

Water supply provision for poverty alleviation in rural areas of Zambia

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Abstract Zambia has invested substantially in rural water supply since the early 1970s, but the actual number of people effectively provided with safe drinking water remains very low. It is estimated that only 37% of the population had access to safe water supply in 2000, a deprivation that has characterised and entrenched poverty in Zambia's rural areas. Attempts to alleviate this poverty require a policy that favours a shift in emphasis from provision of *safe water supplies* to that encompassing *productive water*. The latter enables families to increase income and reduce costs of healthcare services for water-related illnesses. Gains in income generation will further enable communities to take care of their safe water needs, addressing the systematic challenge of sustainability in the delivery of rural water supply programmes. Under such favourable conditions rural communities can enjoy a life of quality and dignity.

Key words appropriate rural water supply; productive water; income generation; poverty alleviation; sustainability; Zambia

INTRODUCTION

Of Zambia's population of 10.2 million people in 2000, more than half were under 20 years old (GRZ/CSO, 2003). The incidence of poverty in the country continues to rise, with about 80% of the population living below the poverty line. Most of these poor people live in the country's rural areas. In 2005, Zambia's rural population was estimated at 7.7 million by the National Rural Water Supply and Sanitation (NRWSS) Programme. This constituted about 66% of the total population, which is also characterised by low access to basic services. The actual number of poor people effectively provided with safe drinking water has remained very low despite the country's significant investments made in rural water supply since the early 1970s. Both the *Living Conditions Monitoring Survey of 2002* (WHO/UNICEF, 2006) and the census of 2000 (GRZ/CSO, 2003) estimate 37% of the population had access to safe water supply in rural areas, whereas access to sanitation was a paltry 13%. At such rates of development, concern arises as to the viability of the country's attaining goal number 7 of the Millennium Development Goals (MDGs) to which the Zambian government is committed. Exacerbating limited access to safe water and sanitation is the fact that Zambia has not yet developed the required capacity and management arrangements for providing better access to services in the near future.

Given the importance of adequate water supply coverage to human development, the Zambian government recognised in 1994 the need to increase investment in this sector to raise coverage. To this effect, the country's Poverty Reduction Strategy Paper (PRSP) included water supply and sanitation as one of the intervention areas for tackling the country's poverty situation. However, the attention given to water supply and sanitation in the PRSP document was judged inadequate as only 3.5% of the total PRSP budget of US\$1.2 billion was allocated to water compared to 16.7% for health and 12.3% for education (MLGH, 2002). This situation has arisen from disorganisation in the sector due to the absence of a strong constituency to articulate its funding requirements.

Currently, the mandate to provide water to rural areas has been left to non-governmental organisations and sector ministries (Water Supply and Sanitation (WSS) Act, 1997), particularly through the Department of Water Affairs in the Ministry of Energy and Water Development and the Rural Water Supply and Sanitation (RWSS) Unit, Department of Infrastructure and Support Services (DISS) in the Ministry of Local Government and Housing. The District Water, Sanitation and Health Education (D-WASHE), adopted as a national concept in 1996, has become the focal point in the delivery of RWSS. So, it may be observed that, in spite of the extensive reorganisation of the sector, which was supported by the adoption of sector principles in 1993, a National Water

Policy in 1994 and the Water Supply and Sanitation Act in 1997, its organisation has remained complex and, at times, confusing (GRZ/CSO, 2003). In other words, policy initiatives that have been adopted with regard to rural water supply have not been supported by any major institutional reorganisation.

ACCESS TO WATER IN RURAL ZAMBIA

Institutional challenges

Table 1 summarises data pertaining to water access by rural communities by source as obtained from the Living Conditions Monitoring Survey (LCMS) of WHO/UNICEF (2002). Some of the observed declines in water supply services recorded after the adoption of the sector reforms in 1994 may have been as a result of policy, regulatory and coordination institutions' re-arrangement that came with the reforms. Prior to 1994, the Ministry of Energy and Water Development (MEWD) combined the responsibilities of water supply, and water resources development and management. The adoption of the National Water Policy in 1994 and the WSS Act in 1997 led to the separation of these two functions, with MEWD taking the water resources development and management function, while the Ministry of Local Government and Housing (MLGH) was assigned the functions of water supply. Immediate confusion was created as it was decided that the MEWD retains regulatory functions of the water supply and sanitation function. This entailed that the newly formed National Water Supply and Sanitation Council (NWASCO) be housed in the MEWD. This institutional arrangement hinders development as the two major ministries continue to both disagree on the reporting mechanism of the regulator and compete for the water supply component (Fig. 1).

Table 1 Percentage distribution of rural households by main source of water supply in 2002 and 1998 (WHO/UNICEF, 2006).

Year	Area	River/ Lake	Unprotected well	Protected well	Bore- hole	Public tap	Own tap	Other tap	Other service
2002	Rural	24	38	12	16	3	1	1	2
	Urban	1	12	4	3	33	38	7	0
1998	Rural	23	39	16	16	3	1	1	1
	Urban	1	9	4	4	27	42	12	1

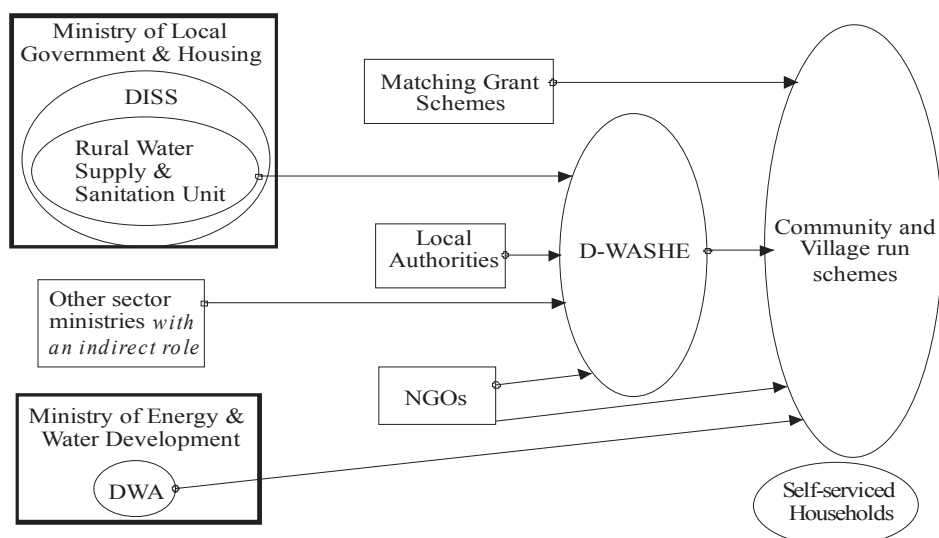


Fig. 1 Sub-sector institutions in rural water supply and sanitation (modified from GRZ, 2004).

In the current institutional setting, there are no structures in the country that have been consciously set up to specifically provide water supply services to the poor. Exacerbated by the confusion brought about by policy, regulatory and a re-arrangement of the coordination institutions in the sector, this has had a saddening consequence, where the current low levels of access to water supply are not a direct reflection of water unavailability, but rather a result of low level of infrastructure and socio-economic development.

Challenges arising from the implementation strategies

For rural water supply, the government adopted in 1996 a community-based management strategy, the Water, Sanitation, Hygiene and Education (WASHE) with a view to availing rural communities with sustainable access and use of safe water supplies and sanitation facilities. The WASHE strategy was targeted to be run at Local Authority level by a District-WASHE (D-WASHE) committee comprising different stakeholders drawn from the local district council, district level staff of line ministries – health, water, education, community development, and agriculture – NGOs, donors active in the sector, and at least three women representatives. The hallmark of the WASHE concept was community management, whose principles entailed communities being accountable, responsible, and having control and authority within their area. It was considered that this approach would promote full and continuous involvement of beneficiaries from inception to completion of water supply (and sanitation) projects and enhance the creation of a sense of ownership amongst the beneficiaries. It was hoped that this approach would result in more sustainable projects than had hitherto been the case, and would greatly increase the likelihood of projects continuing even after withdrawal of support from central government.

However, a study by Goldman *et al.* (1999) reveals that the interactions of government with people both at political and technical levels fostered high levels of dependency. The system did not promote participatory planning approaches that would link people with local government. In other words, the system was described as having been significantly deficient in democratic principles, particularly because of weak village–district linkages. As such, there is hitherto no evidence at most village levels of clearly articulated plans for water supply (and sanitation) programme implementation. Thus, instead of placing communities in the driving seat of community development, government has not shown genuine commitment to transfer resources and decision making powers to the communities. In the long-term this has created what would be termed recipient roles by communities, just as it has invoked the provider mentality by government agencies. This mentality has made D-WASHEs programmes very dependent on donor funding, with rare or no consultation between funding institutions and beneficiaries of these water projects. This has made it very difficult for projects to exist much longer after donors have left. Therefore, to be sustainable, D-WASHE programmes may need to be linked to productive water use for poverty alleviation.

SOCIALLY ACCEPTABLE PROVISION OF WATER FOR POVERTY ALLEVIATION

Zambia is endowed with more than 60% of the water in Southern Africa. As such, it is ironic that its people are denied access to safe water yet are surrounded by many rivers and lakes – a situation that may be likened to the Congo DR, which has more than 30% of Africa's water resources, but where barely 27% of its population have access to safe water. In both cases, the situation would appear to be associated with inadequate, inefficient and ineffective planning systems, and a probable weakness in governments' commitment to facilitate access to safe water to their people. In contrast, and from where lessons may need to be drawn, the semi-arid and arid North African countries of Algeria and Egypt have been able to provide water supply facilities to large segments of their populations with an excess rating of over 90% (African Water Development Report – Interim Version (http://www.uneca.org/awich/African_Water_Regional_Report/chapter5.pdf)). In order to effectively tackle rural poverty, there will be a need for policy formulation, institutional shake-ups, and a re-evaluation of budgetary allocations to water that collectively shift emphasis

from just providing rural populations with safe domestic water supplies to the provision of productive water, which must enable families to increase their generation of income.

Improved access to water for domestic use

The human right to water is indispensable to lead a life with human dignity (International Covenant on Economic, Social and Cultural Rights). In spite of such attractive pronouncements, the situation in most rural communities in Zambia is that they suffer from an appallingly low level of access to safe water. Currently, rural communities, particularly women and children in Zambia, face major challenges in accessing water in that they: (i) generally walk long distances of about 2–3 km daily to public water points to fetch water, (ii) carry heavy containers of between 20 and 25 L per trip on their heads (Fig. 2(a)), (iii) stand and wait in long queues at water points before they can get their turn to fetch water (Fig. 2(b)), and (iv) all suffer risks of contracting disease(s) once this common water source is contaminated.



Fig. 2 Major challenges of water supply in rural areas of Zambia: (a) communities walking long distances daily to public water points carrying heavy containers on their heads, and (b) a long queue at a water point.

Improved access to water supply services in Zambia and elsewhere show the great contribution that such services make to the promotion of dignity, equity, compassion and solidarity to and among households. Undoubtedly access to safe water greatly contributes to the reduction of disease-burden and poverty among the rural communities. For example, increased access to water supply services has led to improvements in people's health and well-being, and has accrued great benefits to the affected communities. Some of the benefits include: (a) less morbidity and mortality problems caused by water-related diseases; the spin-offs have been enhanced capacity to work, and provision of opportunities to develop productive and sustainable livelihoods to reduce poverty and improve quality of life; and (b) better educational and productive chances for girls, boys and women because of the time saved from fetching water (UNICEF, 1999; Nicol, 2000; Calow *et al.*, 2002; Moriarty & Butterworth, 2003; MacDonald *et al.*, 2005). With improved water supply people accrue significant health and socio-economic benefits in the form of time and energy savings, economic use of water, and increased self-reliance (van wijk-Sijbesma, 1985).

In contrast, in its pursuit of the PRSP, the Zambian government strategies have placed emphasis on building standard physical infrastructure (boreholes for rural water supply, dams and weirs for irrigation purposes). However, the landmark indicator of the PRSP period has been the reported number of physical water points constructed, but with no complementary attention paid to create social organisations to help ensure sustainable operation and management of these facilities. As such, current coverage figures are masked by wide temporal and spatial variations in access across the country because about 30–40% of the many water points that form part of these figures

are either dysfunctional or function intermittently on a daily or seasonal basis. Therefore, in real terms coverage figures may be significantly lower than the 37% quoted. A recent study conducted by Robinson (2003) indicates that current national and international trends do not allocate funds in their budget for operation and maintenance of rural water infrastructure – operations which have been assigned to communities. Sadly, the implementation of this measure comes at a time when communities’ resources have become more stretched than ever before to support such activities. Consequently, rural water supply programmes, which were intended to eradicate rural poverty, have themselves become threatened by worsening poverty.

Improved access to water for productive use

Other than for domestic activities, water meant for domestic purposes is usually also used in additional productive roles, such as gardening to grow vegetables, beer brewing, brick making and watering livestock. However, the limiting aspect to this sort of supply is that, being communal, its location does not usually favour promotion of such activities as the source is meant only for domestic purposes. Therefore, any attempts to alleviate poverty in rural areas must be supported by policies that favour a shift of emphasis from provision of safe water supplies for domestic use to that encompassing productive water. The latter will enable families to increase generation of income, thereby reducing costs of healthcare services on water-related illnesses. For instance, a community with a protected well (Fig. 3, route 1) is able to be provided with safe drinking water, with some assured level of sustainability arising from a sense of community ownership, proximity to the homesteads, and commitment to the technology.

Current arrangements, where national and international trends do not allocate funds in their budget for operation and maintenance (O & M) of rural water infrastructure, have created great challenges for communities as their resources have become more stretched than ever before to support such activities. So, without any other source of income to support O & M activities, they easily become dysfunctional and later abandoned, with communities resorting again to traditional sources. Therefore, by including productive water (Fig. 3, route 2), the community is enabled to produce high value crops for export and increase its income. Productive uses of water provide an income source that is both dependent on, and explicitly linked to water supply, thus providing both an incentive and means to pay for system maintenance (Moriarty, 2001), thereby taking care of sustainability issues of past rural water supply programmes. Provision of water must take into consideration quality, quantity to satisfy the requirements of both uses, distance to user

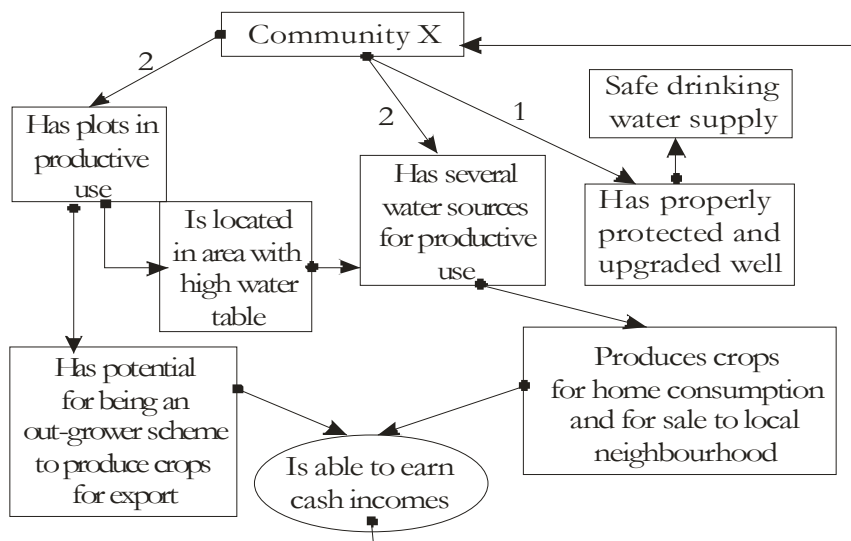


Fig. 3 Community benefits that would accrue from provision of both safe drinking (route 1) and productive water (route 2).

communities, and productivity gains that are likely to stem from time saved from collecting water. This will facilitate rural households and communities to increase their incomes and enable them to take better care of their safe water needs. In turn, this will also take care of sustainability issues of past rural water supply programmes, thereby creating an environment in which rural communities are able to enjoy a life of quality and dignity.

CONCLUDING REMARKS

In order to facilitate the alleviation of poverty in rural areas, water-supply provision programmes need:

- to shift emphasis from just rural water for sustainable supplies of household needs to productive water. This way, families will be enabled to increase generation of incomes, which would in turn provide resources for operation and maintenance for water sources. This would allay concerns of sustainability of most rural water programmes.
- to get communities to be at the forefront of their own water development activities, be able to select appropriate technology and be provided with adequate operation and maintenance skills training in order to significantly contribute to the lifespan of installed water points; and
- to receive enough support from government through commitment of enough internal resources in its budgetary allocations to implement rural water supply programmes.

REFERENCES

- African Water Development Report – Interim Version, http://www.uneca.org/awich/African_Water_Regional_Report/-chapter5.pdf, p.87.
- Calow, R., MacDonald, A., Nicol, A., Robins, N. & Kebede, S. (2002) The struggle for water: drought, water security and livelihoods. BGS Commissioned Report CR/02/226N, Keyworth, UK.
- Goldman, I., Carnegie, J., Marumo, M., Munyoro, D., Kela, N., Ntonga, S., & Mwale, E. (1999) Institutional support for sustainable rural livelihoods in Southern Africa: Results from Zimbabwe, Zambia and South Africa, <http://www.odi.org.uk/nrp/50.html>.
- GRZ/CSO (2003) Summary Report for the 2000 Census of Population and Housing. Lusaka, Zambia.
- GRZ/MLGH/DISS/RWSSU (2003) Rural Water Supply and Sanitation in Zambia: Issues and Actions for Discussion, August 2003, Lusaka, Zambia.
- GRZ/Ministry of Local Government and Housing/Department of Infrastructure and Support Services/Rural Water Supply Unit (2004) Revised Institutional Framework for Rural Water Supply and Sanitation, November 2004, Lusaka, Zambia.
- GRZ/MLGH/DISS/RWSSU/DCI/WSP (2004) Water Supply and Sanitation Sector Finance and Resource Flow Assessment. Final Report, June 2004, Lusaka, Zambia.
- GRZ/UNICEF Australia (2005) Promotion of Water, Sanitation and Hygiene Education (WASHE) in Choma, Namwala, Gwembe and Siavonga Districts. Final Draft Evaluation Report, Zambia. <http://www.zamnet.zm/newsys/news/-viewnews.cgi?category=4&id=1152268472>.
- MacDonald, A., Davies, J., Calow, R. & Chilton, J. (2005) *Developing Groundwater – A Guide for Rural Water Supply*. ITDG Publishing, Warwickshire, UK.
- Moriarty, P. (2001) WATSAN and rural livelihoods approaches. People and systems for water, sanitation and health. In: *27th WEDC Conference* (Lusaka, Zambia).
- Moriarty, P. & Butterworth, J. (2003) The productive use of domestic water supplies: how water supplies can play a wider role in livelihood improvement and poverty reduction. Thematic Overview Paper, IRC International Water and Sanitation Centre, The Netherlands.
- Nicol, A. L. (2000) Adopting a sustainable livelihoods approach to water projects: implications for policy and practice. Working Paper 133, Overseas Development Institute, London, UK.
- Robinson, P. B. (2003) Changing the water paradigm for poverty reduction, Zimbabwe. In: *Int. Symp. on Water, Poverty and Productive uses of Water at the Household Level* (21–23 January 2003, Muldersdrift, South Africa).
- UNICEF (1999) *Towards better programming: a water handbook. Water, Environment and Sanitation Technical Guidelines Series No. 2*. United Nations Children’s Fund, New York, USA.
- van Wijk-Sijbesma (1985) Participation of Women in water supply and sanitation. Technical Paper 22, IRC, The Hague, The Netherlands.
- WHO/UNICEF (2006) Joint monitoring programme for water supply and sanitation – coverage estimates – improved drinking water. WSSinfo.org, Zambia.