

Case study No. 358: Application of IWRM at a community level in KaLanga, Swaziland

Description

The Mvutjini earth dam is located at KaLanga area within the Makhondvolwane community in the central Lowveld of Swaziland. The dam is an only source of water for four communities namely, KaLanga, Matsetsa, Mpolonjeni and Mangolweni in the Lubombo Region (administrative). The KaLanga area is characterized by a rural, subsistence farming and small scale (traditional) livestock rearing community. The Makhondvolwane (Mvutjini) dam was constructed in 1973 by the Swaziland Government's Ministry of Agriculture with the intention to supply water to a 100ha farm and for livestock purposes. Efforts were made to provide safe water through a water scheme by Rural Water Resources Branch of the Ministry of Natural Resources and Energy. Over the time, unclear ownership and no formal mechanism to manage the water source caused unfavorable conditions for the local community. There was no attempt to address serious problems that included human and livestock pollution of the dam, deteriorating health situation and overexploitation of the water source.

Actions taken

Under the PAWD program, the Swaziland Country Water Partnership embarked on an IWRM demonstration project to "test" the applicability of IWRM principles on the ground. The project aimed to revitalize the dam and set up management rules. Involvement of stakeholders from governmental bodies, NGOs and local dwellers was ensured through community meetings. A biophysical and socio-economic study was conducted to assess current status in water resources use. Key conflicts were identified and conflict resolution techniques were applied. Both, technical and institutional measures were implemented to achieve major goals set with the community.

As a result of this demonstration project the earth dam was fenced and trees cleared within the buffer zone, animal drinking troughs built, boreholes were installed after additional resources were sourced, an organized gardening scheme was created and sanitary facilities were built in homesteads. Important element of the project included the training and education of the local community.

Lessons learnt

Collaboration and partnering between institutions involved in water resources management is vital and tends to be efficient as these tend to share different skills, experiences and knowledge as much as resources. This was observed when various implementing partners comprising of SZWP, Government and NGOs worked in partnership forging alliances for the success of the project.

Whilst recognizing the role played by the different implementing institutions and key players, the early inclusion of local area traditional authorities cannot be overlooked as they ensure project acceptance, ownership. This indicates that local knowledge is also important to build upon including the use of existing institutions. Also, community conflicts can be handled well when the local authority is involved from the beginning.

"Quick wins" help in creating commitment and ownership, but the participatory planning process cannot be done without facing challenges. It is useful to start implementing IWRM at small scale because outputs are easy to realize and project is easy to manage since it becomes easy to build upon lessons learnt.

Financial resources mobilisation is still an issue that requires attention since it becomes an impediment to development initiatives as observed in the KaLanga IWRM project in the effort to construct a cross over bridge. The bridge initiative is still pending funding for design and construction.

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(Full case study)

Subtitle: Documenting experiences, lessons and results of PAWD project

Summary

In the mid nineties Southern Africa embraced the concept of Integrated Water Resources Management (IWRM) through several initiatives, these included the SADC Regional Strategic Action Plan for IWRM, policy and legal reforms. In Swaziland a consultative process led to the formulation of a National Water Resources Management Strategy and the Water Act of 2003. The Act gave rise to the establishment of multi-stakeholder and decentralised institutions such as the National Water Authority, Department of Water Affairs, River Basin Authorities, Irrigation Districts and Water Users Associations. In 2002 the World Summit on Sustainable Development adopted a resolution to the effect that countries should develop Integrated Water Resources Management and Water Efficiency (IWRM/WE) plans so as to achieve Millennium Development Goals (MDGs).

In 2006, the Global Water Partnership (GWP) established a partnership with the Government of Swaziland known as the Swaziland Water Partnership (SZWP). The IWRM/WE planning project work plan for Swaziland includes a component that aims at demonstrating the applicability of IWRM on the ground. The SZWP in implementing this component has conducted reconnaissance surveys to identify a site for IWRM demonstration in the country in line with principles of IWRM (from the Dublin/Rio United Nations Conference on Environment and Development (UNCED) in 1992). A site at KaLanga, the Mvutjini earth dam was identified as suitable for the needs of the SZWP project and to support one of SZWP's objectives of advocacy for sustainable water resource development, management and allocation for environmental health, basic human needs and food security.

The report is aimed at sharing lessons learnt in implementing the KaLanga IWRM Demonstration Project. The report gives a highlight on the challenges and successes faced in the application of IWRM principles at the lowest appropriate level on the ground. The tools as analyzed in the GWP ToolBox were used in assessment and selected according to their relevance and applicability to the project. Additionally a video was produced that captures the main project features with remarks on successes, challenges and lessons learnt by project stakeholders.

1. Description of the KaLanga Community situation

The overall KaLanga community has more than 9 600 people and about 1700 homesteads. The Makhondvolwane (Mvutjini) reservoir/ earth dam was constructed by the Ministry of Agriculture in 1973 with the intention to supply water to a 100ha farm and for livestock

purposes. Efforts were made to provide safe water through a water scheme by Rural Water Resources Branch but financial constraints rendered the efforts ineffective as only a few households benefited. The scheme was transferred to Swaziland Water Services Corporation (an urban water utility) however, only about 23% of the total households are currently supplied. With time, the 100 ha farming scheme was given to the community people of KaLanga to run, however, the people failed in their operations and the scheme collapsed. When this project collapsed, there was already a pumping station; pipes lined out for irrigation and even balancing dams had been constructed to retain the water from the dam before its distribution within the fields. The area also had and still has a supply of electricity, which made the pumping of water from the reservoir to the smaller holding dams possible. Buildings in the school and nearby homesteads are constructed using water from the dam.

According to a recent study conducted by AfroGIS (2008), the water resource in the dam is limited and relies on annual precipitation. According to the same study water quantity is estimated at 515 000 m³ at 270m above sea level, with an average depth of 6 m. The available water is affected by high evaporation rates and result in very limited quantities for use.

With increased drought in recent years compounded by lack of maintenance, the quantity of the water resources in the dam has significantly reduced giving rise to potential conflict among the different users. The water quality has also been severely polluted with human beings taking turns with livestock (cattle and pigs) in “drinking” from the only water source available in the area, the Mvutjini earth dam. There is an apparent lack of awareness among the KaLanga community on the need for improved water quality, the water is not treated and incidences of diarrhoea diseases are common. According to the database developed by AfroGIS on incidences of water-related diseases an estimated 39% of the 216 surveyed households in the area had members who had been treated for water illnesses in the past year. While water quality tests run on water sampled from the dam revealed that *Coliform* counts ranging from 650-1980 per 100 ml were found in the samples. Although it is required as a national standard that faecal *Coliform* count in water samples should never exceed 10 bacteria per 100 ml, and no more than 25% of samples should contain faecal *Coliform*, The Ministry of Health and Social Welfare has set a threshold limit of 0/100 ml faecal *Coliform* counts at all times for domestic water. The results gave an indication of the direct hazard posed by human and livestock faecal pollution in rural water supplies.

Tourists from outside the community use the dam for recreation purposes like swimming, camping and leave the dam and surrounding environment dirty, exposing the KaLanga community members to health risks as they use this water for domestic purposes such as cooking, and drinking. Local community and tourists also fish in this dam. The dam is also used for religious purposes such as baptism and traditional rituals.



A truck collecting water from Mvutjini dam



A woman carrying domestic water from Mvutjini dam

Overall, there has been lack of a comprehensive water management approach at KaLanga. Consequently, the dam had become heavily polluted, silted and had been “shrinking in size” over the years.

About 65 % of the household population used unimproved sources of water a reason attributed to no availability of other sources of clean water. Women and children have been at the receiving end of the lack of a comprehensive approach to managing the KaLanga water resource with most of the women walking distances to fetch the polluted water from the dam while “competing” with livestock for the same water. Children treat the earth dam as a “swimming pool” while drinking from the same source. On another note, women spend additional hours attending to children and other family members suffering from diarrhoea diseases. The baseline survey indicated that about 48 % of the total population most of whom are located upstream had no access to proper sanitation facilities and instead they use the bush.

Conflicts had arisen with various stakeholder groups accusing each other of either “stealing” the water, polluting or depleting the fish resources in the Mvutjini dam. There has been no formal mechanism for management of the water source and stakeholders had not met to address the problem.

2. The KaLanga IWRM Demonstration Project

Swaziland Country Water Partnership (SZWP) embarked on an IWRM demonstration project to “test” the applicability of IWRM principles on the ground. This is with the context of the National IWRM planning process facilitated by the SZWP with support from the Dutch government (Partnership for Africa Water Development (PAWD) program). The KaLanga project site was chosen as one of a total of three sites that were short listed after a reconnaissance survey conducted to evaluate a site seen to have potential for learning on IWRM demonstration¹. The demonstration project is an initiative to integrate water into poverty reduction at a local and practical level. The project targets various stakeholders whose livelihoods depend on the Mvutjini earth dam. The entire KaLanga community has more than 9

¹The three communities evaluated for IWRM Demonstration Project included Nhlambeni, Somntongo and KaLanga

600 people and about 1700 homesteads. However, according to the baseline survey conducted earlier on, the KaLanga project beneficiaries are slightly more than 200 households made up of households around the dam catchment.

The community traditional leadership / authority was approached prior to the beginning of the project to have their buy in to the project. Then the first community meeting was conducted in June 2007 upon which the Member of Parliament for the area, Honourable Ntshingila was also invited including the traditional authority as well. In this meeting the concept of IWRM was introduced, a seven-member committee was elected to be the contact point between community members and SZWP project office, prevailing water management issues and possible ways of solving them were discussed.

The main project aim is to develop the Mvutjini dam and maximize its use for the benefits of the community and the Lubombo region in the Lowveld of Swaziland. The project is aimed at integrating water resources planning, use and management in an efficient, equitable and sustainable use as advocated by IWRM principles and through the application of IWRM tools developed by GWP. It is further aimed at up-scaling implementation of IWRM from local user level to national level thereby contributing towards MDGs.

In implementing the project, SZWP works in collaboration with partner organizations that include government ministries of Health and Social Welfare (MoHSW); Agriculture (MoA); and Department of Water Affairs (DWA) of the Natural Resources and Energy (MNRE). It also includes Non-Governmental Organizations such as Africa Cooperative Action Trust (ACAT) - Lilima, and Swaziland Farmer Development Foundation (SFDF).

The project involved:

- The construction of drinking troughs for cattle to eliminate the current water pollution caused by sharing water use with livestock
- The construction of sanitation facilities viz. laundry areas, showers and pit latrines to control other polluting activities by the community
- Setting up of an irrigation infrastructure and rehabilitation of the agriculture scheme that the dam was originally intended for
- Prospecting and drilling of boreholes in suitable sites to enhance potable water supply in the communities
- Protection of a spring at the earth dam's head waters by fencing it to minimize pollution and prevent access by animals
- Setting up of standpipes for the supply of potable water at the dam site depending on whether the water from the dam meets safe water quality standards.
- Capacity building through training and awareness creation, and skills transfer on issues of water and institutional management.
- The construction of a low level bridge across the earth dam for purpose of access to opposite reaches of the earth dam.

3. Discussion and analysis of the results

This section² discusses and analysis three basic components of the IWRM:

² The author recommends readers to refer to GWP ToolBox tools. The discussion about results is constructed based upon this source.

- enabling environment
- institutional roles, and
- management tools.

3.1. Enabling environment

SZWP helped to promote an enhanced understanding of the importance of IWRM in National Economic Development among non-traditional water sectors, such as the Ministry of Economic Planning and Finance, media, private sector (Sugar Corporations), and youth community. Furthermore SZWP has played a pivotal role in raising the profile of IWRM by involving water related Ministers, Members of Parliament and members of the Diplomatic missions and Donors within the country during the launch of IWRM planning by the Prime Minister.

SZWP has also promoted funding opportunities for IWRM planning. The Government contributed about USD 270,000 in 2006 as additional domestic resources for overall IWRM planning. The KaLanga project was made possible through a grant from GWP through SZWP to facilitate the implementation of activities. The project has benefited from grants from international aid agencies and local NGOs for technical assistance and capacity-building. Local funding organisations include the Government of Swaziland, UNICEF, (GoS) and the German Embassy. Swaziland Farmer Development Fund (SFDF), Youth Employment Summit (YES) and Africa Cooperative Action Trust (ACAT) provided community development expertise in their respective areas.

SZWP played a major facilitation role and assisted community members to access other sources of funding. SZWP assisted the community to draft letters and proposals to solicit funding. Interviews with community members have revealed that there will be a fee charged for use of water from boreholes for maintenance purposes, and for touristic use of the dam facility so that a fund is maintained for maintenance and operation of the water infrastructure.

3.2. Institutional roles

Initial to project commencement, SZWP and the other implementing partners engaged in a community mobilisation and stakeholder's identification exercise to ensure full participation and ownership of the project. In this regard they would be assisted in forming a formal institution which would lead the proposed development in liaison with the community. Activities directed to the assistance of this institution included the capacity building on drafting of a constitution, outlining and detailing an activities work plan, with set time frames and schedules, the election of a committee, and starting a maintenance fund to sustain the different activities under the project in the long run.

A **multi-sector project advisory team** was established to provide technical guidance on the project, comprised mainly of government officials, academics, private sector, traditional leaders, and various water user groups. The election of a 7-member executive committee was supported with the election of sub-committees to administer the day-to-day on the ground project activities. All the committees report to the wider community as it is central to the identification and implementation of solutions to the issues identified in the project area.

SZWP facilitated the participation of other organisations called **implementing partners** (non-governmental organization (NGO), and non profit-making) to improve support to project implementation. The initial steps included building consensus on clear roles and responsibilities for each agent to avoid conflict and ensure smooth operation as follows:

The Swaziland Farmer Development Foundation (SFDF): focuses on farming i.e. gardening and livestock production; sourced funding from other organizations, contributed towards the construction of livestock water troughs, protection and fencing of the garden scheme, spring and dam.

Africa Cooperative Action Trust (ACAT): helped to promote the KaLanga communities' livelihoods to alleviate poverty, provided training on water conservation methods, crop farming and household water harvesting and construction material and training on rainwater harvesting. ACAT also facilitated the establishment and training of project committees.

Youth Employment Summit (YES): facilitated needs assessment, awareness creation, and capacity building on water resources management for the youth of the area.

Ministerial bodies (Ministry of Natural Resources and Energy (MNRE), Ministry of Agriculture (MoA), and Ministry of Health and Social Welfare (MoHSW)) through their regional, local and national offices were involved in guiding the implementation of activities under the project. These bodies will continue to provide support to the project beneficiaries even after the exit of SZWP and the other implementing partners.

The community members were trained on the concept of IWRM, its potential benefits and how best to put it into practice. The training was aimed at providing participants with incentives to change their practices and approaches. Specially designed and tailor-made courses were delivered to the community to help improve change in water management approach. Modules for on-the-job training to keep beneficiary up-to-date were also included. The community was trained by SFDF and ACAT on various courses including:

- Leadership and club formation principles, club committee and its duties;
- Introduction to conflict resolution,
- Club constitution and its items,
- Introduction to planning and its benefits,
- Vegetable production, dam maintenance planning,
- Sanitation and hygiene.

On the job training / hands-on training and technology transfer courses included:

- protection and fencing of dam, gardens and springs,
- constructing water harvesters and VIP toilets.



Community members during the initial training sessions



locals constructing a water harvester

3.3. Management tools

In the KaLanga project an inventory of elements of the physical environment (natural and constructed) within the dam catchment and downstream of the dam, through mapping current and planned land use based on the project activities was conducted. A bio-physical and socio-economic situational study that included the collection of hydrological, physiographic, demographic and socio-economic data, through setting up a Geographic Information System (GIS) for routine data assembly and reporting was conducted by AfroGIS a local consultant funded under the PAWD project.

Information generated for the study was intended to guide decision-making on the zoning of the dam to cater for current and future uses, guide water supply and sanitation service delivery within the project area and indicate possible sites for irrigated agricultural use. Furthermore, a household pre-survey was undertaken to establish the baseline socio-economic and sanitation status. Study results were presented to community members and it helped concretize prevailing water quality and quantity challenges and point towards areas that needed urgent attention. A holistic database of results of the environmental analysis of the area exists in the SZWP PAWD office.

Scenarios for water resources development in the KaLanga Project were explored together with the community members an exercise that resulted in a “wish list” which was later reduced through prioritization with the assistance of SZWP, in collaboration with partner organisations (MoHSW, MoA, ACAT, SFDF, YES, MNRE/DWA).

The community wish list was comprised of the following items

1. Provision of clean water
2. Dam expansion to increase water storage
3. Gardening for food security and income generation
4. Dam fencing
5. Area for animal watering (water troughs)
6. Construction of a bridge
7. Revival of failed agriculture scheme
8. Supply of potable water to school
9. Building a secondary dam
10. Payment of levy by those who cruise on water and fish for entertainment
11. Building of a guest house.

After considerable discussions the “wish list” was prioritized by taking into consideration financial issues, evaluating feasibility of each of the development options within project timeframe and an assessment / evaluation of readily available water for consumption by the community. The executive committee is the focal point with support from several sub-committees. The “wish list” was reduced to a few initiatives administered by sub-committees headed by the executive committee and they include (broadly spelt out in the local language in the photo below):

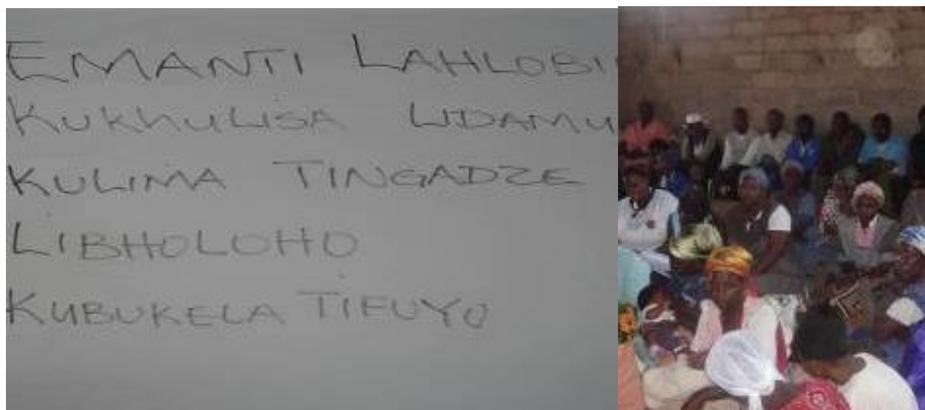
1. The construction of a low level bridge across the earth dam for purpose of access to opposite reaches of the earth dam
2. Prospecting and drilling of boreholes in suitable sites and water harvesters to enhance potable water supply in the communities
3. The construction of drinking troughs for cattle to eliminate the current water pollution caused by sharing water with livestock
4. The construction of sanitation facilities (VIP toilets) to control other polluting activities by the community
5. Establishing a garden scheme for income generation
6. Protection of the spring and the earth dam’s head waters by fencing it to minimize pollution and prevent access by animals.

3.4. Monitoring and Evaluation

The KaLanga community was assisted to formulate a Project Monitoring and Evaluation Plan. The process involved

- defining indicators,
- establishing benchmarks, and
- setting mechanisms to ensure ongoing monitoring and evaluation.

The main objective of the exercise was to help community members to see whether the implementation process is on track, to measure both short- and long-term impacts, and to evaluate impacts to determine if actions are indeed contributing to the larger development goals defined during project commencement.



Summary of community prioritized interventions during one of the meetings held with the community

4. Social change instruments

Changing water practices to achieve IWRM requires changes in the deeply held attitudes of individuals, institutions, professionals and social organizations within civil society. In KaLanga community, the involvement of youth was recognized an important element to achieve sustainable results. Also, changing in social behavior depends on ability to solve conflicts. Several conflicts and disputes were held during the project implementation.

4.1. Youth Involvement

Generally in Swaziland youth participation in water resources development and management has been relatively low. Therefore SZWP engaged Swaziland Youth Employment Summit (YES) to involve community youth in the project for sustainability and youth empowerment purposes. YES started by mobilising the youth, carrying out a needs assessment exercise, assisted in election of a youth committee and held capacity building workshops on the IWRM concept and water management principles and how the youth can take part in the project by guiding the youth in developing a youth water action plan.

However, this initiative did not yield expected results as youth participation has dwindled during project progress due to several factors. An interview with one youth representative indicated that migration due to employment and educational reasons was the major setback in youth participation. The other reason cited was that youth lose interest in holding series of meetings and trainings without practical activities since young people are generally interested in initiatives that yield results within a short period of time. In turn, the involvement of other youth partners who are at tertiary level was also undertaken. Students from the University of Swaziland's Geography, Environmental Science and Planning department's society were part of the project. They assisted in soil sampling around the area thereby gaining practical experience of their subject matter. Since then the youth society has shown interest in water resources management activities.



Youth facilitators and participants (elected into the community youth committee) during the community youth workshops



Youth from the national University during a soil sampling exercise and GPS hands-on training exercise

To help the KaLanga community embrace the concept of IWRM and its applicability, the implementing partners engaged in awareness creation towards attitude change, knowledge & skills transfer and also in technology transfer. The water resources assessment exercise encouraged members to realise the urgency of constructing VIP toilets and water harvesters. The project meetings between stakeholders and project implementing partners provided a platform for learning, dialogue and for information dissemination and report-back.

4.2. Conflict resolutions and managing disputes

Conflicts experienced in the project area include tension over water abstraction by a water service provider - Swaziland Water Services Corporation (SWSC) which the community complained it was being carried out without their prior knowledge and that the dam water was shrinking as a result of the abstraction. SZWP facilitated a meeting that helped the community and the utility company to discuss the problem. During the meeting it transpired that both parties (community and SWSC) had accusations against each other and the need for a third party was obvious. On the other hand, the discussion meeting helped SWSC voice out concerns over infrastructure vandalism and misuse by community members. The dialogue promoted by SZWP led to a positive result whereby SWSC and the community reached a win-win solution. The community recommended that SWSC should install a flow meter to measure the volume of water abstracted and that water abstracted from the dam to supply other communities must comply with dam management set rules and must be communicated to the community traditional authorities and project executive committee.

The other conflict experienced was that over land for the development of a garden scheme. The Traditional Authority (*Umphakatsi*) allocated land where community members were supposed to establish the gardens, however, this same place is currently used as "grazing

land” and some people had started their personal gardens. The people have already fenced some part of their personal gardens and have installed some pipes for irrigation. These people refused to remove their pipes and fencing to make way for the new project. As a result the matter was reported back to the traditional leaders. The traditional authority convened several meetings in an effort to solve the issue and finally most of the people agreed to remove the materials and join the new project while one has refused to either remove his fence or to be part of the new project. This issue has resulted in the delay in starting the garden scheme. Members are supposed to subscribe to join, however not everyone involved in the project joined. Only those who are close to the place where they are going to have their garden, while other people did not join because they felt they were far from the place to be able to maintain the garden.



Discussion in progress on issue about SWSC’s extraction of water from the earth dam using an unsecured pipe as shown by community representatives and a technician from SWSC

In addition, the establishment of the community statutes played a big role in giving guidance on participation and effecting disciplinary measures against defaulters. The statute was developed by the beneficiaries as a governing document and it made specifications to deal with elections, meetings, participation and disciplinary mechanisms. It was revealed that the payment of E10.00 (=R10/USD 0.70) helped a great deal in compelling a positive behaviour against absenteeism resulting in improved participation in terms of meeting attendance.

5. Regulatory instruments

Regulatory instruments used in the Ka-Langa project included self and social regulation which were applied concurrently. During project inception, the community drafted and adopted a project constitution (self regulation) with facilitation and assistance from ACAT, a document that served as an overall regulating and governing document. The statutes provided rules of the game and prescribed fines and penalties for non - compliance. On the other hand small fines were charged for absenteeism and late coming for meetings or project work. The imposition of fines resulted in positive change on behavior towards project participation and meetings attendance.

6. Main achievements and lessons learnt

The KaLanga demonstration project reflects the application of IWRM in sustainable water management. For IWRM to be adequately implemented, the three E’s have been vital in

changing livelihoods and socio-economic development. Objective indicators were set during the planning process and were used as guides during the implementation process and identifying progress of deliverance. Two years down the line the KaLanga Demonstration project has yielded successful tangible deliverables as planned from the onset of the project with the community and they include the following:

1. Three boreholes (all with funding sources outside the PAWD II project)
2. Homestead water harvesters-108
3. Two livestock drinking troughs
4. Homestead VIP toilets- 96 (only about ten homesteads still had not constructed toilets)
5. Fencing a garden scheme
6. Protection and fencing of a spring at the earth dam's head waters
7. Fencing of the Dam to fend off livestock

6.1. Lessons

The IWRM Demonstration Project has yielded lessons to be learnt for projects of a similar nature locally, regionally and globally.

- Definition and agreement on the roles and responsibilities of all the parties involved in the planning process improves coordination and builds commitment. Collaboration and partnering between institutions involved in water resources management is vital and tends to be efficient as these tend to share different skills, experiences and knowledge as much as resources. This was observed when various implementing partners comprising of SZWP, Government and NGOs worked in partnership forging alliances for the success of the project.
- Whilst recognizing the role played by the different implementing institutions and key players, the early inclusion of local area traditional authorities cannot be overlooked as they ensure project acceptance, ownership and they are crucial for enforcing disciplinary measures against non-compliance and defaulters. This indicates that local knowledge is also important to build upon including the use of existing institutions.
- Adequate stakeholder capacity building is vital prior to and during project implementation and it ensures ownership and commitment. IWRM implementation if associated with local needs and priorities is vital in the project's success and acceptance by the intended beneficiaries. For instance members of the KaLanga project committee were able to persevere through hardships posed by fellow community members or committee members in a few cases without opting out due to the initial leadership training they received.
- "Quick wins" help in creating commitment and ownership, but the participatory planning process cannot be done without facing challenges! It is useful to start implementing IWRM at small scale because outputs are easy to realise and project is easy to manage since it becomes easy to build upon lessons learnt.
- Financial resources mobilisation is still an issue that requires attention since it becomes an impediment to development initiatives as observed in the KaLanga IWRM project in the effort to construct a cross over bridge. The bridge initiative is still pending funding for design and construction.

- Urban migration has a significant effect on local user participation and project sustainability implies the importance of mobilising resources and promoting development initiatives at rural area level. The organized youth participation initiative could not take off due to young people migrating to urban areas for employment and educational purposes.
- Meetings, training sessions and workshops provide a strong foundation for dialogue, sharing lessons, conflict resolution, planning, report back and information dissemination. The meeting between SWSC the private water supplier and the community helped solve the contention over water abstraction and also played a vital role in promoting relationships.

6.2. Challenges

- The Project faced difficulties in promoting stakeholder engagement especially with those people from other communities outside the dam area but who also derive benefits from the Makhondvolwane dam.
- There is still a need to find a mechanism to up-scale the formed institutions (local committees) to feed into the wider water institutions at regional (administrative) and river basin (catchment) levels. On the other hand the Swaziland Water Act establishes River Basin Institutions which should work in collaboration with grass-root level water management institutions, and this in turn helps in managing the water resources in an integrated manner.

6.3. Recommendations

- Awareness creation for IWRM requires more time and it should be pushed with strong support from the National Policy-makers level so that the people who do not take such initiatives seriously may understand the significance attached to such and develop a positive attitude, and this takes a long period.
- The fact that DWA and other government ministries were involved in this project makes it easier for the RBAs to be notified about the existence of such committees and the need to develop communication and cooperation mechanisms with regional water committees. It would be important for the coordination and funding of proposed actions / activities in the IWRM project to explore possibilities of incorporating these actions as components of other government programmes / projects underway and planned.

7. Conclusion

The project demonstrates that multi-stakeholder dialogue is a basic requirement for the solution of problems involving different perspectives and priorities. The process of developing consensus is difficult to build, but is usually the most important. The Water Act and Water Policy including the IWRM Master Plan already contain IWRM principles, but still, practical implementation of these principles has encountered several challenges. The IWRM demonstration Project provides a good illustration of how effective co-operative links / partnerships can be established between the government and the non-government organisations for the solution of water related problems involving, by definition, different

perspectives and priorities. This indicates that there is always a need for a group of key players who can act as catalysts for change, motivated and influential enough to obtain government and local community endorsement of the project.

The SZWP as a neutral platform has proven to be instrumental in winning and maintaining community interest, involvement and support because of the participatory approach used. Public awareness and multi-stakeholder participation is a must to ensure acceptance by the public and the various government levels. The case of KaLanga demonstrates that IWRM is actually a process for better management of water resources and encompasses governance, stakeholder participation and balancing development with resource sustainability.

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This report was adapted from the Final Report: *The IWRM Demonstration project in Swaziland, Documenting experiences, Lessons and Results* (January 2010) prepared by WEABS Training and Consultancy