Functional sustainability in community water and sanitation

A case study from South-West Uganda

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Richard C Carter and Ronnie Rwamwanja, August 2006

Glossary

CBO	community-based organisation (eg burial group, women's group)
DWD	Directorate of Water Development (of the Ministry of Water, Lands and Environment)
IA	implementing agency (government or NGO, undertaking a project or programme)
KDWSP	Kigezi Diocese Water and Sanitation Programme
LC 1, 2, 3, 4, 5	local councils: 1 – village, 2 – parish, 3 – subcounty, 4 – county, 5 – district
LWF	Lutheran World Federation
MDGs	Millennium Development Goals
O&M	operation and maintenance
SWTWSP	South-West Towns Water and Sanitation Programme
TSU	Technical Support Unit (central government support to district water offices)
USh	Uganda Shilling

Selected technical terms

GFS	gravity flow scheme: a water supply fed by gravity pipeline from a spring to public standposts (public taps) and individual household connections
protected spring	a natural spring enclosed by a small concrete structure and surrounded by a storm drain and fence to protect the quality of water issuing freely from it
jar	an unreinforced cement mortar rainwater storage container (in KDWSP, 420 litres)
tank	a lightly reinforced ferrocement water storage structure (in KDWSP, 4,000 litres and upwards)

Financial indicators

Bottle of Coca Cola (300ml)	USh500
Bag of cement (50kg)	USh19,000 – 20,000
20 litre jerry can	USh3,000
Sheet of roofing tin (mbati), 10ft x 3ft	USh19,000 (30 gauge) Poorer use 32 gauge at USh12,000
KDWSP 420 litre rainwater jar	USh130,000 (full cost) USh18,000 (subsidised price)
KDWSP 4,000 litre rainwater tank	USh400,000 (full cost) USh140,000 (subsidised price)
Crestank plastic water tank (500 litre)	USh173,000
Crestank plastic water tank (4,000 litre)	USh1,045,000
Petrol (litre)	USh2,300
Diesel (litre)	USh1,800
Bottled drinking water (300ml)	USh500
Labour rate	USh1,000 – 2,000 per day, depending on location

Approximate exchange rates: USh3,100 = £1; USh1,780 = US $1)

Acknowledgments

Thanks are due to all those who participated in this work, whether as key informants or interested stakeholders, including those who enjoy the benefits of improved water supply, sanitation and hygiene practices. Particular thanks are due to the leadership and staff of KDWSP. This work was financially supported by Tearfund UK.

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Richard Carter[1] and Ronnie Rwamwanja[2]

Abstract

Currently 56% of the Ugandan population have access to safe water, and 41% to improved sanitation, according to the UN (*Human Development Report 2005*). Kigezi Diocese Water and Sanitation Programme (KDWSP) has been working with communities and households in Kigezi Diocese/Kabale District of South-West Uganda since 1986. Three external evaluations carried out between 1997 and 2004 indicated that KDWSP has consistently performed well in terms of relevance, cost-effectiveness, wider impact, and sustainability of services developed. The achievement of sustainability is recognised to be extremely challenging, and therefore this short research study has focused on (i) whether, and (ii) how KDWSP achieves this elusive goal. The research confirmed through field studies, key-informant interviews and focus group discussions that the services provided through KDWSP do indeed 'continue to work over time' – at least as long as sixteen years according to this study. Three sets of factors have been identified as accounting for the programme's sustainable services. These are:

- taking seriously the principles of community-based development learned over several decades, and to which many other programmes pay lip-service
- processes, both internal to the programme and outward facing – ie how the programme operates
- the underlying values and ethos of the programme, which provide the foundation for the entire edifice.

This study also begins to consider the relevance of these findings to other faith-based organisations, secular NGOs, government and donors.

1 Cranfield University, UK r.c.carter@cranfield.ac.uk

2 Independent consultant rwamwanja@yahoo.com

1 Introduction

The achievement of a lasting impact in rural development is a major challenge for donors and the agencies implementing poverty-focused community projects and programmes in low-income countries. Too few good examples of sustainability exist, from which to develop an understanding of sustainability in practice. The Kigezi Diocese (Church of Uganda) Water and Sanitation Programme (KDWSP) in Uganda, however, is one such model, and its success in delivering sustainable rural water services has been extensively documented through evaluations undertaken between 1997 and 2004 (Carter et al 1997; Morgan et al 2001; Danert et al 2004). KDWSP has now been working with rural communities in Kabale District/Kigezi Diocese (the district and diocese share common boundaries), South-West Uganda, for nearly 20 years. It has so far served around 200,000 people with basic water supply, sanitation and hygiene education, and it adds 20,000–25,000 to that number annually.

During 2005 the authors undertook a small piece of theoretical and empirical research to investigate what accounts for this programme's success in delivering sustainable water services in rural communities, and how the case-specific findings could be applied to other players in the water and sanitation sector in Uganda and beyond.

2 Starting points

2.1 Defining sustainability

Much has been written on the subject of sustainable development and sustainability in many different contexts. The concept is elusive, and interpreted in many different ways. It is important to be clear at the outset what is and is not meant by sustainability in the water and sanitation sector.

In some ways it is easier to understand what kinds of development intervention are not sustainable, or in which sustainability is fragile. The promotion of:

- income-generating activities where there is no market for the goods or services produced (eg capital-intensive irrigation schemes in remote locations)
- technologies which require maintenance, periodic repair and eventual replacement, but for which institutional or financial mechanisms for such activities are weak or non-existent (eg water treatment plants in places where the organisational competence and access to recurrent finance, chemicals, fuel and parts are weak)
- technologies or changes to behavioural practice which offend or fail to fit the culture and social structures of users (eg human excreta re-use in cultures which are offended by such a notion)
- activities which fail to fit the aspirations and risk-aversion strategies of target users (eg mono-cropping of cash crops, where farmers prefer to spread risks across many activities within their farming system)
- interventions which offend or fail to fit local or national political structures and power relations, or public policies (eg the refusal to bow to pressures involving corrupt practices)
- activities which create or exacerbate negative environmental impacts such as water pollution, soil erosion or ecological imbalances (eg introduction of exotic flora or fauna)
- interventions which are not robust enough to withstand external shocks such as increased climate instability, or disease epidemics

…all represent examples of interventions which may fail, sooner or later.

It is clear that the notion of sustainable development interventions has human, psychological, social, cultural, financial, institutional, environmental and technical dimensions, some of which are internal (eg cultural and local political issues) and some of which are external (eg natural climate, markets) to those households and communities which are meant to benefit from externally-supported interventions. In some sense, sustainable interventions have to 'work' in all these areas.

It is easy to confuse notions of **sustainability** with those of **success**. Clearly the two are closely related, but the distinguishing feature is the time dimension. An apparently successful intervention, ie one which is relevant to people's needs and which is effective in addressing those needs, may fail after a period of time because of unforseen factors internal or external to the community involved. For example, an intervention relying on availability of some specific type of spare part or consumable such as fuel or chemicals may work for a

time, but when external conditions change – for instance a fuel shortage or price rise – the intervention fails. A sustainable intervention on the other hand is not only successful in the sense just outlined, but successful over a significant period of time.

In defining the concept of sustainability of water and sanitation services, Abrams (1998) uses a beguilingly simple set of words, which encompass most of what has just been discussed. Abrams refers to a sustainable intervention as 'one which continues to work over time'. This simple phrase needs unpacking. It includes or implies at least the following ideas:

- the fact that the service continues to work implies that it is being **used**
- its continued functionality implies that it is being **maintained**
- furthermore, its maintenance is being **paid** for, or it would deteriorate
- the phrase 'over time' has no limit – ie the service, or some development of it, is **permanent**.

In this work therefore, we adopt Abrams' pragmatic definition, with the emphasis on the permanence of the beneficial change brought about by development intervention. Even though physical hardware (water pipes, storage reservoirs and the like) has a notional design life, mechanisms need to be built in to rehabilitate or replace such technology, perhaps upgrading to a higher level of service in the process. We refer to this concept as *functional sustainability.*

2.2 The importance of functional sustainability

The importance of sustainability may appear obvious, but four aspects are worth highlighting:

- First, however successful an intervention may be in the short-term, if its beneficial impact is not sustained over a long period of time, it cannot be deemed cost-effective. Funds have been invested by users and by donors, and a few years later there is nothing to show for the investment.
- Second, progress toward the Millennium Development Goals (MDGs) or any other service coverage targets is undermined by non-sustainable interventions. If services are falling into disrepair as others are being newly constructed, the net progress toward full coverage decelerates – the antithesis of the drive toward scaling-up of service delivery.
- Third, non-sustainable interventions serve to discourage the households, communities and local government/NGO institutions which have seen some short-term benefit, only to be disappointed as hard-won gains are snatched away. On the other hand, sustainable outcomes build confidence, self-reliance and self-esteem.
- Fourth, as confidence and self-esteem grow among communities and supporting institutions, possibilities for further self-help or locally initiated undertakings can emerge, creating a multiplicative effect.

2.3 The background to this research

There were two main drivers for the research described in this paper. The first was a desire to understand what accounts for KDWSP's apparent success in achieving functional sustainability. External evaluations carried out in 1997 (Carter et al 1997), 2001 (Morgan et al 2001) and 2004 (Danert et al 2004) concur in their positive assessments of the effectiveness, impact and sustainability of the programme. There seemed to be little doubt that the services provided by the programme were sustainable in Abrams' sense. They demonstrably continue to work over time, with many schemes and systems now having delivered water supply and sanitation services to rural households and communities for up to 20 years. The questions focused on how this is so, especially when so many similar programmes fail to achieve this goal. In his highly relevant article on the topic of sustainability, which we come back to later in this paper, Justin Mog (2004) refers to 'struggling with sustainability'. Reaching this elusive goal is a major challenge which few programmes achieve.

The second reason for carrying out the research was to explain, interpret and promote to a wider audience, the good practice developed over 20 years of trial and error, learning and success, community and institutional growth. Specifically, can the practices developed in one district of Uganda, by one faith-based organisation, have relevance for other parts of the country or region, for government, for secular NGOs and CBOs?

3 Methodology

3.1 Overall approach

The overall approach of the work was to **measure**, to **understand**, and to **apply** the findings. It therefore used a mix of quantitative and qualitative data collection methods. Quantitative methods were used to establish the extent of sustainability achieved, and to exhibit relationships between factors which may account for the achievement of sustainability. Qualitative approaches were used to generate depth of understanding of issues.

The research consisted of three components:

- First, informed by prior knowledge of the programme itself and the relevant literature, a set of **working hypotheses** was put down, and a sub-set of these identified for specific focus.
- Second, a set of **in-depth interviews with key informants**, all professionals in rural development in sub-Saharan Africa was carried out.
- Third, **quantitative and qualitative field studies** were conducted to determine the extent to which the services brought about by the programme really have proved to be sustainable, and to explore the reasons for long term impact, or its breakdown.

3.2 Development of working hypotheses

On 15th February 2005 a one-day opening workshop was held in Kampala, attended by 18 participants from government and NGO sectors, donors and KDWSP staff. Papers were presented by the KDWSP Coordinator, DWD's Assistant Commissioner Rural Water, and by the research team. Discussion focused on government and NGO experiences of delivering sustainable operation and maintenance, and began the process of focusing the research. The following day the research team met with KDWSP programme staff to brainstorm the key issues and to plan the research activities. Table 1 summarises the key beliefs of this group, prior to the research, as to how the programme achieves sustainability.

Given the limited funding and duration of the field research, it was decided that the investigation should focus in particular on the topics of ongoing support, and linkages to local government. These were perceived as of particular importance in KDWSP's experience of sustainable interventions.

Although the research project was too limited in duration and resources to enable it to undertake rigorous testing of formal hypotheses with corresponding statistical analysis, the working beliefs in Table 1 provided a useful reference background for subsequent comparison with research findings. This table is therefore revisited in Section 5 of this paper.

Table 1
Key factors accounting for sustainability – identified prior to the field research

Factor	Comments
Community participation – more than lip-service	The importance of full community participation from planning through to O&M is well known. However the difficulties of achieving this, and the commitment required, often mean that little more than lip-service is paid to the the achievement of real community management. This is not the case in KDWSP.
Gender meaning gender – not just women on committees	KDWSP first started working with women's rainwater tank construction groups in the late 1990s. This aspect of the work has prospered, and now KDWSP's focus is shifting to a more balanced attention to women's and men's groups.
Close working relationships with local government	KDWSP has worked extremely hard to forge strong links with local government, from village and parish level, through sub-county, to district. The programme is now also very well known to central government. This puts it in a strong position to advocate for changes to policy and practice nationally and internationally.
Underlying ethos, including a learning and reflective attitude	Honesty and transparency characterise the programme's approach, but perhaps above all has been its freedom, ability and willingness to experiment, try, fail or succeed, learn, and move on. KDWSP is a learning and reflective organisation.
Realistic attention to scaling-up	KDWSP is a small programme, bringing water and sanitation services to 20,000–25,000 new people per year. Kabale District's population is about 500,000. The programme cannot meet the needs of this target population alone, so new approaches to scaling-up are needed. KDWSP has been innovative in its approaches to scaling-up, focusing especially on facilitating others, including the private sector.
High quality of construction, and value for money	KDWSP's strong ethos of respect for all, including its own workers, has resulted in little or no compromise on construction quality. This is unusual in Uganda, especially in programmes funded by government and implemented through the private sector.
Ongoing support	KDWSP has recognised before most organisations that sustainability will not be achieved through *full community management*. Communities require support in their management and maintenance roles. KDWSP explicitly provides such ongoing support.
Emphasis on household water supply as well as community sources	Community management of water supply services is not easy. Household level ownership and management can be preferable. KDWSP's work with household rainwater harvesting has broadened its scope beyond 'community' water supply.
Hygiene promotion through health workers living in the community	KDWSP's health workers live in, and become adopted and trusted by, the communities where the programme works. In a large gravity flow scheme, health workers may be resident part-time for up to a year. This approach is extremely effective in bringing about subsequent community commitment to improved hygiene practices.
Inter-community competitions	As a means of building on community pride and dignity, the programme has for many years organised inter-community competitions to encourage good hygiene practices and effective scheme maintenance. These are very effective.
Commitment to community capacity building	A further expression of the programme's ethos is its belief in communities' potential to manage their own services. Capacity building is seen as a means of releasing the potential of communities, and leaving them better able to initiate and manage their own development.
Geographic focus	Many programmes spread themselves too thinly, often for good political reasons. However, this limits their efficiency and effectiveness, and compromises the chances of sustainability. KDWSP has for many years operated a geographically focused strategy, which enables it to work effectively in one area before moving on to the next.

3.3 Key informant interviews and focus group discussions

Three groups of key informants were identified. These are set out in Table 2.

Table 2
Key informants and focus groups interviewed

Key informant category	Number interviewed	Description
Water sector and development professionals	7 individuals	Including senior DWD rural water staff, consultants, NGO programme staff and private sector.[3]
Local government and other public sector representatives	7 individuals	Including sub-county elected and administrative staff, district and technical support unit water sector personnel and South-West Towns programme staff.[4]
Gravity flow scheme water and sanitation committees	4 committees, 32 individuals	A range of schemes varying in date of construction from 1990 to 1998.[5]
KDWSP programme staff	4 individuals	Field staff concerned with programme implementation and hygiene and sanitation.[6]

3.4 Fieldwork

Visits were made to a selection of schemes and communities representing each of the main water supply technologies promoted by the programme – ie spring protection, gravity flow schemes (GFS) and rainwater harvesting. The purpose of the field visits was twofold:

- to conduct a physical audit of the facilities
- to establish the activities of the management committees.

Selection was part-purposive (eg selecting GFS with reportedly good and poor maintenance records) and part-random (eg the selection of tapstands within individual GFS). An attempt was made to sample a sufficient number of schemes, systems or communities to represent the different technologies (Table 3), but the limited resources available restricted the extent to which this was possible. The field research findings therefore should be taken as indicative of the realities, rather than strictly statistically representative. Nevertheless, the triangulation permitted by reference to previous evaluations, field visits carried out during

3 Graham Carr, Managing Director Aclaim; Kerstin Danert, Technical Adviser DWD; Craig Kippels, Country Director LWF; Annette Nalwoga, Programme Officer LWF; Gilbert Kimanzi, Senior Engineer DWD; Patrick Okuni, Senior Engineer DWD; Joyce Magala Mpalanyi, Consultant; Ronnie Rwamwanja, Consultant and Field Researcher (twice – before and after the field research).

4 Bitarabeho James, Kyanamira sub-county Chief; Kyerere B Frank, Rwamucucu sub-county Chairperson; Herbert Nuwagaba, Programme Coordinator South-West Towns Water and Sanitation Programme; Nzeirwe Frank, Assistant District Water Officer Sanitation; Abel Turyamureba, Charles Twebaze and Jolly Barigye, TSU.

5 Kabanyonyi/Kanjobe; Katuna Upper; Rwancereere; Nyamabaare.

6 Kenneth Bekunda, Grace Kiconco, Kasigazi Julius, Milton Nkurunungi.

this research, key informant interviews and focus group discussions, gives considerable confidence in the reliability of the study findings.

The instrument used for the field survey was a checklist of questions about the management of the water supply scheme or system (including regularity and interval between committee meetings, availability of records, financial assets and revenue collection), and about the physical condition of the facilities (condition of taps, tapstands and protected springs, rainwater storage tanks and jars, drainage aprons, drainage channels, fences, and the general environment around waterpoints).

Table 3
Sampling of technologies for field observations

Water supply technology	Size of sample	Out of total number	Comments
Gravity flow schemes	8 GFS, 5 tapstands from each (total of 40 tapstands)	Approximately 32 GFS, with average of 10–20 tapstands each	Schemes visited: Kibuga, Nyaruhanga, Kacereere, Kaharo, Muyebe, Nyakagyera, Kamuronko, Kigata
Protected springs	50	Approximately 1,000	In four sub-counties selected in part to minimise travel costs, and to reflect relative density: Kashambya, Buhara, Bukinda, Kyanamira
Rainwater harvesting	12	More than 1,000 jars and several hundred institutional and household tanks in approximately 50 communities.	Six jars (420 litre) and six tanks (4,000 litre) in Kitumba and Bubaare sub-counties

4 Results

Since the investigation set out to investigate first whether the services constructed through the programme are sustainable, and if so, how and why, it is logical to examine the field results first, followed by the key informant interviews.

4.1 Fieldwork results – gravity flow schemes (sample size: 8 schemes, 40 GFS tapstands)

All the GFS had two sets of management committees: a central committee responsible for the management of the whole GFS (source, distribution mains, tapstands) and a tapstand committee charged with the management of a single tap-stand. All central committees had scheduled and regular meetings and all had met within the last three months. Records of meetings were available. For all the GFS, the central committees had instituted bye-laws that governed the operations of the schemes.

All the eight GFS had well maintained sources. Two of the eight reservoir tanks had minor leakages. All valves were in good state of maintenance. None of the pipelines were reported leaking.

Tapstand committee meetings

As an indicator of how active the communities were, the study investigated whether committees had regular and scheduled meetings or whether meetings were irregular and ad hoc. Findings are set out in Table 4. The majority (73%) had regular and scheduled meetings. All tapstand committees in Kaharo and Kigata gravity flow schemes had regular and planned meetings. However, all committees meetings in Kacerere GFS were irregular and ad hoc. The focus group discussions indicated that most committees meet at least once every quarter to address O&M issues.

Table 4 Tapstand committee meetings

Gravity flow scheme	Sampled tapstands – regular meetings Number out of 5 (and percentage)	Sampled tapstands – ad hoc meetings Number out of 5 (and percentage)
Kibuga	3 (60%)	2 (40%)
Nyaruhanga	4 (80%)	1 (20%)
Kacerere	0 (0%)	5 (100%)
Kaharo	5 (100%)	0 (0%)
Muyebe	4 (80%)	1 (20%)
Nyakagyera	4 (80%)	1 (20%)
Kamuronko	4 (80%)	1 (20%)
Kigata	5 (100%)	0 (0%)
Totals (n=40)	29 (73%)	11 (27%)

The study sought to further establish when the tapstand committees had held their last meeting. Results are indicated in Figure 1. Ninety percent of the tapstand committees had held their meetings within the last three months, 3% within the last six months and 8% within the last twelve months. The study further sought to establish whether tapstand committees kept records of their meeting. The results are shown in Figure 2. Records for tapstand committee meetings were available for 77.5% of tapstand committees visited. Fewer than one quarter (22.5%) were not able to produce the records on request though they indicated that records of meetings were being kept.

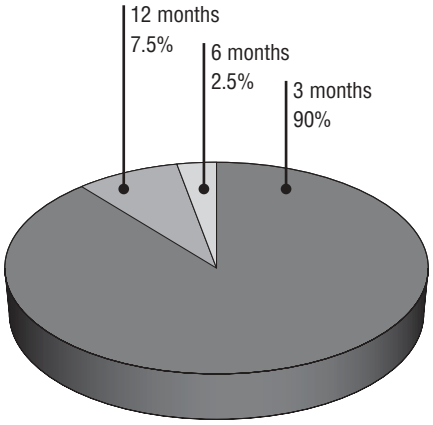


Figure 1 Period when last meeting was held

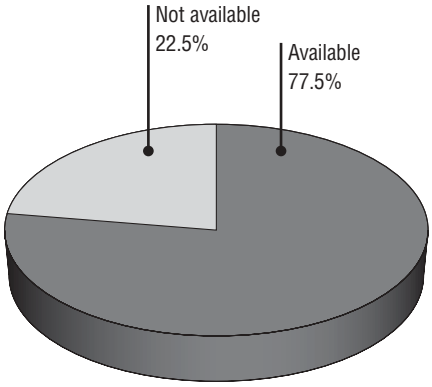


Figure 2 Availability of tapstand committee meeting records

Condition of the tapstands

The study investigated the conditions of the tap, apron, fence, and the general tap environment. Findings are indicated in Figures 3–6 respectively.

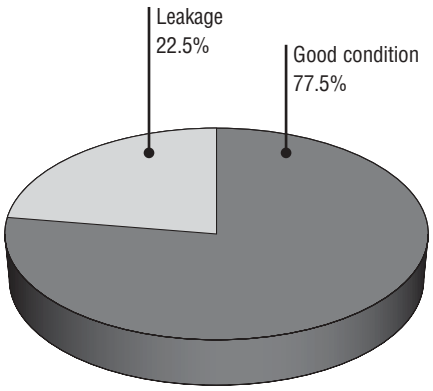


Figure 3 Condition of GFS taps

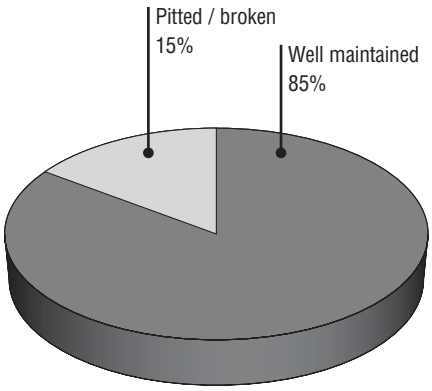


Figure 4 Condition of the apron

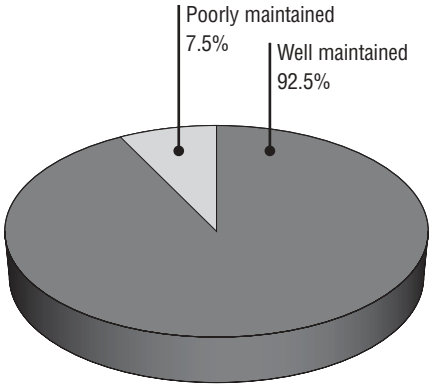


Figure 5 Condition of fence around GFS tapstands

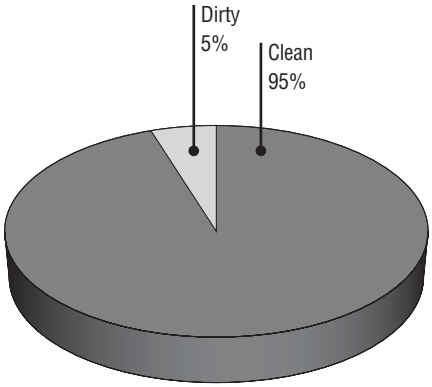


Figure 6 Condition of the environment around GFS tapstands

At the tapstands, 77.5% had taps in good working condition, 85% had well maintained aprons, 92.5% had fences which were well maintained and 95% had clean surroundings.

Revenue collection and management

GFS tapstand committees were asked to indicate the method used for raising cash for operation maintenance. Figures 7 and 8 show respectively how funds are raised and which tapstand committees have bank accounts. The majority (57.5%) of tapstand committees collect monthly or annual contributions to meet O&M needs. However, 42.5% indicated they mobilise resources following a breakdown. Only 37.5% of tapstand committees operate a bank account.

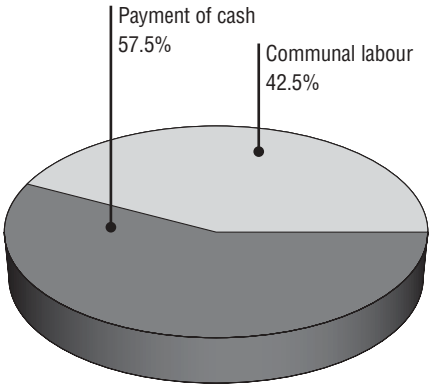


Figure 7 GFS tapstand committee fundraising

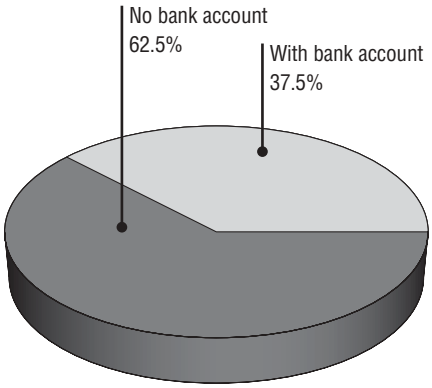


Figure 8 GFS tapstand committees holding bank accounts

4.2 Fieldwork results – protected springs (sample size: 50 sources)

Age of the springs in the sample

New water sources are often better maintained and cared for than old ones as a result of recent mobilisation activities and the training of management committee and user communities. On the other hand a well maintained 'old' water source is indicative of continued care for the water source. The study sought to establish the age of the springs in the sample with findings as shown in Figure 9.

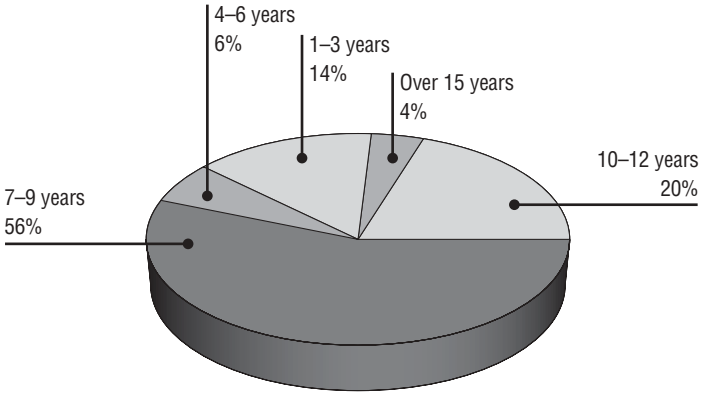


Figure 9 Age of the springs

Most springs (80%) in the sample were over 7 years, with the majority (56%) being within the age bracket of 7–9 years.

Management structures for protected springs

Every spring had a committee and a caretaker. Fifty percent of the committees had regular meetings, 84% had met within the last three months and 56% had records of meetings available.

There was a link between regularity of meetings and availability of records as indicated in Table 5.

Table 5
Spring committees: availability of records and regularity of meetings

Committee meetings (n=50)	Records available (n=28) Number (and percentage)	Records not available (n=22) Number (and percentage)
Regular, scheduled (n=25)	19 (76%)	6 (24%)
Irregular, ad hoc (n=25)	9 (36%)	16 (64%)

If meetings were regular and scheduled, it was more than three times as likely (76% compared to 24%) that meeting records would be readily available. In other words, regularity of meetings is highly correlated with the availability of records, both indicating a strong commitment to maintenance and care of the water source.

Condition of the springs

The study investigated the condition of the fences, spring floors, retaining walls, drains and the environment around the springs. Findings are shown in Figures 10–15.

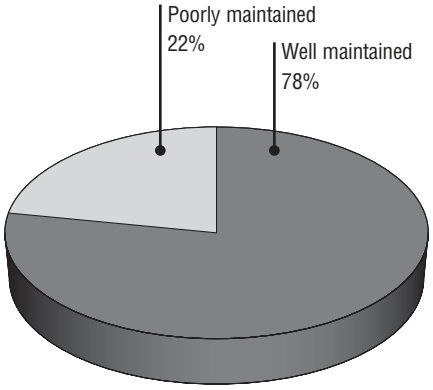


Figure 10 Condition of fences around protected springs

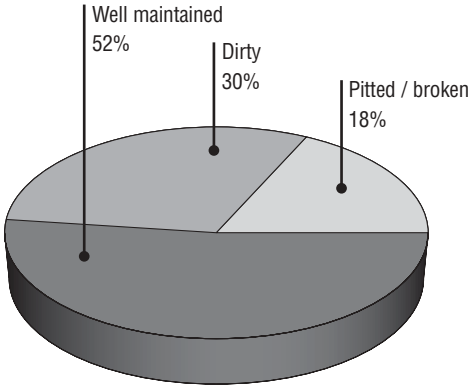


Figure 11 Condition of spring floors

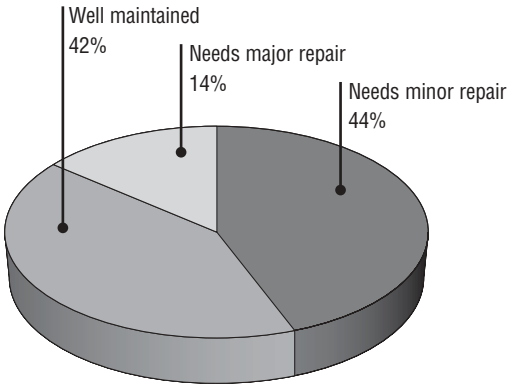


Figure 12 Condition of protected spring retaining walls

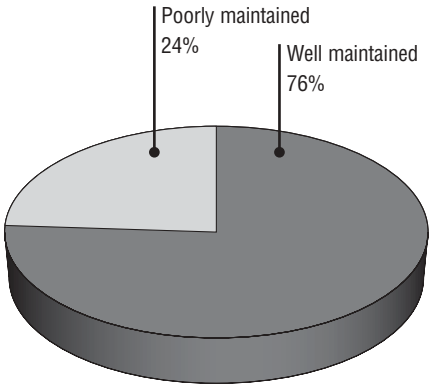


Figure 13 Condition of protected spring storm drains

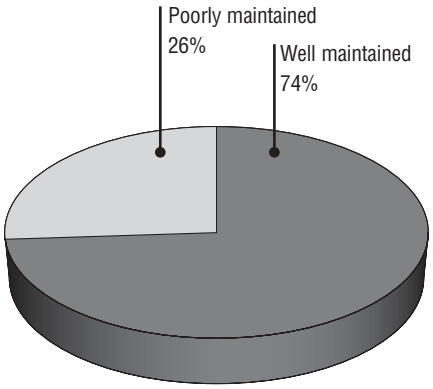


Figure 14 Condition of protected spring main drains

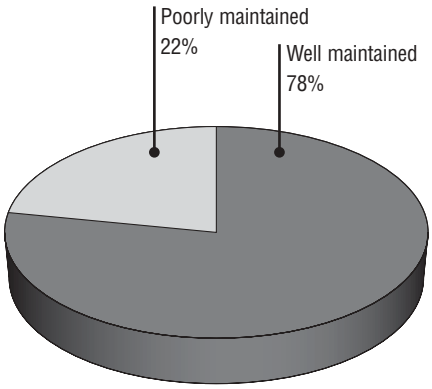


Figure 15 Condition of protected spring surroundings

Further analysis indicates that the condition of the springs at the time of the visit had a link with the regularity of committee meetings. Table 6 shows the condition of the fence and main drain as it relates to the regularity of committee meetings.

Table 6
Protected springs: conditions of fence and main drain related to regularity of meetings

Committee meetings	Fence condition (n=50)		Drain condition (n=50)	
	Maintained well (n=39)	Maintained poorly (n=11)	Maintained well (n=37)	Maintained poorly (n=13)
Regular, scheduled	23	2	23	2
Irregular, ad hoc	16	9	14	11

Where the meetings were regular and scheduled, 92% (23 out of 25) of the spring fences were well maintained compared to 64% (16 out of 25) where meetings were irregular and ad hoc. Likewise, 92% of the springs with regular committee meetings had the main drains well maintained, compared to 56% where committee meetings were irregular and ad hoc. This underscores the need to encourage regular and scheduled meetings for the committees.

Out of the 50 protected springs visited, 20% of the user groups pay monthly contributions to generate maintenance funds.

4.3 Fieldwork results – rainwater harvesting
(sample size: 12 households – 6 jars, 6 tanks)

Twelve rainwater-harvesting facilities were visited. Of these, six were water jars and six were water tanks. All the rain water supply facilities were at household level. The condition of the jars and water tanks, the taps to the tanks, the waste water drains, the soakaway pits and the general environment were found in good state of maintenance. All households with the water jars and tanks had been visited by the programme monitor within the last three months.

4.4 Key stakeholder interview findings

The findings of the interviews with key stakeholders are summarised in the following sections.

4.4.1 Water sector and development professionals

On the concept and meaning of sustainability

Sustainability is a **dynamic** concept. Technologies or ways of doing things change, but the service remains in place. Sustainability adds the **time dimension** to 'success' or effectiveness. Sustainable interventions 'stand the test of time'. Sustainable services function continuously. One respondent expressed the view that sustainable activities are those which continue to function over time **without external support**. He agreed that some types of intervention will never be sustainable in this sense. Sustainability is about the **continued enjoyment** of (health and livelihood) benefits – permanently.

On the factors necessary to achieve sustainability

Factors which respondents thought were important included:

- meeting a real **need**
- ensuring that the community is fully **involved** in decision-making
- building on what **people already know** and do
- selecting appropriate (manageable) **technology**
- good quality **construction**
- reliable support from **private sector** in terms of, for example, spare parts supply
- the 'fit' of the scheme to **policy and politics**
- **strong community organisations**, strengthened by appropriate capacity building
- **ongoing support** by an agency external to the community.

For one respondent, the single most important priority is **community empowerment**. For another the single most important factor is **leadership**: able, energetic, skillful, knowledgable, committed leadership, with integrity and openness.

On behaviours to avoid

Behaviours that respondents thought should be avoided included:

- sitting in offices 'designing things' for people
- creating new community structures when they already exist
- thinking about what is good for communities – rather than finding out from them
- giving money to people to attend meetings
- creating dependency
- focusing only on delivering outputs, especially physical hardware
- failure to take the time to really understand the community and its culture
- development as a gift – communities must play their part
- paying lip-service to demand-responsive approaches
- 'one size fits all' solutions.

For one respondent, probably the single most damaging aspect of many programmes, which undermines sustainability, is **poor financial management**.

Concerning ongoing support

Ongoing support is crucial. Nothing lasts without follow-up support, 'keeping the fire burning'. Backup is needed to assist in the solution of technical problems, and to support committees when they run into difficulties. For how long? Indefinitely – there is no time limit. But the exact type and amount depends on the technology and the community. How much and what type of **contact** should the implementing agencies (IAs) have with the community? Enough, but not too much, and of the right type. A lot at the beginning, significant support later on, and continuing but reducing over the long term.

On intangible qualities of IAs and communities

Commitment, drive, initiative, ethos, underlying values, transparency, honesty, accountability, leadership by example, respect, political wisdom, a learning mentality. Can these intangibles be created or encouraged? Yes, by **demonstration and leadership**, but there are limits to what can be achieved.

On partnerships between donors and IAs

Donors are often far-removed from the realities; in some cases this also applies to IAs. Donors do not always listen, and they can be very negative. It is important to establish good working relations early on, then later problems can be dealt with. Donors should realise they 'don't know it all'. Sometimes they offer assistance which is unrelated to real needs.

Donor and IA must each see themselves as equal partners. Person-to-person relationships are fundamental, with good transparent reporting and communication. The two are equal but not identical. Donors must be flexible and they must understand realities on the ground.

On the achievement of sustainability

'If we only did sustainable things, we wouldn't do much.' 'It doesn't always work.' 'It isn't in the corporate culture [of some IAs and donors].'

4.4.2 Local government and other public sector representatives

On programme success

The programme projects are **demand driven**, as opposed to government projects that are often politically driven.

The programme has exhibited a high level of **transparency**. What is designed for the project goes on the project. There are **clear rules** for how the programme operates: every GFS, for example, has its bye-laws that local councils enforce. So there is a very good relationship between the programme and the local councils. For example, you cannot make any connections on the GFS unless you have been authorised. It does not matter who you are.

The programme **does not discriminate**. People who never used to meet are now able to meet and jointly address their problems. (Historically the people of Kabale are divided along religious lines.)

The programme approach **involves communities** in the identification of problems and working with them to find solutions right from the start of a project. The diocese values the pre-construction process. There is analysis of problems, and mobilisation that creates demand, addressing both water and sanitation. The mobilisation process involves discussing terms with communities – who is responsible for what – leading to a signing of an agreement of co-operation between the two parties. The community spirit of ownership is developed at the initial stages.

There is a **close working relationship between the programme and the local authorities**, specifically local councils (LCs) 1, 2 and 3. The sub-county contributed USh1.5 million for the extension of Nagyera GFS. Most sub-counties have a budget for supporting the programme work.

There is a **strong follow-up component** of the programme coupled with exchange visits. The programme has exhibited a quick response to problems when called upon to assist communities. The follow-up process is not a one-time event but a continuous activity.

'At district and national level, we all seem to know what to do but we don't reach those levels of what needs to be done. The diocese … knows what to do and goes ahead and does it.' For example, the district has the equipment and know-how but doesn't conduct water tests. The diocese on the other hand uses the district staff to test water under the diocese programme.

In government programmes, extension staff have taken a low profile, yet they are key to both implementation and operation and maintenance (O&M) of the facilities developed. The resources for mobilisation activities are left at the centre and often do not reach the extension staff.

On continued assistance

'**If the programme closed, the projects would collapse.** The programme office is seen as a point of reference. The programme is open and not corruptible.'

'It's true the committees know what to do but you see, **the environment keeps changing**. Tomorrow we may have a new sub-county leader who may just order extensions. Without a head office to say yes or no, a lot of things can go wrong.'

On improvements to be made

There is a need for a contact person at programme level – a person to contact on any issues arising from the sub-county. Consider establishing a commercial shop for obtaining spares. There may be spares at the programme office but at times there are no staff available.

To avoid possible future problems, there is a need to survey the water sources and obtain **land titles** where appropriate.

On financing of O&M

There is a clear government structure and support for construction but not so for O&M. 'We [government] don't seem to have an idea on the cost of follow-up and for O&M. These costs could be incorporated in the initial project costing. The [South-West Towns] umbrella organisation is providing technical backup for the maintenance of GFS. Earlier problems within committees have been largely mismanagement of funds. The umbrella organisation may, after some time, give us the cost for O&M of a GFS.'

In generating O&M funds, **payment of flat rates by beneficiaries is not good**. Some have used water from GFS for irrigation and other farming activities including watering cows. If it were possible, all private connections should be metered.

On O&M-related problems

The major problem for [government] GFS is **uncoordinated connections**. Thus you have pipes but no water in the pipes. This is one problem that the diocese has addressed in its programme.

The diocese has been strong on O&M partly because it is **independent from political pressures**.

On the district – programme co-ordination and district support

Some level of **co-ordination** between the programme and the district water office is needed. There is more co-ordination at planning stages and less during implementation. This, however, needs to be improved.

The district demands **facilitation** (sitting allowances and other expenses) whenever invited to be involved in programme activities. The programme has tended to use government workers as individuals while on programme activities (as in water testing). Such work on an 'individual' basis is often not reported to the district office.

There is no good forum for sharing information in the district. The various NGOs in the district operate independently and individually. The challenge is to develop a **district-based NGO network**. Currently there is limited confidence in the district to involve NGOs given the variance in the level of success in projects under district vis-à-vis projects under NGOs.

4.4.3 Gravity flow scheme water and sanitation committee members

KDWSP GFS are constructed in response to demand, and they therefore address real need: at Kabanyonyi, there were outbreaks of dysentery due to contaminated water. Two of the villages suffered dry season water shortages. In Katuna Upper, communities collected water from a swamp. There were sporadic outbreaks of malaria and dysentery. The same community noticed that a neighbouring community with a GFS had fewer cases of water-related disease. In Rwancerere, there were water shortages. Households had to travel long distances (over 3km) for contaminated water, which led to disease. In Nyamabaare, water was distant.

At all GFS, **community cash contributions are required**, and these are placed in a bank account as an initial O&M fund. The method of raising this cash varies. In some schemes the households contribute directly. In others the sub-county pays.

GFS management committees have a good (generally about 50:50) gender balance, and they work effectively, making decisions, linking with the LCs and participating in competitions.

Maintenance is the immediate responsibility of scheme caretakers, who answer to the GFS committee. Major repairs and supply of specialist spares are supported by the diocese. Routine spares purchase and repairs are carried out without reference to the diocese.

Financing of O&M is from annual household contributions and fines (for absence from meetings, for grazing animals near tapstands). All but one (Katuna Upper) of the schemes visited have bank accounts, many with substantial balances. At Katuna Upper there was no bank account or O&M fund, and no household fees were being raised. However, the community members would make ad hoc contributions in case of breakdown.

Committees and the diocese work closely with **local government** (LCs 1–3), especially with respect to mobilising communities and enforcing bye-laws. In some cases sub-county health assistants are involved in sanitation promotion, and LC executives sometimes involve representation from GFS committees.

Ongoing support to GFS comes mainly from the diocese. Local councils do not contribute to the financing of O&M. None of the GFS visited had received any support from the district.

4.4.4 KDWSP programme staff

Reasons offered for the success of the programme

- Christian **values** and keeping to the rules and values of the church.
- Good programme **leadership**, **transparency** in programme activities and actions. Bishops' statements like 'Why don't you be like people in the water programme?' that reflect transparency.
- **Free interaction among staff**, respect for all involved irrespective of position in the organisation.
- Programme bi-weekly **meetings and reviews.**
- **Calling a spade a spade**. Self-criticism and sharing among staff.
- Personal touch, **interest and support by the bishop**.

- There are **plans and resources** to execute those plans. All staff are adequately facilitated to perform their tasks/duties.
- The programme is **demand responsive**. Community makes contributions.
- Emphasis on **gender**. 50% women representation on committees.
- The mobilisation approach where the **programme personnel lives in the community** with the community.
- The official **handing over** of programmes and the basic tools for O&M (GFS).

Concerning ongoing support

The programme gives **follow-up support** to commissioned projects. This includes:

- Refresher training to communities, committees and caretakers.
- Establishment of community monitoring teams.
- Conducting annual competitions among GFS and giving prizes as incentives.
- Facilitating study tours and exchange visits.
- Refresher training of CBOs involved in building water tanks/jars.
- Formation of demonstration villages as learning grounds.
- Support visits by the programme staff.
- Response to community requests to make repairs.

On working with the district/subcounties

The programme has the moral support of the district. The lower level authorities have played a key role in mobilisation activities and enforce rules and bye-laws developed by committees. However political leaders often want to use the programme for political gains. LCs 1–3 are kept active monitoring the projects and enforcing bye-laws. In areas where LCs are supportive there are higher standards of O&M than where LCs are less supportive. The support of the LCs is more crucial during the ongoing support than during construction. Working closely with LCs creates an enabling environment for the programme to operate and avoid saboteurs. The non-segregated approach reinforces the good working relationship with LCs. The initial good relationship built with LCs 1–3 is instrumental for the success of the ongoing support.

On recommendations for improvements

- The programme needs to document its experiences. The information is available but needs to be organised and documented for future reference and for others to learn about the programme.
- Maintain end-of-year self-appraisal to identify what was good for the programme and areas that need improvement. How can the programme perform better?
- Maintain motivation of staff through the annual outing with spouses.

5 Synthesis

Over its 20 years of operation in Kabale District/Kigezi Diocese, KDWSP has demonstrated that it is possible to deliver sustainable water and sanitation services to, and with, communities and households. Systems which were constructed up to 16 years ago have been examined in this study, and found to be still performing well, both technically and institutionally. This is in stark contrast to some other programmes in the district, in which two-year-old systems are in serious trouble.

The delivery of sustainable water supply services is about moving people **from independence** or near-total self-reliance on distant, unprotected, unreliable, contaminated water sources **to a state of inter-dependence**, in which they have an improved service but need to interact with an external support structure provided by diocese, local government, private sector, CBOs and NGOs, or some combination of all these. This point is crucial. Water and sanitation interventions need to avoid two potential pitfalls. The first is the myth that technology can be transferred and community institutions set up, and the community can then be left to manage on its own with no further external support. This is the myth of perpetual motion – wind up the clock and it runs for ever. All systems run down in the absence of continuing inputs of time, energy, money and support. The second trap is that of creating excessive dependence of the community on the implementing agency. If, for example, communities can only access post-implementation support from the single agency which implemented the programme in the first place, and for some reason that agency fails to provide support, then the community is no better off than if it is left to fend for itself. Somehow it is necessary for implementing agencies to boost the self-reliance and capacity of community institutions, while at the same time establishing or ensuring that a robust and diverse set of support structures exists for the community to access.

This research has made clear that three broad sets of factors are needed for success and sustainability in rural water and sanitation programmes. In brief, these can be summed up as:

- **doing the right things**
- **doing things right**
- **doing things for the right reasons.**

With all these in place, the achievement of sustainability is possible. Weaknesses in any one (or more) threatens to undermine success and sustainability.

Doing the right things

By this, we mean that the many lessons that have been learned in the sector over the last few decades need to be put into practice. This is a matter of not simply paying lip-service, but taking very seriously each of the aspects which are known to be important. Table 1 lists many of these 'building blocks' – full community participation; attention to gender; working closely with other players in local government and NGOs; strong attention to construction quality; being explicit about the need for ongoing support; energetically promoting hygiene and sanitation; building the capacity and self-esteem of communities; planning strategically for optimum cost-effectiveness.

Doing things right

Stacking the right building blocks together is not enough though. Doing things right means attention to **process** as well as activity. It is a question of **how things are done**, not just what is done. The way staff are treated within the programme (with respect and compassion, giving them a voice regardless of job function or seniority, and with openness) and the way communities and public authorities are treated by the programme (also with respect, a spirit of partnership, and a willingness to learn) determines the effectiveness of the implementing agency both as an entity and in its dealings with the communities where it works.
The quality of leadership, and the qualities of the implementing agency, with particular emphasis on transparency and willingness to learn, fundamentally affect its effectiveness.

Doing things for the right reasons

There is a deeper level within the process of doing development, and this relates to the motivation, values and ethos of the implementing agency. If 'doing development' is simply a job, a means of paying the bills, then it is unlikely that the process factors touched on under 'doing things right' will remain in place for long. The work is then reduced to a matter of stacking the building blocks with no particular commitment to the process or the outcome. If on the other hand there is a strong passion for the work, driven by compassion for the marginalised, driven by humanitarian or religious motives, or motivated by strong instincts for social justice and equity, then the rest can follow.

Justin Mog (2004) in his paper 'Struggling with Sustainability' emphasises the importance of six 'process-oriented criteria' for evaluating sustainability: (1) the character of participation; (2) the success and nature of institution- and capacity building efforts; (3) diversity, multiplicity and adaptability of ideas promoted by the programme; (4) accounting for heterogeneity, diversity and dynamism; (5) understanding and use of local knowledge, skills, initiative and constraints; and (6) recognising the influence of external conditions, markets and policies. Many of these fit closely with the attributes of KDWSP, as developed over nearly 20 years.

Challenges

None of the preceding discussion is to suggest that sustainability is easy to achieve.
In KDWSP three particular challenges to sustainability are appearing:

- Because some of the physical structures implemented by the diocese are now reaching the end of their design life, it is not surprising that some cracks are beginning to show. So far, repair and minor replacement has been appropriate, but in future more serious physical **rehabilitation** or replacement will be needed.
- KDWSP's approach has applied in practice the well-established principles of full **community participation**, including insistence on cash contributions for implementation, and full community responsibility for maintenance costs. Although in the past this has concurred with government policy, three recent changes or trends threaten this approach. The first is the fact that in practice many implementing agencies (including government) do not insist on cash contributions; second, the move

to districts contracting out to the private sector has largely undermined community participation in government programmes; and third, the tendency for local and national politicians to 'buy' votes by telling communities that it is unnecessary to pay for the services that those same politicians dishonestly claim responsibility for.

- The continuation of KDWSP's work depends largely on external finance. This is getting no easier to obtain, despite the increased emphasis on the African water sector internationally. It is ironic that one of the most successful programmes in Uganda is only able to operate at about 50% of its budgeted level, due to difficulties of accessing international funds.

Opportunities

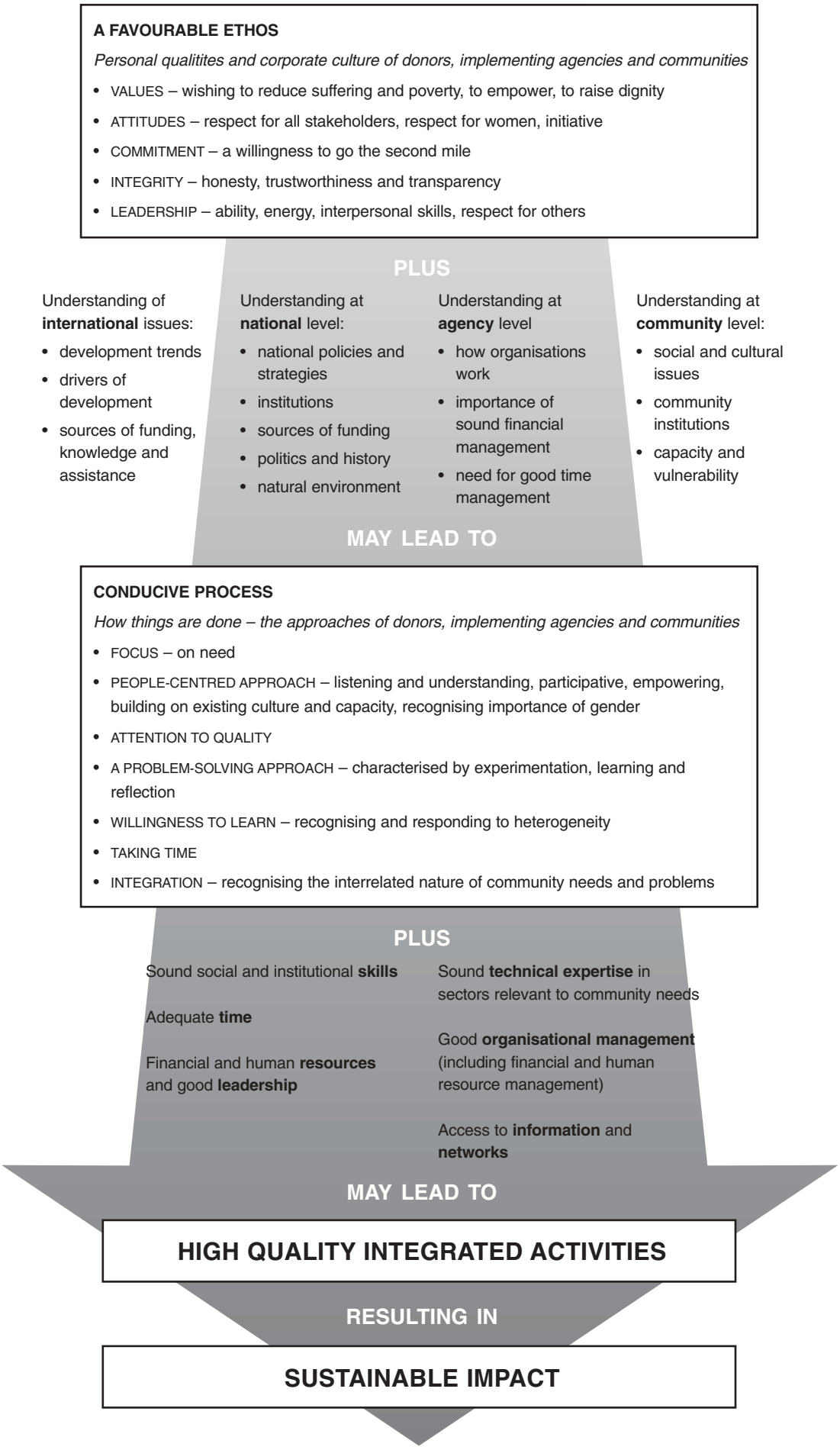
There are changes taking place however which present opportunities for KDWSP and other implementing agencies, if they are able to adapt their ways of working appropriately. Two factors in particular stand out, and both relate to the situation of the poor and the relatively wealthy in rural Uganda.

The first factor is the strong awareness on the part of a large proportion of the rural population of their limited cash incomes, and the correspondingly high motivation to tackle this need. Given viable opportunities, including training, credit and start-up support, there is considerable potential to stimulate the small business sector, part of which could focus on water sector activities such as construction of rainwater jars and tanks, guttering, latrine slabs and hand-washing facilities. KDWSP has already demonstrated on a limited scale that such an approach can work. Scaling it up much more widely would not only extend access to safe water and sanitation but also help to ensure the sustainability of such services.

The second and related factor is provided by the increasing divide between the relatively wealthy and the poor. From a social perspective this has many negative implications, but from an economic viewpoint it provides opportunities both locally and nationally. In short, the relatively wealthy represent the market for the goods and services produced and supplied by the poor. The development of small businesses run by those who are now relatively poor gives the opportunity to redistribute some of the wealth which is increasingly evident both in local communities and in the capital.

Figure 16 is an attempt to summarise the preconditions for sustainability, as evidenced by KDWSP. Full account needs to be taken of at least three interlinked aspects. Underpinning the entire endeavour is the **ethos** – the values, attitudes, integrity and degree of commitment – of the individuals and organisations involved ('doing things for the right reasons'). When combined with a sound understanding of international, national, community and institutional contexts, a sound ethos can lead to a set of **processes** which are conducive to the achievement of sustainable beneficial impacts: truly participative and empowering, mutually respectful, culturally sensitive and taking sufficient time ('doing things right'). Processes alone are not enough though, and they need to be combined with skills and expertise in technical, social and institutional aspects, financial resources, sound management and access to information and networks, to build the right set of intervention **activities** ('doing the right things'). When all these ingredients come together in a vision shared by donor, implementing agency and communities, then a lasting impact can be achieved.

Figure 16
A framework for understanding sustainability of water and sanitation interventions



6 Implications

KDWSP works in one district of Uganda, with a range of technologies specifically suited to the hilly, well-watered natural environment and to the densely populated but dispersed nature of its communities. The programme is situated within a diocese of the Church of Uganda, a position which confers on it certain advantages and opportunities – such as being able to use its network of local church pastors and its international links to other churches abroad. It has also been able to access international funding from a wide range of secular and Christian donors.

The final question therefore in this work, is to what extent, and in what ways can the findings of the work be relevant to other organisations working in different contexts, in Uganda or beyond her borders?

6.1 For faith-based organisations

Many other churches and faith-based organisations share the underlying ethos of KDWSP, and the priority areas for their learning are most likely to lie in the aspects of process ('doing things right') and activities ('doing the right things') described earlier. It is always invidious to generalise, but one common area of weakness within faith-based organisations, as well as non-specialist NGOs, is in their professional and technical understanding of the sector-specific issues. This is understandable in organisations whose focus is on spiritual matters or on welfare-motivated relief. KDWSP's experience is being documented now, and many of the guidance documents which will soon be available through the programme will be of inestimable benefit to others, with appropriate local adaptation.

Some observe that not enough faith-based organisations or NGOs take the trouble to build strong links to local government. They generally prefer to operate independently, and their respect for government is often reduced because of limited understanding of the constraints faced by government. This attitude should be resisted strongly. The greater the mutual respect and understanding between the different sector players, the greater the likelihood of making a significant and lasting impact together.

6.2 For NGOs

The main difference between secular NGOs and faith-based organisations lies in the different motivations for the organisations and individuals involved. While faith-based organisations explicitly espouse certain religious values and goals, secular NGOs express their aims in humanitarian terms, without direct reference to God. Nevertheless the ethos of such organisations is largely driven by that of the individuals who work for them, and whether they have religious convictions or not, their motivation for social justice can be very high. If it is not, then the foundations are likely to be weak.

Some NGOs have specialist expertise in water and sanitation, while others do not. The danger of limited access to such specialist expertise is that generalists are put in charge of matters for which they lack the necessary expertise. Even if water and sanitation specialists are not employed full-time, it is essential that generalist NGOs have access to reliable and

professional specialist technical advice. Ethos and process are not enough, without the right activities ('doing the right things'). Again, it is also important that secular NGOs also build strong links with local and national governments where appropriate.

6.3 For government

Governments operate under many more constraints than faith-based organisations or NGOs. They are subject to many more bureaucratic procedures, and processes of decision making and policy formulation take a long time, for good reasons. Government staff, especially at lower levels, are often paid very poorly, and their individual operating environment is challenging in the extreme. Staff turnover in local government is high, so institutional memory is short. Corruption is frequently endemic, and even if an individual wants to confront it, such resistance is almost impossible to carry through. Nevertheless, central government has the mandate to set policy and provide strategic guidance to districts; and local government has the responsibility of delivering public services though contracting out to the private sector. There may be many weaknesses in the ways governments work, but there are encouraging trends too, and a strong public sector is essential in any partnership between government, donors, NGOs, the private sector and communities. Finally it must not be forgotten that most of the funding (the 2005 Sector Performance Report implies around four-fifths) for Uganda's water and sanitation sector is channelled through government.

So what lessons can central and local government learn from the experiences of KDWSP?

Faith-based organisations and NGOs tend to be strong on motivation and social processes, but some observe that they can be weaker on technical specialism. On the other hand, governments may be highly competent when it comes to the technical aspects of the sector, but the underlying ethos and values, internal and outward-facing processes and operational constraints can weaken their impact significantly. The key question is the extent to which characteristics of transparent, accountable and inspiring leadership and management can be nurtured in an operating environment which is inherently so challenging. There is little doubt, though, that this is where government efforts to improve effectiveness and enhance sustainability should focus attention. Sound governance, high quality management and full transparency and accountability are needed, but these are only possible with determined leadership and the shared commitment of all.

6.4 For international donors

The main implications for donors are based on comments made by sector professionals who urge:

- a greater in-depth understanding of the realities – social, economic, institutional and political – which implementing agencies face in their work
- long-term partnerships with implementing agencies based on equality of status – if not of function – and based on person-to-person relationships

- flexibility to respond to changing circumstances in the operating environment or in the circumstances of the implementing agency.

Given that the majority of international aid to the sector is channelled via the government in the case of Uganda, it is important that donors help government programmes to operate in a sustainable way. They need to recognise that it is important for the state to invest in its staff and to assist the government to make progress in the areas of transparency, accountability, leadership and management. They also need to acknowledge that best practice may also exist outside of government programmes and help governments to learn from and replicate good work carried out by NGOs as well as the private sector. This is vital if services are to be scaled-up quickly. It is also important that some money continues to be channelled via non-state players if this cross-fertilisation is to flourish.

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Functional sustainability in water and sanitation
A case study from South-West Uganda

Authors: Professor Richard Carter and Ronnie Rwamwanja

Front cover photo: Richard Hanson / Tearfund
Back cover photo: Professor Richard Carter / Cranfield

Tearfund contact: Laura Webster
Senior Policy Officer, Water and Sanitation
pptadmin@tearfund.org

Cranfield contact: Professor Richard Carter
r.c.carter@cranfield.ac.uk

Diocese of Kigezi contact: Rev. George Bagamuhunda
Director of the Kigezi Diocese Water and Sanitation Programme
kdwd@infocom.co.ug

DIOCESE OF KIGEZI
CHURCH OF UGANDA

Cranfield UNIVERSITY
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