Zimbabwe and a report by the Government of Zimbabwe and the United Nations (2004) estimates that by 2002, 69% of the population live below the Food Poverty Line while 80% of the population live below the Total Consumption Poverty Line. In the dry Mzingwane Catchment the statistics could be worse than the national averages suggest. It is also notable that economic conditions have been on the decline for a successive years and this could also be another factor worsening human conditions.

The Mzingwane Catchment Area is rather unique in that unlike in other catchment, a number of problems, some natural, like low rainfall totals, and others socio-economic, like poverty, converge in the catchment. Just to highlight a few of the problems, most of the smallholder farmers in the catchment rely on rainfed agriculture, and because the rainfall is usually erratic, low, and the length of dry spells long, crop failure is common. This often leads to food insecurity among the smallholder farmers. However, some parts of the catchment are well endowed with blue water resources, yet smallholder farmers have no means of harnessing the water. Environmental degradation is also common in the catchment, gold panning being the main driver. Some of the effects of gold panning include the deposition of sediments, sulphates, heavy metals such as mercury to the river system and also changing the river morphology (Tunhuma, 2007).

4. Methods

The research was based largely on qualitative data and it relied on document review and interviews for data. Minutes of meetings of the Mzingwane Catchment Council, ZINWA and the Mwenezi Subcatchment Council dating back to the period immediately after their formation were analysed. Since catchment planning is a statutory requirement, the basis for document review was that such tasks tend to be well document for records' purposes. Other documents such as memorandums and letters written to the catchment council were also content-analysed. Key informant interviews were used to collect data. Interviews were held with the Catchment Manager; the Catchment Chairman; the Catchment Coordinator; members of the Lower Mzingwane Catchment Council and the Mwenezi Subcatchment Council. In addition interviews were also held with the Director of Engineering Services for the Bulawayo City Council who is also the city's representative in the Mzingwane Catchment Council, and officials from rural district councils within the catchment. Table 2 shows the key informants for this research.

Table 2 Key informants

| | | |
|-----------------------------|-----------------------------------|----------------------------------|
| Rural District Council | Stakeholder institution | Key informant |
| | Insiza RDC | District Engineer |
| | Mberengwa RDC | Principal Officer |
| | Neshuro RDC | Principal Executive Officer |
| | Mangwe RDC | Chief Executive Officer |
| | Gwanda RDC | Chief Executive Officer |
| Urban authorities | Bulawayo City Council | Director of Engineering Services |
| | Beitbridge Town Council | Town Engineer |
| | Plumtree Town Council | Town Secretary |
| ZINWA | Mzingwane Branch | Catchment Manager |
| | | Catchment Coordinator |
| Mzingwane Catchment Council | | Catchment Chairman |
| | Mwenezi Subcatchment | Data Collector |
| | Mwenezi Subcatchment | Councillor |
| | Lower Shashe Subcatchment Council | Councillor |

5. Findings

5.1 State of catchment planning in Zimbabwe

All of the 7 catchment councils in Zimbabwe have catchment outline drafts at various stages of preparation. At least 4, the Mzingwane, Mazowe, Gwayi and Manyame, have submitted their draft plans to ZINWA and the Ministry of Water and Infrastructure Development. On average it has taken each catchment at least 3 years to come up with a draft. No one catchment has had its plan go through all the stages necessary for its approval. This development is rather worrisome especially given the importance of planning to water resources management. Gwayi Catchment Council took a very different route from the most of the catchment councils in the country. The catchment council, using donor funds, engaged a team of consultants to make a catchment plan for the catchment. Some of the members of the consultancy were either former employees of the Department for Water Development (DWD) or ZINWA, and therefore had some experience in water resources management. The team decided to use the district as the planning unit, and with the help of undergraduate students, data were collected from Rural District Councils within the catchment. Each research assistant was assigned a district in which to gather data. Questionnaires were used to collect data on water demand; development plans; pollution; boreholes and dams. The collection of data took about 3 months. However, the ZINWA data base was used as the main source of data for the project. Thus in the Gwayi Catchment the outline plan was made basing on the data collected from the RDCS and ZINWA.

5.2 Catchment outline planning in the Mzingwane Catchment

The need for having a catchment plan in the Mzingwane Catchment was realised soon after the institutional framework had been put in place. Minutes of the catchment council from as early as August 2001 indicate that subcatchment councils were complaining that without a catchment plan it was difficult to:

- a. allocate water
- b. prioritise water resources development
- c. plan for water use
- d. plan for catchment protection
- e. consider the impact of catchment development on adjacent catchments.

Consequently subcatchment councils were asked to make their views known in terms of developing their water resources¹. In subsequent meetings discussions focused on how the preparation of an outline plan was to be done. In one meeting it was suggested that there should be a committee made up of representatives of subcatchment councils to spearhead the process. The proposed committee was to be chaired by the Catchment Manager. Methods of data collection were also discussed². The Netherlands Development Organisation (SNV) also became involved and gave advice to the catchment council. SNV advised on what the plan should contain, and the methods that could be used to collect the data. For example, it suggested that the plan should have:

- a. operational elements which would consolidate relevant data and information on hydrology, land use, water uses, and form a framework for decision-making.
- b. strategic elements on how to fully involve stakeholders to vie for water resources and to identify opportunities for water development.

In line with the contents of an outline plan as prescribed by the Water Act, the catchment council identified the following as the major priority areas for the catchment planning:

- water allocation
- pollution control
- linking proposals and inventory of resources.
- phasing of development and the order of priorities.
- reservations for dam sites and dam basins.
- percentage of water that should be reserved for future use or for the environment.
- provision for change in priorities³.

¹ Minutes of the Mzingwane Catchment Council of 7 August 2001.

² Minutes of 7 September 2001 stated that samples of old catchment plans were to be circulated among the councilors and were to act as guidelines on the data to be collected; while minutes of meeting held on 2 April 2002 suggested that there should be a committee led by the Catchment Manager, which would spearhead the process.

³ Minutes of a meeting held on 3 June 2006

5.3 Background to data collection for catchment planning

When water reforms took place the new institutions inherited plans which had been prepared by the River Boards which had been responsible for managing water resources in certain areas. This gave the new institutions a starting point, albeit limited in scope. River Boards were mainly focusing on water resources management in areas where commercial farming was taking place, and these tended to be islands of development outside the rural areas where the majority blacks lived and practiced agriculture. Data that were available were not sufficient, and more data were needed, especially given the new thrust of water resources management⁴.

The Mzingwane Catchment Council decided to use questionnaires to collect data. It was agreed that the questionnaires were to be drafted by ZINWA with input from members of the catchment council. There were to be two sets of questionnaires, one for institutions and another one for smallholder farmers in rural areas. The justification for this was that rural communities would not be able to provide data on technical aspects of water resource because of the complexity of the issues dealt with, therefore a simpler questionnaire would be needed to cater for them. Questions were to be solicited from the members of the catchment and subcatchment councils and from staff members of ZINWA⁵. The questionnaires were to be administered to institutions such as RDCs, large scale farmers and farmers with privately owned boreholes. The questionnaires were to collect data on:

1. quantities of water used
2. quantities of water needed to meet current demand, and projected water demand
3. main sources of water, and the quality of the water
4. types of uses
5. economic value of the water
6. aspirations of users and expectations concerning the Catchment Outline Plan
7. issues of pollution
8. problems which the water users faced

However, the actual questionnaires which were eventually used in the process required information on:

1. the number of boreholes; dams; mine shafts; wells which water users had on their properties.
2. names of dams they had in their villages/wards; dam capacities; how often the dams fill up; when they last filled up; if they ever dry up and how often;
3. uses of water
4. quality of water
5. number of households using the different sources of water
6. proposed dams in the area; and the stage at which they were
7. if there was need for another dam in the area, if so, how many?

⁴ The same memo notes that available data is of based on too course a geographical scale.

⁵ Minutes of 30 July 2003

While the plans for data collection were quite elaborate, the process itself did not go as had been planned. Under pressure from the ZINWA head office to produce the plans, catchment level staff did what they saw as being possible under the circumstances⁶. The constraints of time and money made it not feasible for the planned committees to be involved in the process and the planned methodologies to be used. The issue of catchment planning had taken rather long before being implemented, and eventually an ‘ultimatum’ was sent from the ZINWA Head Office to the catchment that a catchment plan had to be produced urgently.

Given a very short space of time to carry out the task, issues of practicality became dominant, and therefore instead of a committee to lead the process data collection was spearheaded by the Catchment Coordinator, the Catchment Hydrologist and the Catchment Hydrogeologist. These were ZINWA staff based in the Mzingwane Catchment. The team planned to go round the RDCs within the catchment collecting the data needed to prepare the plans. The Catchment Coordinator for the Mzingwane Catchment stated that from RDCs they were mainly looking for district plans which they would then use to make their water demands estimates. RDCs full council meetings were to be targeted for this exercise. Targeting full council meetings had the advantage that they would be able to get access to many councillors, and since councillors are elected from wards and different stakeholder groups and government departments, meeting them would give the impression that the process had taken on board the views of the different stakeholders.

5.4 Stakeholder participation

ZINWA staff managed to visit some of the stakeholder institutions. However, some key stakeholders were not consulted, while those that were involved were largely not aware what the information was to be used for. While the Water Act (1998) clearly states that in the preparation of an outline plan, the National Water Authority and the catchment council should “consult the authorities and bodies which in their opinion are likely to be concerned with the development of the catchment area” not all such authorities were consulted. Mangwe RDC and Plumtree Town Council were not left out of the preparations of the plan. In fact the Plumtree Town Secretary stated that he did not even interact with the catchment councils and did not even know in which subcatchment area the town fell in. In Mberengwa the team spearheading the making of the plan left behind questionnaires, instructing the RDC to distribute them to councillors. The councillors would fill them in and return them to the RDC from where ZINWA would collect them. The questionnaires were in English, but there was no effort to find out if the councillors understood the questions, or to explain how they were to fill them in. One member of staff at Mberengwa RDC complained that there had been no ‘capacity building’ as far as using the questionnaires was concerned. Some of them were filled in and returned to Mberengwa RDC by the councillors, but others were returned unfilled. The Principal Officer of the RDC suggested that some of the councillors might have been unable to fill the questionnaires because they did not understand the questions, hence they returned

⁶ Interview, the Mzingwane Catchment Council Coordinator

them blank. In any case, ZINWA did not turn up to collect the questionnaires and they remained filed at the RDC.

In Mwenezi and Beitbridge it was reported that ZINWA staff had indeed asked some questions on the number of boreholes and dams in the districts. They had also inquired about the number of livestock in the districts. The impression which RDCs had of the data collection exercise was that it was meant to make an inventory of the water resources for the purpose of charging levies. The setting up of ZINWA and catchment councils has mainly been associated with water charges. At RDC level it was therefore not clear what the data being collected was to be used for.

When asked how the process of catchment planning could have been done, RDC staff argued that the process should have involved ward councillors. One official at Mberengwa RDC stated that 'Isu tinoshanda nevanhu' meaning that RDCs work with the people. He went on to claim that 'Kana ma plans iwayo eZINWA asina zvinoda vanhu anorambwa chete' meaning that if the ZINWA catchment plans did not address the needs of the community they would be rejected. He also said that while ZINWA had taken over the responsibility of providing water, most people still come to the RDC whenever they had water related problems, indicating that RDC are better known in dealing with some of the community's problems because of their long history of working with them. RDCs use a form of participatory planning whereby people at ward level bring forward their needs to the councils attention through the ward councillors. Plans which are implemented at district level are supposed to originate from the people, however, the concept of participatory democracy has been eroded by the violence associated with politics at the local level, and this has sidelined the participation of local people in issues of development via their councillors. In Mberengwa, for instance, no one at the RDC could remember when the last councillors' elections had been held.

In contrast, the Town Engineer for Beitbridge Town Council said that he was aware that ZINWA was preparing an outline plan, and he pointed out that he was aware because he once worked for ZINWA and had inside information about the whole process. He however was disappointed in the manner in which the process was going on. The Director of Engineering Services for the Bulawayo City Council also stated that he was aware of the process and that he made contributions to the process. He said that the city had given ZINWA data on their water demand and projected growth and related data. When asked about who else had taken part in the process, the Catchment Manager said Coleen Bawn cement factory and commercial farmers in the catchment had contributed the most. "It was mainly those who wanted to secure permits who tended to participate."⁷

5.5 Participation of the catchment council and the subcatchment councils

The Water Act delegates the task of preparing outline plans to the Catchment Council and ZINWA. Involving catchment councils makes it possible for stakeholders to feed into the process because catchment councils are made up of chairpersons and vice chairpersons of

⁷ The Catchment Manager saw the participation of commercial farmers and the cement factory as being driven by the need to safeguard interests.

subcatchment councils. Subcatchment councils are composed of different stakeholder groups. Ironically the catchment council played a peripheral role in the making of the catchment outline plan. Some of the councillors in the catchment council were aware that ZINWA was in the process of preparing an outline plan, but they were not consulted on any issue⁸. The chairperson of the catchment council said that he had met the staff from ZINWA, and they had requested from him some information on the number of permits in the Mwenezi Subcatchment, and nothing much apart from that. His major concern about the process was the time devoted to it. Ironically, the Data Collector for the Mwenezi subcatchment was not even aware of the process, and was not consulted at all. This is despite the fact that he is the person on the ground who knows the subcatchment.

5.6 Micro-analysis of actors in catchment planning

Water resources management has been analysed from a number of theoretical angles, but the link between the individual actors and the management of water resources still has room for exploration. Cleaver (2000), for instance, uses social theory to reject evolutionary approaches to institutions, and instead argues that the social, historical and location of collective action can explain form and function of institutions. This paper continues along the same path, arguing that institutions ultimately depend on individual actors, that the performance of an institution is embedded in the daily struggles of individuals. Where water resources management has been linked to social actors (see, for instance, Kortalainen, 1999; Cleaver, 2000, individuals have been looked as part of networks. Such network analysis displaces individuals from their personal lives, and therefore the nexus between lifeworlds and institutions is lost. Cleaver (2000) also notes that in some cases analysis is limited to looking at people in relation to the resource, that is either as farmers or in other 'user' context. Two cases were therefore looked at, both individuals in the Mzingwane Catchment Council. The cases are presented in boxes 1 and 2.

Box 1: Gungwe Rural Area Representative in the Mzingwane Catchment Council

Case 1: Chief M

Chief M is one of the few female chiefs in the country. Zimbabwe is mainly a patrilineal society, and chieftainships roles are usually passed from father to son. However, in her case she was the eldest child, and also the eldest twin, and upon her father's death she became chief in 1990. She is a widow, and of her 10 children 2 are now late. Of the 8 surviving 3 are working in Botswana while 3 are in South Africa and 1 in Zimbabwe. She stays with her youngest child. She has 22 grandchildren, some of whom live with her. Her main responsibilities are towards the education of her child and her grandchildren. She has 20 cattle and 60 goats

As chief she gets an allowance of \$20 000 per month (at the time of the interview this was less than US\$2 at the black market rate of US\$1=16 000 Zw\$). She complains that

⁸ Members of the Mzingwane Catchment Council who were fully aware of the progress ZINWA was making in catchment planning were the Catchment Chairman, the Director of Engineering Services, Bulawayo City Council and the vice chairman of the Lower Mzingwane Subcatchment Council. Most other members had heard something about the process but were not quite sure how far it had gone.

she can not afford to buy anything on that allowance. In her opinion, a woman has to work very hard to keep the family well provided. However, she is grateful for the help she receives from her children outside the country. Her home reflects the help she is getting from her children. She has a well maintained homestead with 2 four-roomed houses, 2 round huts and one other building. The house she lives in herself is well-furnished with a 21 inch Panasonic colour television set, a video cassette recorder, a mini-hifi system and other a few other electronic gadgets. She also has a three plate stove. There was also a generator in the house which she said belongs to one of her children. She also has a fixed telephone and a mobile phone. Most of the possessions she has are unaffordable in the current economic situation Zimbabwe is in.

As a chief she gets some benefits from the government. She has a 'new farm' which she received from the government during the land reform programme. She keeps her livestock on the farm. Her house was electrified by the government. She has a Mazda B1800 truck which she bought on a special scheme run by the government to provide traditional leaders with vehicles. She paid only $\frac{3}{4}$ of the actual price of the car. She gets fuel coupons from Central Mechanical and Equipment Department (CMED) which is a government department. The fuel from government costs a fraction of the commodity costs on the black market. Insurance is quite expensive and she complained that she could not afford it.

Some of her duties in the community include:

1. administering justice (hearing and adjudicating cases which are mainly related to traditional rules and other minor civil offences which the formal justice system may not attend to);
2. advising people on social and traditional issues;
3. counseling children especially relating to HIV and AIDS and other social issues;
4. spearheading local development projects;
5. being a member of the Chiefs Council at District, Parliament and SADC level;
6. being an ex-officio member of the local school Parents Teachers Association;
7. being a member of the Social Services Committee of the Rural District Council
8. representing the community at the annual Njelele rainmaking ceremony

As a chief she is a member of the Gwanda Rural District Council, and she also is a member of the Mzingwane Catchment Council. As a member of the catchment council she is obliged to attend catchment meetings, but she complained that ZINWA was 'the poorest company' which was not paying allowances on time. Every time meetings are held councillors are supposed to be paid allowances to cover traveling and subsistence costs. She said that sometimes when ZINWA phones her about a meeting she simply makes an excuse, or claim that she is busy with other things so that she does not have to attend the meetings because it is too expensive for her to travel to the meetings.

She feels that catchment councils are more effective in urban areas, since in the rural areas people get water from dams and rivers. In her opinion, people are now aware of catchment and subcatchment councils, but they are still to see them do something for communities such as theirs. She said that before she attends a meeting she gets the views of the people, and she takes them to the catchment and subcatchment councils.

Most of the boreholes in the areas were sunk by the Lutheran Development Agency. They also sponsored wells. ZINWA has been trying to provide water to clinics in the area but it has no pumps and the project has not gone very far. What the community needs most from ZINWA are water storage dams, and the dams that are there in the ward need scooping because they are now silted and they only have water for a few months of the year.

When asked about catchment planning she was not aware of how far the process had gone, and she could not say what she had contributed to the process. In catchment council meetings she is usually very quiet during proceedings. Most of the meetings are conducted in English, and most of the times she is either the only female in attendance, or one of the few females present. The area she represents is typical of the rural areas in Matabeleland South, in dire need of development. Water is just as scarce as in other parts of the catchment, and there are also a myriad of socio-economic problems.

Box 2. Bulawayo City Council Representative in the Mzingwane Catchment Council

Case 2: Mr. P.

Mr. P. is a senior official in the Bulawayo City Council. He trained as an engineer in India from 1976-1980 after which he read for a postgraduate degree at Loughborough University in the United Kingdom. His first job was a post with a consultancy, Stewart Scott and Partners. The consultancy specialised in water and waste water planning. Between 1986 and 1987 he worked for Kwekwe Municipality. He joined the Bulawayo City Council in 1988 and has risen through the ranks over the years.

Mr. P. says he has a passion for water, a passion which developed on his first job. His career has evolved around water issues. He has guest-lectured in the Water Resources Engineering and Management Masters degree programme which is run by the Department of Civil Engineering at the University of Zimbabwe. His lectures were on water demand management and the Nyamandhlovu aquifer from which the city of Bulawayo gets some of its water.

Mr. P. is married (in his own words, “happily to one wife”). His wife works for the Department of Livestock and Veterinary Services. His eldest child is a 22 year old daughter studying Molecular Biology at Port Elizabeth University in South Africa. The fees are R18 000 per year. Her rent and upkeep costs are about R2000 per month.

His second child is a son who completed Advanced Level education in 2006 and obtained 8 points. The son wants to study for an engineering degree, but the problem is he may not be able to get a place at Zimbabwean universities, and at the same time the fees for a South African university where he can get a place are unaffordable because there is already another child attending university in South Africa. His last born child is a son still in high school at Christian Brothers College (CBC), one of the best private schools in Bulawayo.

Most of his income goes to the paying of fees for his children and towards meeting transport costs. Food also consumes most of his income. His main source of income is job he holds with BCC, although he gets some money from the sale of livestock. He has a small farm in Nyamandhlovu, about 90kms from Bulawayo on which he keeps about 50 cattle. He says when schools are about to open he sells some cattle to raise money for his children's fees. He said that although the cost of beef had gone up greatly, he had no choice but to sell the cattle to raise fees rather than to slaughter the cattle for meat. He sometimes gets some fuel from the city council, but it is not enough to meet his needs. He has to buy fuel on the black-market when his allocation runs out. He also lamented the fact that there was no exemption on rates for city council employees as other organisations do (ZESA subsidizes its workers on electricity charges).

Apart from his official duties with the city council, his other responsibilities in the community are being a member of the Parents Teachers Association at the school his son attends. He is also a Rotarian, which is a charity organisation. He also has some responsibilities in his church. He worships with the Methodist Church.

He represents the city on the Mzingwane Catchment Council. Bulawayo's main water supply dams are in the Mzingwane Catchment although the city is in the Gwayi Catchment Area. He attends catchment council in both the Mzingwane and the Gwayi Catchment. Mzingwane Catchment Council meets in Gwanda, which is about 120km from Bulawayo, so when he has to attend a meeting he travels with ZINWA staff using their vehicles. He said that he attends meetings whenever it is possible for him to do so, but sometimes pressure of work does not allow him to attend.

Mr. P. was of the opinion that the level of discussion in the catchment councils is mediocre. He feels that a lot of time is spend discussing permits, and finances instead of on more serious issues. He acknowledged that probably he found the discussions rather mediocre because of his training and background as an engineer. He said the meetings are 'mundane type of meetings'. He felt that as far as IWRM is concerned, nothing much is being done. He gave the example of lawyers who he said are learned people but are not contributing to water resources management. In his opinion catchment meetings should be about planning for water resources, where to site boreholes, dams and so forth. He was one of the catchment councillors and stakeholder representatives fully aware of the catchment planning process. He said that he had submitted to the catchment council the city's water needs, projected needs and other development plans. In his own words, after making submissions to ZINWA there is nothing more he can do than wait to see what course of action ZINWA takes.

The cases juxtapose individuals from different backgrounds to show how their individual circumstances influence their understanding and participation in water resources management.

Box 3. Mwenezana Estate

One of the major water users in the Mzingwane Catchment is the Mwenezana Estate which is a subsidiary of Triangle Limited. The estate is located in the southern Lowveld

of Zimbabwe, in Natural Region 5 and it is about 500m above sea level. The area in which it is located is dry and very hot. The estate is located between the Mwenezi, the Mwenezana, and Sosonye Rivers.

Initially the area was a white-owned cattle ranch but in March 1987 the ranch was taken over by the Aberfoyle Group of Companies. Aberfoyle wanted to start a palm oil plantation. However, the venture did not succeed. Mwenezana, the current owners of the estate took over in 1995.

Mwenezana Estate gets water from the Manyuchi Dam which was constructed to provide water to the palm oil plantation. Construction of the Manyuchi Dam began in Aug 1986 and was scheduled to be completed in December 1988. The Manyuchi dam was constructed across the Mwenezi River. The dam has a catchment area of about 4610km². and the dam itself covers an area of 3 580 ha. It has a separate free over-flow arch spillway with a discharge capacity of 3600m³/sec. The dam is a double curvature concrete arch with a height of 41m, crest width of 240m and its volume is 26 360ms. The maximum water depth is 35.7m.

Mwenezana Estate has access to about 85% of the dam yield. Slightly less than 15 % of the dam yield is set apart for the use of the community. The estate has the right to the water for 50 years from 30 June 1990. The water is to be used for agriculture and associated industry only. The annual average water use is 14 162 mega litres, and it ranges from 3 910 to 21 407 mega litres per year. The estate is in the midst of both communal areas and commercial farming area. Most of the smallholder farmers in the area do not have the infrastructure to access their share of the dam yield, but the estate and the government are working towards setting up an irrigation scheme for the smallholder farmers in the area.

Mwenezana Estate's core activity is the cultivation of sugar cane, but it also raises beef cattle. Table 1 shows some statistics on Mwenezana Estate

Table 1: Mwenezana Estate in brief

| | |
|------------------------------|---|
| Total area of the estate | 15 000ha |
| Area under cane | 1 890.6 ha |
| Area for livestock | 13 009.4 ha |
| Area under other uses | 100ha (roads, housing, gum plantations) |
| Future cane development | 2609ha |
| Area under centre pivot | 584,4 ha |
| Area under furrow irrigation | 1 306.2ha |

The estate produces 230 000 tonnes of sugar cane annually, the average yield per hectare being 122 tonnes. The estate has 12 center pivots irrigation systems. Expansion of the estate has been restricted by the uncertainties over the land issue, and general economic decline in which Zimbabwe is experiencing which is affecting the performance of many

companies. The peculiarity of the situation Zimbabwe is in can be illustrated by the distorted pricing structure which in December 2006 made salt more expensive than sugar, and could be the only place in the world with such a pricing structure. The land reform programme, and the new thrust by the government to set up or revive irrigation schemes has introduced and element of uncertainties in the agricultural sector. The company employs about 19 senior staff members; 407 permanent staff; and 522 temporary. Temporary staff are mainly engaged during the cane cutting season.

The Mwenezi Subcatchment has its offices in the main office block of the Mwenezana estate. The subcatchment Data Collector lives in estate provided accommodation. The subcatchment also benefits from the estate in that it gets fuel from at highly favourable rates, and as a result its Data Collector has been able to cover more ground than his counterparts in other catchments. Subcatchment meetings are held on the estate. The Catchment Manager is the estate's Agricultural Services Manager, and whenever he travels for catchment meetings he gets fuel from the estate, and he also uses the estate's car for this business.

6. The output: the draft plan itself

The Mzingwane Draft Catchment Outline Plan makes its point of departure the fact that the Water Act (1998) requires that the catchment councils, among other duties, issue out water permit, therefore it is necessary for this purpose to produce a catchment outline plan. Its stated objectives are to present a summarised inventory of the available water resources, water uses, potential dam sites, and also to present possible water allocation scenarios.

More than half of the plan is devoted to hydrological issues and other natural sciences such as geology and hydrogeology of the catchment. The plan gives a detailed inventory of the water resources in the catchment, the current water allocations and projected demands. It describes the physical characteristics of river systems in the catchment, mean annual runoff, co-efficient of variation and storage within each subsystem. In 8 pages the plan details the hydrogeology of the catchment, describing the relation between the hydrology and the geology of the catchment. The plan also describes the water quality situation, identifying some of the polluters in the catchment as mining and urban authorities which release sewage into the river systems. It also identifies the main parameters that are tested. It also gives a detailed assessment of the projected water demands in relation to the available resources. It also lists potential areas where irrigation schemes can be developed. The main water users in the catchment are identified as rural /urban councils industries; mining sector; agriculture and the environment

The draft identifies some of the problems people in the catchment still face regarding water, for example that they still walk long distances to get to water points, and most people are still to realise the benefits of equitable water distribution in the catchment. It also identifies some of the problems in the catchment, such as the need to rehabilitate infrastructure, and also problems such as stream bank cultivation. Its stated 'aspirations' are focused on the need to have an improved hydrological knowledge of the catchment resulting in more efficient water allocation. The plan lists among its objectives as to

summarise the information available on the hydrological potential yield of the Mzingwane, and the current uses of water, and also to formulate preliminary plans for the development of water resources of the river system to meet the likely future requirements. A major section of the plan is on the general physical characteristics of the catchment, but it also dwells at length on current water uses, water balances and projected demand and allocation scenarios.

7. Discussion

The current approaches to water resources management emphasise 'integration' and as the Water Act (1998) prescribes, when making a catchment outline plan the very process of making the plan should integrate different stakeholders. The Act also prescribes that after the plan has been submitted to the Minister, copies of the plan should be made available to the public and stakeholders with objections can bring them to the attention of the Minister. There are therefore 2 opportunities for stakeholders to be contribute to the making of a catchment outline plan. Even if that is the case, research has shown that on the one hand planning in a participatory manner is problematic, and on the other hand catchment planning in the IWRM context is also problematic.

Mouratiadou and Moran (2007) argue that involving stakeholders is a complex process which begins with the development and dissemination of practical information, then moves to the actual implementation of participatory practices and ends with the incorporation of the results into the planning process. The approach which was taken in the Mzingwane Catchment as far as stakeholder participation is concerned shows how difficult it is to engage stakeholders in the process of planning, and also the problems of integrating qualitative data into water resources management. Data collection was to take a 2 pronged approach, one method relying on questionnaires, and another on engaging RDCs through interviews and document reviews. It was argued that there should be 2 different questionnaires for different stakeholders since the smallholder farmers would not be able to answer the technical questions. Questionnaires collect predetermined data, and this method restricts the contributions of stakeholders to parameters thought of by the institutions. Thus the value of the contribution of the stakeholders is not as rich as it could be if they are allowed to freely contribute. This is not to discount the value of questionnaires in data collection, but research has shown that questionnaires may fail to reveal issues which are pertinent to the participants. When the questionnaires were left at RDCs there were no efforts to explain or interpret or translate the questions which were in English, and this probably accounts for some of them being returned unfilled.

Data collection from RDCs also appears to have been fraught with problems. Most officials at RDC level were not aware of what ZINWA was doing, and they treated the whole exercise with suspicion. It was felt that ZINWA was collecting data for the purposes of levying water users. Such mistrust and suspicions do not auger well for stakeholder participation. There is need for transparency and clarity of intention if stakeholder consultation is to be taken as a genuine engagement.

While the question of how far down do consultations have to go might appear to complicate water resources management, the issue needs to be approached ‘creatively.’ RDCs are a logical solution to the problem for two main reasons. Firstly RDCs bring together ward councillors, and a ward is the lowest planning unit in Zimbabwe. If catchment councils work closely with RDCs, then data collection and planning can be simplified. However, for this to be successful water management institutions need to make RDCs aware of their intentions, and maybe even treat RDCs as equal partners in the process.

Basing on the process of catchment planning as it occurred in the Mzingwane Catchment, engaging stakeholder for input into the plan proved difficult because of the limited resources available to the catchment council and ZINWA. However, since the Water Act (1998) allows the public to comment on the plan before final approval, this opportunity could be utilised to get stakeholder comments on the draft.

Glicken (2000) argues that non-technical information should not substitute technical facts. It is undeniable that water resources management to a great extent depends on dealing with the resources available, knowledge of which can be highly technical both in terms of acquisition, analysis and presentation. However, water resources management in part also involves choices which stakeholders make, and the technical data should guide stakeholders in making informed choices. Glicken also divides information which can be used in natural resources management into cognitive, experimental and value-based. Cognitive information are the technical facts while value-based information is social or moral based. These should all feed into the planning process, and the latter can be provided by the stakeholders. She also attributes the limited use of value-based knowledge in natural resources management to the fact that scientists with a technical background are sometimes unable to integrate qualitative data into the technical data which the stakeholders generate. This often results in such data being left out completely in the planning process, or being gathered but not being made use of. Such approaches are evident in the Mzingwane outline in which the voice of the stakeholder is drowned by the technical data.

The concept of planning as thought of by the technocrats who crafted the Water Act (1998) also needs to be examined, particularly in relation to IWRM. When asked what a catchment outline plan should address, the Catchment Manager for Mzingwane stated that the plan could not address anything other than the issues raised in the Act. The issues which the Act raises are that an outline plan should indicate the major water uses within a catchment; measures for conservation and improvement of the physical environment; water allocations to the different sectors of the economy; pollution standards; and the phasing of development within a catchment. This goes some distance in meeting some of the objectives of IWRM. In short IWRM seeks to address issues of ecological integrity, economic efficiency and equity in access to water. In spite of this, the draft which the Mzingwane Catchment produced is more of a sectoral assessment of water resources. This can probably be attributed to the fact that those who led the process are natural scientists by training, and the process itself was led by institutions more experienced in technical aspects of water resources management. There is need to visualise a catchment

plan as a strategy for the attainment of social, environmental and economic goals. Thus a catchment plan should go beyond problem identification to solution suggestion. Putting emphasis on inventorying water resources results in a sectoral catchment plan yet the water reforms were meant to drive water resources management towards integration.

Water resources management is also not just dependent on the mobilisation of stakeholders and their representatives, but is also a factor of the individuals who make the institutions. Where lifeworlds and institutions merge the result is more likely more meaningful participation. In the case 1, the chief's constituency has not been beneficiary to the existence of ZINWA and the catchment council, and as a result her participation is just another cost which brings little. As the chief pointed out, the institutions have been more successful in urban areas. On the other hand case 2 shows how the lifeworld of the Director of Engineering services merge with the core business of institutions.

Mwenezana Estate is a large commercial enterprise, and stands to be affected by any decision concerning water resources management. The Catchment Chairman, who also happens to be the estate's Agricultural Services Manager remarked that 'Estate haidi kujumiwa chero musangano ukanzi uri kuLondon ndinoenda chete' meaning that the estate does not like to be caught unaware over decisions made by the catchment council and ZINWA and therefore was prepared to send him eve to London if a catchment meeting was to be held there. This illustrates just how the size of the stake of the company forces it to do whatever is necessary to secure water.

8. Conclusion

While most catchment councils have made some progress in catchment planning, the approaches to the process appear to be simply to fulfill a legal obligation. It is undeniable that the process of engaging stakeholders in water resources management is costly, particularly at this point in the history of the Zimbabwe, but some stakeholders such as RDC who already have fairly detailed data at ward level should at least be meaningfully engaged if catchment planning is to make inroads into addressing issues of livelihoods, equity and natural resources management. The stakeholder groups that have contributed the most to the process so far have done so to protect their stakes in the water sector, in short they have done so to secure their water needs. Participation of smallholder farmers at this point seems to be affected by the fact that their stake in the water sector appears low since catchment planning, and water resources management in general, seems to be aimed at managing blue water, which most of the smallholder farmers do not have access to. Catchment planning should also not be restricted to being a sectoral situational analysis but should encompass a wide range of issues which affect a catchment, such as environmental management. Rather than just outline the state of the catchment, the plan should also be a blue print for action, suggesting specific measures to be taken. Catchment planning should have a wider locus both in terms of the stakeholders engaged, the techniques used to engage them, and also the issues which it covers.

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