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Lessons Learnt
from the IWRM Demonstration Projects

Innovations in local-level Integrated Water Resource Development




in Malawi, Mozambique, Swaziland and Zambia

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IWMI International Water Management Institute

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Innovations in local-level Integrated Water Resource Development

Target audience

Communities, governments, NGOs, donors, knowledge centres, and the private sector providing water services for rural development

Purpose

To present seven innovations in Local-level Integrated Water Resource Management, based on lessons learnt in the IWRM Demonstration Projects in Malawi, Mozambique, Swaziland and Zambia

Acknowledgements

The present 'Lessons Learnt' document is based on the pioneering efforts and new insights generated by the country teams implementing Local-Level Integrated Water Resource Management in Malawi, Mozambique, Namibia, Swaziland, and Zambia. The authors gratefully acknowledge their willingness and that of the benefitting communities to share their experiences with us.

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The authors tried to reflect the lessons learnt from the project as accurately as possible, but, obviously, they take full responsibility for any misquotation or incorrect interpretation.

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INTRODUCTION

From 2006 - 2009, the SADC Regional Water Sector Programme, supported by Danida, has piloted a new approach to water services through Integrated Water Resource Management (IWRM) Demonstration Projects in five countries namely, Malawi, Mozambique, Namibia, Swaziland and Zambia. Through 'learning by doing', a new scalable integrated water services approach was developed, called Local-Level IWRM' (or community-based IWRM, or community-based multiple-use water services). This approach focuses on water resource management at the lowest appropriate levels, users' participation, the inclusion of women, and financial and environmental sustainability.

In these areas, poor people's agrarian livelihoods depend in many ways upon water, but water services levels are still very low. The participatory approach invariably identified improved access to water to better meet multiple domestic and productive water needs as highest priority. Hence, Local-level IWRM was defined as 'a water services approach that takes poor people's multiple water needs and their priorities as starting point of the planning and design of new infrastructure or rehabilitation and sustainable management institutions'.

This document presents seven generic lessons derived from the experiences in Malawi, Mozambique, Swaziland and Zambia, which are documented in detail in the process documentation reports[1]. Each lesson can be generalized and represents one argument why the developed form of Local-Level IWRM is a better water services approach in rural areas in low- and middle-income countries in SADC and elsewhere. 'Better' means in comparison to conventional water services approaches, which tend to be organized around one single water use, either domestic water and sanitation, or irrigation, or livestock watering, etc.

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[1] The IWRM Demonstration Project in Namibia mainly focused on the high-level creation of a basin committee in the Omaruru basin. The innovations that are presented here generally also apply to the two local-level projects of the Hakahana Women's Gardening Group and the Okombahe Prosopis project in the Omaruru basin.

1. PRACTICAL GUIDELINES FOR LOCAL-LEVEL IWRM

Lesson One: Local-level IWRM is essentially the application of participatory approaches in the water sector and can be operationalized into a practical step-by-step guide on 'how-to-do' Local-level IWRM.

The IWRM Demonstration projects allowed identifying the concrete steps that local government, other local authorities, NGOs, line agencies and private sector service providers, who together constitute the 'supportive' environment', should take to implement Local-Level IWRM. These steps are synthesized in the 'Guidelines for Local-Level IWRM'[2]. The responsibilities in the different phases and all steps are summarized in Figure 1.

Local-Level IWRM can be implemented according to these guidelines if four conditions are met. These are:

- new interventions are well embedded in local planning;
- the intervention aim is to use water for improved livelihoods rather than for one single use;
- a certain choice in technologies and other measures can be offered; and
- funding and time frames allow for a participatory planning phase.

Figure 1: Overview of responsibilities, phases and steps of Local-Level IWRM

<table>
<tr><th>Responsible Organization</th><th>Phases</th><th>Steps</th><th>Steps</th></tr>
<tr><td colspan="3">Creating a supportive environment</td><td rowspan="6">Continuous 'Step' Seven: Do participatory monitoring and evaluation and impact assessment for follow-up</td></tr>
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[2] SADC/Danida Regional Water Sector Programme. 2009. Guidelines for Local-Level Integrated Water Resource Management. Based on experiences from Integrated Water Resource Management Demonstration Projects in Malawi, Mozambique, Namibia, Swaziland, and Zambia. Pretoria: Southern African Development Community/Danish International Development Agency, in collaboration with the International Water Management Institute. All are downloadable from www.sadcwater.com.

The first two steps are the responsibility of the local government and the wider supportive environment. The next five steps are decided upon by the community, but are facilitated by support agencies. Local-Level IWRM is applying the well-known principles of any participatory development approach to water. It looks at people's multiple water needs according to their own priorities. This approach moves beyond the implicit priorities of one single use as the domestic water sector or the irrigation sector tend to promote according to their single-use mandates.

The steps and their components are indicated in Figure 2. The steps are more or less chronological but not rigid. Every step has a value and purpose and none of these steps should be skipped. Some decisions are difficult to revise later. For example, once sites of new infrastructure have been selected, the potential beneficiaries have also largely been determined. However, for other issues, such as the technical feasibility assessment, it may well be necessary to go back to earlier steps once or twice or even more often to adjust the process because of new feasibility information or unforeseen events. Also, the different activities in one project are often staggered and in different phases. Early implementation of some smaller 'successes' can encourage in pursuing the planning process of a complex, longer-term activity.

Figure 2: Project steps and their components in Local-Level IWRM

Step One: Mobilize support
• Strengthen existing development plans. • Compile integrated support. • Define targeting procedures. • Establish horizontal, integrated service delivery structures. • Ensure vertical national support.
Step Two: Select communities
• Develop selection criteria within time and funding frames. • Communicate widely and test for compliance. • Select.
Step Three: Understand the community and build capacity
• Build trusting relationships and communicate the project concept. • Do contextual profiling. • Train the community and select community mobilizers.
Step Four: Create a vision and select activities to fulfil it
• Do participatory situational diagnosis and problem analysis. • Create a vision of new ways to manage water. • Rank opportunities and needs. • Select activities for implementation.
Step Five: Compile detailed action plans
• Create and train community structures. • Specify actions, roles and budgets. • Sign off.

Step Six: Implement the action plans

- Construct communal infrastructure and develop the capacity to operate and maintain it.
- Create management structures and develop their capacity.
- Implement the accompanying interventions and develop the capacity to maintain them.
- Ensure sustainability when exiting.
- Operate and maintain infrastructure and continue capacity development.

Continuous 'Step' Seven: Do participatory monitoring and evaluation, and livelihood impact assessment for follow-up

- Monitor planning, implementation and use.
- Monitor the impacts on livelihoods.
- Identify follow-up plans for community-based water resource management.

Comittee meeting, Malawi

2. MORE EFFICIENT AND SUSTAINABLE INVESTMENTS IN INFRASTRUCTURE

Lesson two: In Local-Level IWRM investments in infrastructure are more efficient and sustainable than conventional investments, both from an institutional and technical perspective.

2.1. Infrastructure to adapt to variable and unpredictable water resources availability

While Local-level IWRM is a new approach for water service providers, it is not new for communities. Here, it fully aligns with communities' own integrated water development and management since time immemorial. When communities themselves develop infrastructure, they do this for multiple uses and they combine the use and re-use of water from multiple sources (rain, surface streams, groundwater, and wetlands). In reality, infrastructure designed for a single use is typically also used for multiple non-planned purposes, whether this is legal or not. In this way, communities survive in harsh ecological conditions. Essentially, Local-Level IWRM takes communities' integrated approach forward.

For communities 'improved water management' primarily means 'improved access to water'. In all sites, there were ample water resources available, but these flowed by or remained underground, because infrastructure was lacking or had broken down. Physical water scarcity was neither a problem before the IWRM Demonstration project nor after it. Yet, the real face of water scarcity was shown among the majority of the poor and women, who lacked access to sufficient water of the right quality at the right time and at the right site, even for basic domestic needs. Hence, all participatory needs assessments identified new infrastructure or rehabilitations and repair as the priority need. Year-round water storage and conveyance infrastructure overcome seasonal variability of water resources availability, annual fluctuations, and protect against extreme droughts and floods. This will become even more important in the face of climate change.

Table 1 gives an overview of the wide range of technological interventions that the communities selected as their priorities.

Table 1: Selected infrastructure in the IWRM Demonstration Projects

	Boreholes with manual lifting devices or hand-dug wells for domestic uses, livestock watering and gardening; sanitation	Motorized pumps with or without conveyance structures for domestic uses, livestock, gardening, irrigation, and small-scale enterprises	Village reservoirs with or without conveyance structures for domestic uses, livestock, gardening, irrigation, fisheries, brick making, cattle dipping, small-scale enterprises, and wild life watering
Malawi Dzimphutsi	1 demonstration improved latrine		2 new dams with pipes to 6 fish ponds and a 10 ha irrigation scheme
Mozambique Ndonga	5 new communal boreholes	(planned) communal electric irrigation pump with (realized) new and rehabilitated irrigation canals	New cattle dam (abandoned)
Swaziland Maplotini	Improved latrines for 135 households	1 communal potable water system for 135 households	• Improvement and extension of drip irrigation systems for sugar cane and individual 1 ha plots • A new 10 ha communal garden, fed by the irrigation system
Zambia Katuba	• Rehabilitation of 8 communal boreholes • 2 new communal boreholes • Rehabilitation of 23 irrigation wells	30 new group-owned petrol pumps	Rehabilitation of 3 village reservoirs
Zambia Namwala	11 new communal boreholes, 10 equipped with cattle troughs	2 communal submersible electric pumps for multiple uses	• Rehabilitation of 2 village reservoirs • Rehabilitation of a dyke in the flood plain

2.2. Improved institutional efficiency and sustainability

Although it is too early to judge, investments made according to this participatory approach are very likely to be more sustainable and efficient from both the institutional side and technical side. The reasons at the institutional side include the following.

- Meeting people's own **priority needs** created ownership; this is the single most important condition for sustainability of investments.

- Communities could consider their existing water resources, technologies, uses, and management arrangements in a holistic way, through a **one-window participatory process**. This saved transaction costs compared to a range of parallel participatory processes for each different water use.
- Existing **institutional arrangements** for water governance were built upon. The Traditional Authority structures played the most critical role on the ground in the projects in Dzimphutsi, Malawi and Namwala, Zambia. The project in Ndonga, Mozambique was also fully integrated in the community- and district-level leadership structures. In Maplotini, Swaziland, the role of Traditional Authorities was also important, but this was alongside the Maplotini Farmers Cooperative, which was the primary entry point. In Katuba, Zambia, an existing farmers' cooperative was also the main entry point. Existing water point committees were also included in the project. Building upon existing institutions, and reviving and adapting as needed, is efficient and promotes sustainability. However, there are also risks in building upon existing institutions, as elaborated in the fourth lesson below.

2.3. Improved technical efficiency and sustainability

Local-level IWRM is also bound to be more sustainable and efficient from a technical perspective, for the following reasons.

- Communities' **own technical plans** could be built upon, which saved costs and also greatly increased ownership. Communities had already many plans before the IWRM Demonstration project came. For example:
  - The irrigation scheme and fish ponds in Dzimphutsi, Malawi, were communities' own initiatives. They had already started digging a fish pond and an irrigation canal, when World Vision noticed their commitment and commenced a 'Food for Work' program for the further construction. However, the Nkudzi river eroded these works. When the IWRM Demonstration Project came, it took these earlier initiatives forward.
  - In Ndonga, Mozambique, the ideas for a cattle dam and an electric pump and irrigation scheme rehabilitation already came up at the very first exploratory meeting of the IWRM Demonstration project, and did not change in any way afterwards.
  - The Itinti dyke in the flood plans of Mungaila chiefdom in Namwala, Zambia, was an indigenous construction, which was rehabilitated in this project.
  - All other technologies in these and other projects were also swiftly identified by communities during the visioning process.
- The participatory needs assessment highlighted many possibilities for **rehabilitation**, in contrast to conventional water services, which tend to pay less attention to the needs for maintenance and rehabilitation after project implementation.
- All existing infrastructure, whether designed for domestic uses or irrigation, could be taken as an **investment already made**. Adding a new component only to already existing infrastructure saves costs. This happened, for example, with the installation of new communal electric submersible pumps, which were connected to electricity connections of private households in Namwala, Zambia. The potable water system in Maplotini, Swaziland, was also grafted upon an already existing large water system. This system is fed by an upstream dam and serves the dual purposes of municipal water for Lavumisa town and multiple uses in the irrigated and residential areas of the Maplotini area.

- **Economies of scale** were achieved by designing surface dams and conveyance infrastructure in an integrated manner for multiple purposes. This not only happened in the above-mentioned system in Swaziland. But such economies of scale were also achieved in the construction of the two new dams in Dzimphutsi, Malawi. The conveyance networks bring water simultaneously to an irrigation scheme and fish ponds, and are also used directly for domestic uses and livestock.
- However, although the design was more integrated than usual, it sometimes still missed some water uses. In all project sites, water users and livestock continued using infrastructure according to their own multiple needs, also if the design ignored such uses and even if efforts were made to prevent such uses. Cattle continued roaming around to find water for drinking. Communities continued using nearby irrigation canals for domestic purposes. Ignoring such needs, or relegating the responsibility for meeting such need to others, brings **negative health impacts and damage to the infrastructure**.

In sum, participatory Local-Level IWRM projects bring incremental improvements in the history of communities' integrated water management. By recognizing and building upon all existing technical and institutional capital in a community both ownership and sustainability are enhanced at lesser costs than if parallel processes for infrastructure development for single uses were undertaken.

Community using water for different purposes from a multipurpose dam, Malawi

3. MULTIPLE LIVELIHOOD BENEFITS CONTRIBUTING TO ALL MDGS

Lesson three: Local-Level IWRM contributes to all MDGs

The benefits of the Local-level IWRM projects, which improved access to water by the poor for multiple uses contributed to the achievement of all Millennium Development Goals (MDGs) (UN Millennium Project Task Force on Water and Sanitation 2005). Poverty is multi-faceted, and encompasses lack of food, income, access to safe drinking water and other basic services, participation, decision-making power and voice, self-confidence, and all other dimensions of the MDGs. In each project site, improved access to water and the participatory processes positively influenced several dimensions of wellbeing. Moreover, the dimensions mutually reinforced another. This rendered the total impact on wellbeing more than just the sum of each dimension.

MDG 1: Eradicating extreme poverty

- More year-round food crops and income from homestead-scale gardening and field irrigation (in all countries)
- Healthier animals because of nearby drinking points (in all countries)
- More year-round food and income from homestead fruit trees (in 3 of 4 countries)
- More year-round income from small-scale enterprises like brick making, pottery, or mat making (in all countries)
- More year-round food and income from fish from fish ponds and small reservoirs (in 2 of 4 countries)
- Income from wages for infrastructure works and supervision (in all countries)
- Income from brick making for youth (Swaziland) and others (2 of 3 other countries)
- Increased benefits from water through accompanying measures such as the forging of market linkages, conservation agriculture training, access to subsidized fertilizer, etc.
- Reduced chores to fetch water for domestic purposes or herd animals (in all countries)
- Improved health by improved latrines and health and hygiene education (in all countries)
- Empowerment through stronger relationships with local government and other support agencies, also increasingly holding them accountable

MDG 2: Achieving universal primary education

- Reduced burden of children in fetching water or herding cattle to drinking water points
- Income gained used for children's school fees

MDG 3: Promoting gender equality

- Women's excessive chores of fetching domestic water reduced
- Improved sanitation and hygiene, which is of special importance to women
- Women's increased own food and income from homestead-scale productive water uses

- Improved access to field irrigation technologies in Katuba, Zambia, where motorized pumps were given to women's and mixed groups, besides men's groups. However, even in women's groups, men dominated pump ownership.
- Women's own titles to improved irrigated land (in all countries), although less than men, even in matrilineal Dzimphutsi, Malawi.
- Women included in participatory processes, although less than men
- Women included as members in water users associations and management committees, although especially for domestic water supplies and less in productive water committees, except for the fish pond committees in Dzimphutsi, Malawi

MDG 4: Reducing child mortality

- More food and more income for child care and health facilities
- Women's income relatively more used for family welfare than men's incomes
- Mother's reduced labor burdens, so more time for child care
- Improved sanitation and hygiene

MDG 5: Improving maternal health

- o Better health for mothers because of reduced labor burdens, improved sanitation and hygiene, more food, and more income to spend on maternal health care

MDG 6: Combating HIV/AIDS, malaria and other diseases

- Better sanitation and hygiene to combat water-borne diseases
- Reduced burdens for the sick in water fetching for domestic uses, also to avoid dehydration and accommodate hygiene requirements
- More water at homesteads allowing nearby food production and income generation by the sick and their dependents (in 3 of 4 countries)

MDG 7: Ensuring environmental sustainability and reducing the proportion of people without access to safe drinking water and sanitation

- Better access to water for multiple uses around homesteads (in 3 of 4 countries)
- Improved sanitation (in all countries)
- Improved environmental sustainability at community-scale and sub-basin scale by:
    - Rehabilitation of eroded dikes and silted small reservoirs
    - Soil erosion combated through awareness raising on upstream use of river borders (1 country) and coordination with an upstream reforestation project (1 country)
    - Wild life drinking from small reservoirs
    - As noted, in all countries water resources were abundant, but the poor communities lacked the infrastructure to make water available year-round.

MDG 8: Developing a global partnership for development

- Presentation of the IWRM Demonstration project in Zambia at World Water Forum 5 in Istanbul during the Topic Session on 'Multiple-use water services' organized by the global MUS Group (www.musgroup.net).

Household Vegetable Gardening, Zambia

4. CHAMPIONING, NOT CAPTURING

Lesson four: Local-Level IWRM has the potential for reaching the poor and women, but this potential is only realized if from the first contacts onwards a community project leadership is created that champions a communal process and avoids capturing project resources.

4.1. Inclusive participatory processes

The contribution of Local-Level IWRM to all MDGs is strongest if the multiple benefits directly accrue to poor and to women water users. Most IWRM Demonstration projects achieved this to a certain extent, but not to the full extent. There were two reasons for this: the way in which the participatory process was undertaken, and the nature of technical water interventions. Efforts to address these issues generated important lessons on how the poor and women can be better reached in Local-Level IWRM.

With regard to the way in which the participatory process is set up, the first contacts of a project in a community appeared most critical. The case of Swaziland showed both the risks and the solutions. The Swaziland Water and Agricultural Development Enterprise (SWADE) was the implementing agent of the IWRM Demonstration project in Maplotini, Swaziland. The IWRM Demonstration project in Swaziland was designed to work with the Maplotini Farmers Cooperative of 72 households. However, during the initial phases, SWADE realized that there were a total of 135 households in the Maplotini farm area. The non-members were very poor and had no access to land other than homesteads. Once SWADE realized that it risked excluding the poorest, it undertook major efforts to better reach the poor and women. In consultation with all local-level stakeholders, SWADE negotiated the allocation of 10 ha irrigable land to these non-members. Initially, this met fierce resistance by some leaders in the cooperative. They not only feared losing control over precious land and water resources, but also over the public resources of the project. They had already made time investments in the allocation of these resources and, accordingly, their expectations were raised that they would be the only beneficiaries. At national level, SWADE encountered the complexities of the ongoing land policy reform for government-owned land. SWADE successfully overcame these problems. This not only brought food and income to non-members from the 10 ha irrigation scheme, besides access to the potable scheme and improved latrines. But it also significantly enhanced mutual trust and the capacity to deal with potential conflicts within the entire Maplotini community.

Other IWRM Demonstration projects (e.g., in Namwala, Zambia and Ndonga, Mozambique) also showed how, initially, it may seem easier and quicker for implementing agencies to fully rely on hard-working champions with political weight. In Namwala, such support was even more critical because of a long history of hostility against any irrigation intervention in this area dominated by wealthy cattle owners. However, it appeared very difficult to go back in the steps and look again for win-win options that would include more people once these champions had made time investments and started expecting their share in the resources. Looking again to include people that were missed at start may even be dubbed by those with vested interests as ‘delaying’ the project and being against ‘the’ community!

On the other hand, powerful players, even outside the community, need to be on board. This became clear in Ndonga, Mozambique, where a cattle dam was being constructed at the legally allowed distance from a gas line

of SASOL. Halfway the construction, after several weeks of observing the activities, SASOL suddenly ordered to stop and abandon because they feared it would be too near to their gas line. The waste of efforts could have been avoided if the fear had been expressed at the start. The involvement of the district government from the outset of a project is equally essential for the long-term negotiations with SASOL for compensation.

The lesson learnt is that allocation of land, water and public project resources is bound to be conflicting. However, by ensuring at the very start of a participatory process that a project reaches (representatives of) everyone, projects can avoid that some groupings start considering the project resources as theirs on the basis of their earlier time investments and their efforts to 'bring the project' to the area. It is only at these initial stages that win-win allocations of the public resources can be designed that sufficiently benefit the leading champions but especially allocate resources to the poor and women. The very first step in the guidelines of thoroughly understanding the community is critical for such win-win designs. Such understanding learns where a community comes from, its factions and leadership structures, and land and water tenure issues and conflicts. Then, during the phases of visioning and action plans, a continuous 'social impact assessment' about the envisaged beneficiaries is the absolute condition to avoid that the gap between the haves and have-nots is further widening as a result of projects.

4.2. Inclusion in technical designs

The second reason why it appeared difficult for the IWRM Demonstration projects to reach the poor and women was the nature of the technical interventions. By only focusing on whether the technical infrastructure was constructed or rehabilitated and functioning, or not, the crucial questions where and how the infrastructure was sited, and, related to that: who would benefit, remained hidden. Inclusive procedures for site selection and lay-out and transparency in the selection of beneficiaries are central in the social impact assessment.

There are some a priori generalities, though. Improvements in water supplies near homesteads tend to favour women, the land poor, and the sick. This is both because this alleviates burdens for domestic water fetching and because the homestead is often the only site where women, the land-poor, and the sick can use water productively in their own right. In the water supplies to homesteads, 3-5 litres per person per day should be safe for drinking and cooking. Mainstreaming homestead-scale multiple-use water services as a priority throughout all Local-Level IWRM contributes most effectively to all MDGs.

Similarly, technologies that are applicable on small plots can implicitly reach those with limited land, while, for example, motorized pumps require larger plot sizes to be profitable, and money for fuel. However, as learnt in Katuba, Zambia, by allocating motorized pumps to women farmer groups and mixed farmer groups, smaller farmers and women can also benefit.

Lastly, wage employment for construction can typically reach the poorest well. Through e.g., rotation, the numbers reached can be high. For many poor people infrastructure projects are primarily wage employment opportunities. However, wage differences between women and men, which are still common, need to be overcome.

5. TWO-PHASED FINANCING

Lesson five: financing conditions that separate the planning and implementation phase are more transparent and effective.

The funding arrangements of the SADC/Danida Water Sector Programme were flexible and allowed for the financing a participatory phase of scoping, visioning and compilation of action plans, and the financing of the factual implementation. This separation is required because a participatory project is by definition unclear at the start about the activities to undertake and their costs.

In the planning phases, it appeared important that implementing agents make a transparent selection of 'the' community among the thousands of poor inhabitants with infinite needs in dozens of communities, based on criteria such as proven commitment and organization, or willingness to contribute. Also, it should communicate that there is a ceiling – with or without mentioning an absolute amount, and probe for high-quality needs assessment and planning. This avoids endless wish-lists in the hope that the articulation of more needs and the promise of rocketing beneficiaries and benefits will generate more funding – a promise which is easy to break once funding is allocated. A ceiling may also stimulate more serious ranking of priorities and consideration to increase own contributions in order to realize more interventions.

The planning phase is also the phase in which the community and service providers should agree upfront on the unit costs of skilled and unskilled labour, materials and transport. This also informs the negotiations on the own contributions of communities. Formal signing of the agreed amounts for e.g. wages and own contributions in the action plans avoids the continuous negotiations with communities on the wage rates for their labour contributions. Such protracted negotiations for higher wages happened in 2 of the 4 countries and exhausted project funds quicker than envisaged.

With agreed unit costs, action plans can be made with realistic budgets and signed off with communities and service providers alike. Up till this final implementation budget, implementing agencies and donors can continue negotiating their conditions, e.g. on the social impact assessment, community contributions, or the technical soundness of plans. If conditions are insufficiently met, funding can be shifted to another community that better meets the conditions and is ready to cooperate. For example, if land tenure issues or siting issues for water development in a community are very conflictive, communities may be advised to first sort these problems out.

Once the budget is approved and implementation starts, communities should be fully informed about the budget and money transactions of all activities in their communities (but not necessarily of the salaries of supporting agents). This lessons was learnt because in all countries, any change in activities, even small changes that could be easily and fully justified, led to some suspicion, if not gross allegations, that 'money was eaten' by the implementing agent and/or community members concerned.

In fact, the separation of the planning and implementation phase in Local-Level IWRM is similar to the split for any large-scale project between the feasibility and design studies and the implementation. For communities, it is useful to learn how to translate their water needs into bankable projects, if not for the one funding source, than for a future other one.

A last remark on the two-phased financing regards the overall costs and time for participatory Local-Level IWRM. The IWRM Demonstration projects learned that participatory planning is not necessarily expensive, although a range of community meetings and capacity building are needed. However, participatory planning takes time because some weeks need to be given between meetings to allow communities to consult among each other. Apart from some time needed for mutual consultation, communities were generally ready for any meeting or works. The most time-consuming activity appeared the feasibility, design and budgeting of infrastructure, led by the implementing agencies. Major underestimations of costs and lack of technical knowhow delayed the process most. In order to maintain communities' trust and the project momentum, implementing agents chose to start with the implementation of smaller but visible realizations with tangible outcomes, in particular boreholes for domestic and productive water uses and latrines.

Government officials interacting with community on project realisations, Swaziland

6. INTEGRATING SUPPORT FOR LOCAL-LEVEL IWRM

Lesson six: coordination among supporting agencies significantly increases the benefits from water

6.1. Coordination for more beneficial water use and sustainable management

Local-level IWRM requires horizontal and vertical integration of services provided by local government, government line agencies, NGOs, and private service providers. Figure 3 reminds of the general purposes of coordination in service delivery at the community-level (organizing the demand), district level (responding to demand) and national level (supporting the response). The fragmentation of the water sector itself into single-use sub-sectors, and the fragmentation of government line agencies into agriculture, health, fisheries, social development, and rural engineering departments often fails to provide the coordinated one-window services that generate the higher benefits from water for multiple uses. Agencies can even contradict and contest each other, at the detriment of communities. All IWRM Demonstration projects pioneered ways to establish horizontal and vertical coordination and to ensure agencies talked with one voice.

Figure 3: Service delivery framework. Source: Picoteam 2007a

6.2. Horizontal integration

All projects created technical committees at the interface of the support agencies and the communities. For example, SWADE in Swaziland is a wholly owned government organization that aims at this horizontal and vertical coordination, both in its interdisciplinary staff composition and its networking with other supporting agencies. Accordingly, it created a technical committee for the project site, Maplotini, which encompassed all important support agencies and continued after the project exit. It also introduced a new organizational structure in Maplotini through which the various initiatives within the community could coordinate their actions. In this way, SWADE coordinated, as needed, support for latrines, health education, financing of sugar cane and micro-credits, market linkages, extension, technical know-how, and after-care.

In the other countries, the district government was an increasingly active player to realize such coordination. District government played a critical role in the selection of pilot sites in Mozambique. In Malawi, Mozambique, and Zambia, technical committees of the relevant district staff from the line agencies were created for the project. These committees were more or less active to provide the range of technical services and mobilization services to the selected communities. Importantly, these services continued also after project closure. District governments also coordinated with other projects in the area, such as the upstream reforestation project and the rehabilitation of a domestic water supply system in Dzimphutsi, Malawi. In Katuba, Zambia, the implementing agent coordinated with another NGO to establish the market linkages and financing of inputs.

These successful experiences in creating a sustainable enabling environment led to the main project recommendation to render local authorities, which is local government in most cases, the pivot of Local-Level IWRM. This is also reflected in the Guidelines for Local-Level IWRM, which target local authorities. This implies that their coordination and supervision role should be budgeted for. Local government should coordinate and integrate with the multitude of small initiatives for more effective and longer-term solutions. They are very well placed for such role.

- With progressing decentralization, their mandate is to define, allocate and support or implement development projects and they increasingly have the legal and budgetary competency for that in the national system.
- Local government lives in the area and knows the people. They have the critical contacts with the Traditional Authorities which are essential for any development. They can make things work and prevent and solve inevitable conflicts.
- Elected councillors are often more accountable to their constituencies than agencies with upward accountability, even though councillors' political interests may negatively interfere in service delivery.
- Although staff turnover can be high, local government is permanent as an institution.
- Local government is often more cost-effective. Close to communities, their salaries and transport and operation costs are much lower than those of national or international experts.
- Although local government represents diverse technical skills, lack of capacity is sometimes cited as a disadvantage. However, for their factual implementation, many projects already strongly rely on ad-hoc solicited cooperation of district technicians. Moreover, new projects could be used to further build such local capacity. This is not to deny the importance of line agencies or private experts that can be called upon for more specialized technical support.
- In any case, after project withdrawal, local government is expected to solve problems even if they were created by poorly designed and implemented projects in which local government had no stake in the first place. Without genuine ownership by local government and communities, core sustainability issues cannot be addressed effectively.

- Lastly, local government is the best placed to address a pervasive sustainability issue, which is that communities' own contributions and the per diems and sitting allowances for both staff and for communities greatly differ per project. Temporary high allowances jeopardize staff and communities' motivations for free contributions to maintenance once the project has stopped. By some form of harmonization of contributions and allowances by local government, interventions become more sustainable and equitable.

6.3. Vertical integration

The SADC/Danida Water Sector Programme ensured vertical coordination from the communities to the national level through Project Steering Committees. This not only enabled national support to the projects during and after the project, e.g. for the land issues in Swaziland, or the dam quality control in Dzimphutsi Malawi. However, it was also critical for advice and for deriving lessons and their dissemination for scaling-up.

At SADC level, a total of six experience-sharing workshops were organized with representatives of all IWRM Demonstration projects and SADC officials. The learning of common lessons, as reflected in the Guidelines for Local-Level IWRM and the present 'Lessons Learnt' document, would not have been possible without this.

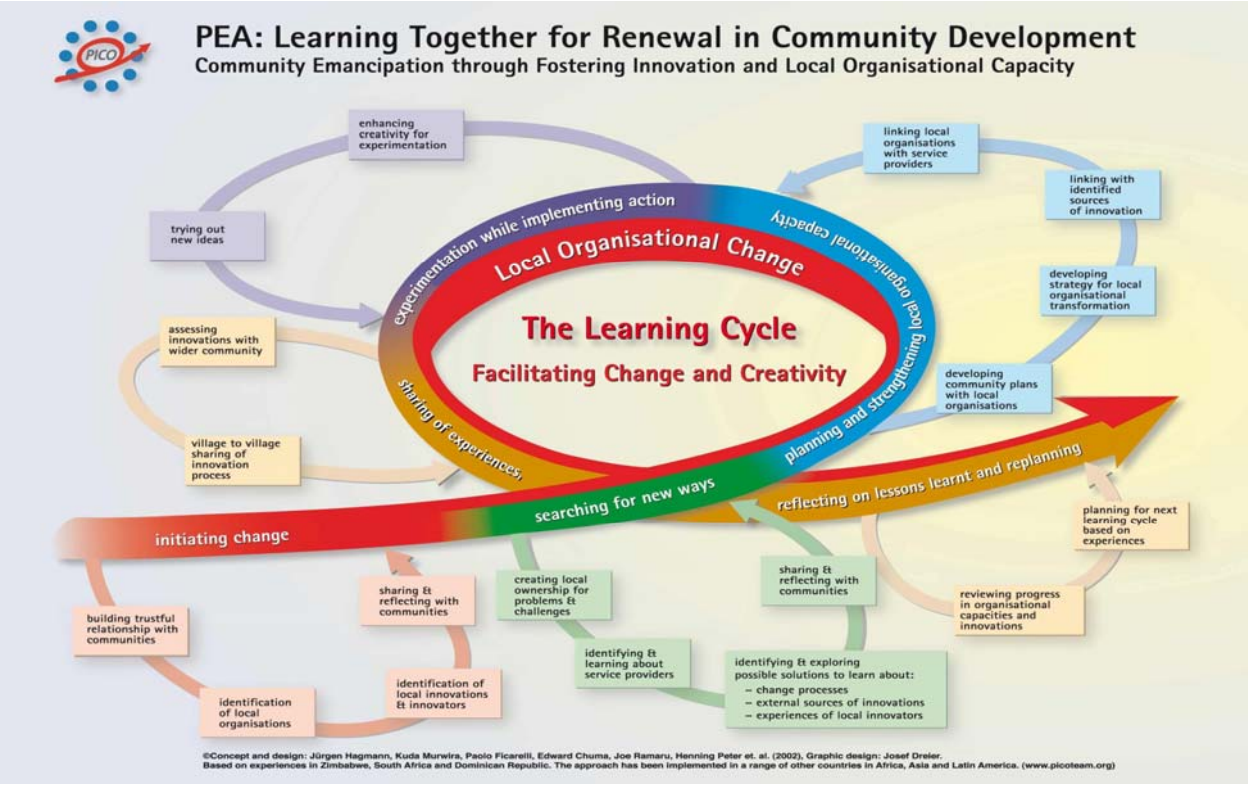
Experience Sharing Workshops

7. ONE LOOP IN LONG-TERM EMPOWERMENT

Lesson seven: by building on the past and empowering for the future, a Local-Level IWRM project is 'one loop' in long-term improvement of communities' integrated water development and management

Time- and budget-bound Local-Level IWRM projects do not only generate the above-mentioned immediate benefits, but serve longer-term purposes as well. Local-Level IWRM projects are essentially one loop in communities' longer-term learning and improvements in their integrated water development and management. This follows the general concept of community development to facilitate change and creativity through cycles, as depicted in Figure 4. Lessons learnt in one loop can considerably accelerate and improve next loops. Subsequent IWRM projects, which are increasingly well embedded in local government's planning processes, are virtuous circles for higher-quality planning and implementation.

Figure 4: The learning cycle in community development. Picoteam 2007b.



Local-Level IWRM is not only well rooted in communities' past integrated water resource management, but also looks into the future. Especially the visioning process elicits communities' longer-term aspirations for developing and managing their water resources. The art of the facilitator during the planning phase is to help the community in carving out one building block that can be implemented realistically and brings tangible benefits within the given

budget- and time-frame, but also contributes to larger and longer-term aspirations. This is delicate because the future entails many uncertainties and risks. For example, in the Mozambican IWRM Demonstration Project, there was a very strong demand for an electric irrigation pump at a site that has no electricity line as yet. Being able to already show ownership of an electric pump will undoubtedly reinforce the irrigators' demand to government or donors looking for bankable projects to pull the electricity line, even before all surrounding residential areas are electrified. However, there is no guarantee at any short term after project ending. In such cases, conditions of time- and budget-frames can be set more stringently from the outset than some community members may wish.

For communities' longer-term empowerment, an important skill learnt through the participatory needs assessment, visioning and compilation of action plans in the IWRM Demonstration projects is the ability to design bankable time- and budget-bound projects that meet genuine needs and that can be submitted to the same funding agency or another future one. Moreover, communities are empowered through the strengthened contacts with local government and, through horizontal and vertical coordination, with NGOs and governmental and private service providers, and more funding agencies. This prepares them much better for not only the sustainability of the current project investments but also for any next and other project.

Indeed, all infrastructure realizations under the IWRM Demonstration projects are now in the Local governments' plans. Many already found funding possibilities and donors for follow-up activities. Proven commitment and performance counted high.

Long-term relationship with Local Government, Zambia

8. CONCLUSION

The seven above-mentioned innovations and lessons learnt in water services in poor rural areas, show the importance of integration in at least six ways:

- integrating people's multiple water uses
- integrating environmentally interlinked multiple water sources
- integrating land and water
- integrating water measures and broader rural development interventions that increase the benefits of water for poverty alleviation
- integrating communities in decision-making about the development and management of their water resources for more sustainable and efficient investments
- and, last but not least, integrating fragmented supporting agencies, often even within the water sector itself.

The experiences of the IWRM Demonstration Projects suggest that these innovations render Local-Level IWRM the best water services approach.

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