Rural Water and Sanitation Implementation Strategy and Investment Plan

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CHAPTER 1: BACKGROUND

The Government of Uganda has taken major steps to rationalise water resources management, development and the delivery of water and sanitation services. Policy and legal framework for managing the sector are now in place.

Uganda has one of the lowest access coverage for safe water in the world and the Government has decided to address this embarrassing situation, set targets, put in place plans, programmes and strategies to rectify this situation, through the on going Water Sector Reform studies.

The Uganda population is currently estimated at 22 million, of which only 13% live in the urban areas and the rest (87%) live in rural areas subdivided into Rural Growth Centers (2000-5000 people) and scattered homesteads (< 2000 people).

Water is a key strategic resource, vital for sustaining life, promoting development and maintaining the environment. Provision of safe water supply and sanitation facilities, their proper management and utilization, are essential for health and economic development. The burden of water collection falls mainly on women and girls. Owing to the long distances they travel to collect water, the average water use per capita is half the minimum recommended amount required for drinking, cooking and adequate hygiene. Inadequate use of services also limits the achievement of intended health benefits. Water handling and storage is often unhygienic, resulting in water from a safe source becoming contaminated by the time it is consumed.

Sanitation awareness remains low and the construction of excreta management and disposal facilities at household and institutions (schools, health centres, offices etc.), public places (markets, eating places, parks etc.) is not accorded the deserved priority, often considered an additional expense in money and time. In some cases, proper utilisation of the latrine where it exists is not universal by all members of the household due to various taboos and beliefs.

Uganda fully lies within the River Nile basin and all Uganda's surface water resources are part and parcel of the Trans-boundary water shed. Although Uganda is considered as being well endowed with water resources, the country is experiencing water management issues relating to seasonal and spatial variability of water resources, increasing water demand and

deteriorating water quality. Rapid population growth; increased agricultural, urbanization and industrial activities; poverty in the rural and periurban areas, and poor sanitation facilities and are causing serious depletion degradation of the available water resources. There are increasingly cases of water quality degradation caused by both natural and human factors. For example, the deterioration of he water quality of Lake Victoria attributed to the direct industrial and municipal waste discharges, the poor agricultural and sanitation practices in the lake basin is a cause of great concern. Uganda is interested in securing her equitable share of the water resources and ensuring good quality water is maintained for sustainable use. It is strongly recommended that support to rural water and sanitation programme should complement and strengthen the efforts in water resources. land and environment management.

Many agencies and organisations have been involved in RWSS sector development efforts, including the Line Ministries and Local Non-Governmental Governments. donors. Organizations (NGOs), community-based organizations, and communities. With support from development partners, including Sida, the GoU has been able to increase access to safe rural water supply from 18% (1990) to 47% (1999) and access to Sanitary excreta disposal (using pit latrines as index) has also increased to 49%. The programmes have contributed to institutional development and capacity building processes at community, local and central government levels in areas of ownership and maintenance of facilities, decentralized planning and implementation, use of private sector for implementation, advocacy for political commitment, resource mobilization and promotion. sanitation and improved accountability.

The Rural Water and Sanitation Implementation Strategy and Investment Plan is Governments continuing commitment to poverty eradication.

1.1 Policy, Legal and Institutional Framework

THE WATER STATUTE, 1995

The Water Statute was enacted to:

"... provide for the use, protection and management of water resources and supply; to provide for the constitution of water and sewerage authorities, and to facilitate the devolution of water

supply and sewerage undertakings".

The main objectives of the statute are:-

- (a) to promote the rational management and use of the waters of Uganda by: -
- the progressive introduction and application of appropriate standards and techniques for the investigation, use, control, protection, management and administration of water resources;
- the co-ordination of all public and private activities which may influence the quality, quantity, distribution, use or management of water resources;
- (iii) the co-ordination, allocation and delegation of responsibilities among Ministers and public authorities for the investigation, use, control, protection, management or administration of water resources;
- to promote the provision of a clean, safe and sufficient supply of water for domestic purposes to all persons;
- (c) to allow for the orderly development and use of water resources for purposes other than domestic use, such as the watering of stock, irrigation and agriculture, industrial, commercial and mining uses, energy, navigation, fishing, preservation of flora and fauna and recreation in ways which minimises harmful effects to the environment;
- (d) to control pollution and to promote the safe storage treatment, discharge and disposal of waste which may pollute water or otherwise harm the environment and human health.

The statute defines the rights in water and water administration vested in Government, the Water Policy Committee (constitution and functions), water resources planning tools (Water Action Plan), parameters affecting hydraulic works and uses of water, water and waste discharge permits.

The statute also defines the mode of water supply and sewerage emphasizing the concept of service delivery using Water and Sanitation Authorities, Water User Groups and Water User Associations.

In particular, the responsibilities of the Directorate of Water Development are: to act as Secretariat for the Water Policy Committee, Water Resources investigation, issue permits for construction and

operation of works, abstraction of water & discharge of water, maintain a register of permits, approve tariffs proposed by Water User Groups, supervise Water and Sanitation Committees and Water and Sanitation Associations.

THE LOCAL GOVERNMENTS ACT 1997

In conformity with the constitution, the Local Governments Act specify functions and services for which central government is responsible, those for district councils, those for urban councils and those to be devolved by the district council to lower government councils.

District Local Governments are now responsible for the provision and maintenance of water supplies in liaison with the Ministry responsible for water, where applicable, and Environment sanitation.

The Town/Urban Councils are now responsible for Water supplies and Sanitary services outside the jurisdiction of National Water and Sewerage Corporation.

The Directorate of water Development of the Ministry of Water, Lands and Environment is there to develop Policy, Set Standards and inspect, monitor , offer technical advice, support supervision and training of the Local Governments in under taking the Water , sector services.

These roles are clear, except:

- ? ? We need to redefine at what point is the liaison with the Ministry become applicable.
- ? ? Sustainability of facilities and services like boreholes and Gravity flow scheme requires organized and capable support from the districts which is currently very inadequate and in some cases non-existent.
- ? The investment and O&M costs for the urban water and sewerage services are high. The Management of urban water and sewerage systems requires technical know-how, proper guidance and regulation as it complicated and affects the life and health of large concentration of people. The town councils outside the NWSC areas seem not to be fully catered for to address these issues above.

The existing Policies and Laws represent a comprehensive regulatory framework for the management of the rural water and sanitation sub sector. These include the Constitution (1995), the Decentralisation (Local Governments Act 1997) and Privatisation policies, the Water Action Plan (1994) and the Water Statute (1995), National Water Policy (1999) and the National Environment Management Policy (1994) and

Statute (1995), the National Health policy (1999) and Gender Policy.

The sector policies, lagal and institutional framework/arrangements are in place to facilitate the planning, implementation and monitoring of the water sector programmes. Therefore, emphasis should be directed at strengthening the roles, strengthening capacity and co-ordination and collaboration for improved performance and results-oriented management and development of the water sector programmes at all levels for the benefit of target Ugandans.

To ensure these functions are undertaken effectively, DWD will support:

- Establishment and operation of water sector Management Information System (MIS) and operational databases (including technology options, coverage, type and functionality by sub-county/districts, specialized services).
- 2. Operational research to develop: (i) technical designs for low cost technological options, technological options for areas with low yielding underground waters, hard rock areas and other specific areas, (ii) simple and affordable water treatment systems (iii) promotion techniques that support communities' capacity to control the factors that determine their behavioral actions towards the hygienic use of water and sanitation facilities and strengthening research institutions.
- Demonstrating appropriate technological options applicable to different localities, exposed to community members and ensuring adoption. Training the private sector and artisans to participate in the construction of the facilities. Providing supplementary equipment, tools and materials to the selected sites.
- 4. Institutional and Human Resources development is needed to facilities the key player role of the ministry of Water, Lands and Environment, in particular Directorate of water Development is responsible for developing policies, guidelines, standards of service and support to the districts. This will include retooling (provision of transport, Equipment and other logistics), training and Human Resources Development.
- Specific capacity building requirements of the key stakeholders at the sub-county, District, national level, NGOs/CBOs and the private sector. This will include retooling(provision of

Transport, Equipment and other logistics). Training and Human Resources Development.

- Development and enforcement of policies laws, regulations, guidelines and operation manuals and disseminated for implementation to be used by the Local Governments and other service providers.
- 7. Development, production and distribution of water and sanitation promotion materials (including documentaries, radio and TV messages, talks and shows) tailored for the different target groups including primary schools and Rural Growth Centers. This will include the review of all existing education information and communication materials for suitability and appropriateness.
- 8. Monitor, Quality Assurance and regulation of Water Sector Service providers to ensure adherence to a national Standard and performance contracts.
- Technical advice and backup support in the design, construction, operation and maintenance of the water and sanitation facilities, in particular the piped water systems for the Rural Growth Centers, including the operations of Areas Support Units(ASU) and consultancy services.
- 10. Support to the training of Water Sector professionals, specialized, post-basic and technical training, refresher courses, seminars, workshops and exposure trips.

1.2 Rural Water and Sanitation Situation

CHAPTER 2: SECTOR STRATEGY

The Rural Water and Sanitation reform study has just been completed with the following major outcomes:

- a) The rural water and sanitation strategy for the sub-sector, which ensures that policies, legislation and institutional roles are incorporated in a holistic manner;
- b) Investment and development plans for rural water supply and sanitation systems to

- increase coverage of safe water supply and sanitation facilities to 95-100%.
- c) The management/institutional framework for sustainable development, involving all partners/stakeholders including the private sector in implementation of sub sector activities.

2.1 Rural Water and Sanitation Strategy

The Strategy relates to provision and management of water and sanitation services to the rural communities and rural growth centers with populations less than 5,000. The key strategy concepts are:

- i. A demand responsive approach- A full approach demand responsive will introduced in all programmes so that all support is determined by demand. The users, after receiving appropriate information/advice, will decide on what type of facilities they want, pay their share of the construction costs, and manage the operation and maintenance of the facilities. The local governments (districts and Sub-counties) will be responsible for influencing and regulating demand by (a) promoting appropriate demand and (b) supporting poor communities.
 - ii. A decentralized Approach, with funds channeled directly to districts as conditional grants for implementation, and central ministries responsible for sector coordination, setting standards, preparing guidelines, monitoring, sector reporting, Sector-relevant research and development. Guidelines for planning and operation of Conditional Grants will be issued and updated as required.
 - iii.An overall Sector-Wide Approach to Planning (SWAP) "The mechanism for Government/donor collaboration to achieve improvement in sector performance, increased resource flows, more effective use of resources and leading to positive outcomes for the poor in society will be provided for the Sector Development, other than through projects.
 - iv. Integrated approach and Integrated management of water resources, liquid and solid wastes, safe-guarding of health and protection of the environment. A "Package" approach for rural water supply that not only includes construction and installation, but also all software aspects associated with the water supply provision namely mobilization,

- community-based planning and monitoring, hygiene education (including maintaining a safe water chain and promotion of household sanitation), gender awareness- creation, capacity building at user level required for continued use and sustainable operation.
- v. **Financial viability** of public utilities and sound financial practices, user contributions for capital costs, plus full responsibility for operation and maintenance.
- vi. Co-ordination and collaboration of the major actors (including the national institutions, local governments, donors, NGOs, and communities) to agree and recognize a common approach, adoption of innovations and best practices.
- vii. Institutional reform: strengthening of local institutions and good management involvement facilities. full of users. community management of services, sense of ownership, participation of women at all levels and mechanisms to develop local public and private capacities for promoting, identifying and preparing **RWSS** programmes, construction and O&M of facilities.
- viii. Private Sector Participation: The Government commitment to the privatization process in all spheres of National development gives a conducive private sector participation atmosphere, especially in the form of consultants and contractors in the design, construction and management of facilities.

2.2 Guiding Principles

- (i) Application of a Participatory Demand Driven Approach to planning and provision of improved water and sanitation facilities.
- (ii) Promotion of user ownership and management of services backed by measures to strengthen local authorities and private institutions in implementing and sustaining water and sanitation programs.
- (iii) Management and planning of facilities at the lowest appropriate level.
- (iv) Central Government to facilitate Local Authorities, Private Sector and Communities planning, implementation and operation and maintenance of rural water and sanitation facilities.

- (v) Government to work directly at the lower level local governments to ensure delivery of minimum national sector standards to beneficiary communities in case the District cannot implement program.
- (vi) Districts and lower level local governments to include the water and sanitation plans and budgets into their rolling development plans and allocate commensurate resources.
- (vii) Promotion of the full participation of women at all levels in sector institutions and in decision making.
- (viii) Protection of the environment and safeguarding water resources and liquid and solid waste.
- (ix) the integrated management and coordination (District Technical Planning Committee and Inter Ministerial Steering Committee at National level)
- (x) Allocation of public funds for water supply development activities to give priority to those segments of the population who are presently inadequately served or not served at all, and who are willing to participate in planning, implementation and maintenance of the facilities.
- (xi) Sustainability to be a prime objective of all water and sanitation interventions: to guide regulations and policies, technology and design options and standards as well as guide implementation arrangements, capacity building strategies and thus ultimately the speed of achievement of sector targets.

2.3 Channeling of Recourses

2.4 Conditional Development Grant

- A conditional development grant for water and sanitation will have the following main features:
- a) The over-riding principle will be to ensure common implementation strategies as well as a clear overview of national sector investments since all the funds (Government, donor and NGO) for rural water and sanitation are fully reflected in the Public Investment Plan.
- b) The grant will be co-funded by Donors and Government. Ideally a pooling of resources in

the sector will be aimed at in order to ensure an overall prioritization of sector investments: among Districts as well as among various activities (sanitation versus water facilities; hard ware versus software; operation and maintenance as well as rehabilitation versus new investments). However, it is recognized that this may not be practicable since most donors prefer to operate on their own accountability procedures.

- c) Some donors have identified Districts and/or regions for program implementation. Therefore for those Districts that do not yet have donor support or where donor support is not enough to fully meet needs, the allocation of Government funds for Districts will be formula based and reflect District and lower level generated sector investment needs.
- The grant will effectively encourage good management practices among local authorities. The details of what good practices should entail will be developed in cooperation between line ministries, NGOs and local authorities. However, proper financial management, extensive use of the private sector, gender sensitivity and adherence to the principles of demand responsive planning are among the key issues. In order to encourage such good management practices the allocation of funds to Districts will be adjusted based on previous performance.
- e) The responsibilities of the various stakeholders in the management of this grant will clearly reflect the principle division of roles as outlined in the Water Policy and the Local Governments Act. However, the capacity shortcomings of local authorities is recognized, just as economies of scale will justify elements of contract management and procurement to be centrally administered.
- Funds for water and sanitation development will be allocated to Districts in quarterly transfers based on a formula that recognizes the coverage situation specific to the District. A certain percentage of funds allocated to Districts will be distributed to sub-counties capable of planning for water and sanitation activities. Communities are made aware of the criteria to be met (including co-funding) before they apply to their respective subcounties for funding. Sub-counties screen applications and make funds available from their own share of grants to minor projects (spring protection, shallow well construction, etc) that can be managed at sub-county level. The Sub-county refers applications for major projects (in particular boreholes) to the District with the indication of sub-county priorities.

The District Council makes the final decision regarding the use of resources. The District procures contractors for minor and medium size projects like minor gravity schemes, dug wells, spring protection, and school VIPs. For major borehole programs and possibly water systems for Rural Growth Centers, the District forwards the approved applications and associated funding to the DWD.

- All available development funds for the water and sanitation sector be identified and invested in the Districts on the basis of a broad national program that recognizes both the donors' individual accountability requirements as well as interests and the need to achieve national targets.
- Tendering centrally with the aim of gaining from economies of scale will continue. This is applicable in such cases as borehole drilling contracts, handpump supply and possibly implementation of Rural Growth Center water supply systems.
- 4. Taking into account the "social mission" responsibility on the part of Government to the disadvantaged, funds will be shared among Districts that fulfil the agreed minimum conditions according to their estimated need for capital investments. Within any given year Districts will in principle share the available funds according to their total relative needs as calculated.
- 5. The allocation of funds to Districts will be adjusted according to their performance the previous year. Well performing Districts will be given an additional ten percent compared to their otherwise calculated allocation. Poor performing Districts will likewise be subtracted up to ten percent.
- 6. Indicative Planning Figures will be prepared by the DWD for sanitation, health education, water construction, mobilization etc. however, detailed planning and budgets to be done by Districts. Districts should foremost be monitored on outputs rather than inputs (i.e. less interference in whether they budget for e.g. sanitation more emphasis on achievements of targets).
- A provision will be set aside for Districts to use for investment implementation costs. This will include costs for social mobilization, information, council planning, fees for technical surveys, appraisals and designs as well as consultants supervisory costs.
- Districts will have to fulfil the following minimum conditions before funds are released:

- Districts to employ fully functional District Water Office.
- b) Districts to have 3-year development plans in place with clearly outlined water and sanitation activities and include specific project profiles. The plan has to have been approved by the District council.
- Districts to have fulfilled Local Government Financial Regulations regarding general financial accountability; i.e. operational DTB, timely completion of final accounts, monthly returns, audits etc.
- d) Improved performance in sector service delivery, against identified performance indicators. The performance indicators include:
 - ? ? Timely completion of projects,
 - ? ? Monitoring system in place,
 - ? ? Evidence of capacity building of lower councils and communities,
 - ? ? Increased acceptable water coverage,
 - ? ? Sanitation and health improvements,
 - ? ? Use of private sector
- e) Conditions for District co-funding will eventually be developed in consultation with DWD and Districts. Initially there will be no precondition as this would stifle the good intentions of newly created Districts trying to cope with the start-up challenges and thus retard the achievement of the national sector targets.

2.5 Roles and Responsibilities

2.5.1 National Level

The Ministry of Water, Lands and Environment, through the Directorate of Water Development (DWD) will play a lead and supporting roles in the implementation of the rural water and sanitation program by the local governments.

These roles can be broadly grouped as:

- ?? Central level strategic planning, coordination, quality assurance and technical assistance systems, including collaboration efforts with donors/NGOs and other players (lines ministries and private sector).
- ?? In addition the Center has responsibilities as spelled out in the Local Government Act (1997) – Articles 97 and 98, where the line ministries shall inspect, monitor and shall where necessary, offer technical advice,

support and training to ensure the implementation of national policies and adherence to performance standard by the Local Governments,

Therefore, the responsibilities at National level can be stated as:

- The primary role of the MWLE/DWD will be more of providing policy framework for the investment in the sector. Local Governments and other developers (NGOs, private sector) will follow this framework when investing in the sector.
- Actual planning for investment in the sector by the DWD will be limited to those areas which are national in nature.
- In the event Local Governments have inadequate capability and capacity in the sector, it may be necessary for the DWD to remain actively involved in planning for service delivery in order for the national sector targets to be achieved.
- 4. For the administration of the conditional development grant for water and sanitation, the responsibilities of the MWLE/DWD will be:
- a) In collaboration with local authorities establish or agree on set criteria for minimum conditions to be met before local authorities are granted funds,
- b) In collaboration with local authorities establish or agree on set criteria for how the performance of local authorities will be measured.
- c) Provide guidelines to local authorities on the use of the development grant. This includes procedures for participatory, transparent and technical competent planning of investments, balancing of sanitation, health education and water construction activities, procedures for financial arrangements including cost sharing principles and accountability, procedures for operation and maintenance,
- d) In collaboration with local consultants undertake an annual assessment of local authorities to assess whether they can meet minimum conditions for receiving water and sanitation development grants, and advise Ministry of Finance, Planning and Economic Development on grant allocations accordingly.
- e) Ensure that local authorities are offered assistance for capacity building including assistance to the local private contractors, local NGOs, communities, the District Local Government Tender Boards, the technical

- staff of the departments of Water and Health as well as the local councilors.
- f) In collaboration with local consultants undertake annual assessments of Districts' performance and recommend for adjusted grant allocation accordingly.
- 5. DWD will provide the needed technical assistance not affordable at the District level. In particular for borehole drilling the DWD will provide a centrally managed annual program for cost-effective procurement and supervision. The management of the program may be contracted out and include responsibilities for preparation of tender documents, tendering, technical evaluations, and management of supervisory consultancy services.

2.5.2 District Level

The District Local Governments are the overall planning authorities for the Districts and have the general responsibility for the provision of services in the water and sanitation sector. As such the District responsibilities include:

- Prepare workplans and Budget for the water and sanitation sector that integrate lower councils plans and co-ordinate health education, sanitation, water construction and operation and maintenance activities;
- Establish Management Information system and ensure lower councils and communities are adequately informed on planning and management procedures for water and sanitation under a demand driven approach;
- Promote health education and sanitation campaigns;
- Ensure training and other capacity building measures are in place for lower councils, private sector and communities;
- 5. Procure private sector services for the construction of water and sanitation facilities from local and national contractors, through the District Tender Board (DTB). The borehole drilling and piped water supply systems for Rural Growth Centers could be done with support or initially be centrally managed.
- Carryout technical supervision, physical and financial accountability and backup technical support for construction, operation and maintenance beyond the capacity of the communities.

- 7. The Districts shall institute a District Water Office (DWO) based in the Directorate of Works and Engineering as a section head under the District Engineer. The functions of the DWO would be as follows:
 - a) Planning and Budgeting,
 - b) Monitoring and supervision,
 - c) Accountability, and
 - d) Co-ordination with the Health and Community Departments.
- The technical responsibilities relating to the water sector should thus be assumed by the relevant sections in the engineering directorate such as Buildings and Mechanical for platform construction/repair and mechanical repairs respectively.
- Sanitation and water quality standards assurance are to be assigned to the Health department. However, the DWO should have the responsibility of receiving and transferring component funds for the sanitation subsector.

2.5.3 Sub-county Level

Sub-counties are required to meet the minimum conditions described above for Districts in order to qualify for development grants for the water and sanitation sector. Initial years of direct funding may well be limited to health education and sanitation activities.

As Water User Groups (WUG) lack legal recognition formal ownership of water and sanitation facilities will vest with the Sub-county local government on behalf of the WUG.

Sub-counties will have responsibility to:

- 1. Plan and budget for the provision of rural water and sanitation within the sub-county.
- Enact and enforce bylaws for water and sanitation
- Inform communities on planning and implementation arrangements for water and sanitation activities;
- 4. Carry out health education and sanitation campaigns through the Health Assistant;
- Ensure the availability of private handpump mechanics.
- 6. Assist Water User Groups with proper financial management (possibly through the

- operation of a joint bank account and or assistance from Sub-county Accountant),
- Monitor water and sanitation facilities in the sub-county and ensure the local supervision of construction works; payments and accountability.
- Undertake local procurement of minor construction works(below tender threshold);

2.5.4 Parish and Village Level

In the long term Parishes and Villages will be more directly involved in the planning of the use of a conditional development grant for the water and sanitation sector. This will entail the use of indicative planning figures for funding to be availed for each Parish by the Sub-county. They will have responsibility to:

- Inform communities on planning and implementation arrangements for water and sanitation activities;
- Facilitate the establishment of Water User Groups;
- Assist Water User Groups with communication to Sub-county Local Government,
- 4. Monitor water and sanitation facilities in the parish/village;
- Enforce local bylaws on water and sanitation; and
- Assist with the monitoring of construction works.

2.5.5 Community/Water User Groups and Associations

Community members may form a Water User Group (WUG) to collectively plan and manage a water (point source) facility. Under a demand driven approach to planning for water facilities the following steps will apply:

- The communities through Parish and Village Councils will be informed about and mobilized to buy into the procedures to follow in order to apply for support to a water project,
- Households will form a Water User Group and apply through Village and Parish Councils to Sub-county Local Government for funding – commitment will at a later stage be indicated by partial upfront payment of user contributions:
- The Sub-county will consider funding from own sources/own share of conditional grant or recommend for District funding.
- If a project is approved for funding, a contract will be made with the Water User Group as a client. Private consultant, District or sub-

county staff may undertake all or part of technical supervision. However, work completion and other crucial stages of contractors' certification will need WUG endorsement.

- 5. WUG will manage and operate the facility.
- WUG will request and meet the cost of technical assistance for repairs mainly from Sub-county based private contractors (handpump mechanics etc),
- In rare cases of repairs beyond the technical capacity of handpump mechanics WUGs will request assistance from District based technicians – private or local government employed.
- WUG will apply through Sub-county to District for support to rehabilitate a water source whose cost of rehabilitation is beyond their capacity.

2.5.6 Private Sector

The involvement of the Private Sector in the development of the rural water and sanitation sector is considered paramount to success. The Private Sector is envisaged to provide consultative, management, equipment supply, construction and supervisory services to the Sector at all levels, National and sub National. The involvement of the Private Sector will be enhanced through Capacity Building initiatives promoted at both National and sub National levels particularly in the areas of procurement procedures. contract administration management.

2.6 Modalities for Capacity Building and Improved Performance

the capacity and performance shortcomings can be ascribed to the newness of the fundamental institutional changes that have taken place: privatization and decentralization in particular. Many of the ongoing support activities to the stakeholders in the sector should contribute tο improved implementation performance. However, additional measures may contribute to further improvements. In particular it is intended to pursue the following strategies.

- Central Government (MWLE) should pay particular attention to the monitoring of the performance of the stakeholders, especially District local governments. Clear measures and procedures should be developed for this purpose.
- Districts that perform well should be rewarded: the allocation of conditional grants for water and sanitation development should be adjusted based on assessments of

- previous performance. This may lead to some inequalities among Districts. However, in a medium term perspective (next five years) this cannot be avoided and is preferred to slow implementation rate and the existing inequalities among Districts based on donor choice.
- Capacity building measures should be targeted towards performance gaps and be guided by local governments rather than purely supply driven by specific donor programs.
- 4. Borehole drilling should be managed by a central agency. A private consultancy company can be contracted by MWEL to procure and supervise the drilling of boreholes. Planning and financing of activities will however be through the Districts conditional development grant.
- 5. Support for capacity building should focus on the entire institutional set up rather than on human resource development alone. This is borne out by findings of a study by RUWASA on their organisation and work methods. On this basis it is recommended that the office of DWO is facilitated through a portion of the allowance for District Monitoring and Accountability Costs of 5% of the conditional grant from the Center. The principles are outlined in the box below.

2.7 Modalities to Ensure Accountability and Donor Specific Requirements

Various donors have different accountability requirements. It would therefore be unrealistic to expect all donors from the beginning to be willing to pool funds into a common basket for a general conditional development grant. However certain measures can be established to ensure accountability in accordance with donor requirements.

- Support to District finance departments and audit departments to ensure proper internal financial management and internal audits;
- 2. Support to the Auditor General to ensure timely and proper audit of all District accounts; the Auditor General can contract private companies to act on his behalf;
- 3. Reserve particular Districts for support from particular donors while still maintaining the national mechanisms for planning, transfers etc of the conditional development grant. This would allow the particular donor to "flag" its support as well as provide options for relevant technical assistance directly from the particular donor to particular Districts. This

- would also allow the donors to follow up accountability both physical and financial at a closer range.
- 4. Reserve particular areas of national support for a particular donor: e.g. training of Tender Boards in contract management across the country, development of national planning guidelines and standards, and the development and institutionalization of a national monitoring and evaluation system. This would in a similar way as described above allow the donor to "flag" its support and provide clear accountability.

CHAPTER 3: INVESTMENT PLAN

3.1 Rural Water Supply Investments

3.1.1 Planning Criteria

Parameter

Basic technical criteria have been established for the planning of rural water supply schemes. The following table provides a summary of the criteria which should be considered when making projections on a system specific basis.

Table 1: Planning Criteria

Design Criteria

Parameter	Design Criteria
Residential water demand	20 liters
per person per day	
Institutional water demands	
- Day school/ student/ day	5 liters
- Residential school/	25 liters
student/ day	
 Hospital/ bed/ day 	100 liters
 Health center per day 	100 liters
- Government office/	10 liters
employee/ day	
- Hotel/ bed/ day	100 liters
- Camps/ person/ day	80 liters
Livestock watering (where	
served by system supplying	
human needs also)	
 Per head of cattle/day 	40 liters
 Per goat or sheep/day 	5 liters
- Per pig	10 liters
- Per donkey/day	20 liters
- Per 100 chickens/day	25 liters
Max number of people per	
handpump (borehole or	300
well)	
Volume of water per	7.5
borehole per day, cu.m	
Max number of people per	150
protected spring	
Volume of water per	5
protected spring per day,	
cu.m.	
Maximum number of people	500
per standpipe/tap at a kiosk	
Volume of water per	10
standpipe/tap per day,	
cu.m.	
Maximum walking distance	1.5 km
to water supply point	
Maximum walking distance	
to a spring or	0.5 km
standpipe/kiosk	
Minimum distance between	300 m
boreholes	

Parameter	Design Criteria
Minimum distance between water source and source of contamination	30 m

In addition to the above criteria, an allowance of 20 - 25% should be allowed for spillage and unaccounted for water loss.

3.1.2 Water Quality Standards

The following water quality standards shall be adhered to in developing an acceptable water source.

Table 2: Water Quality Standards

Parameter	Acceptable Standard
Min. /Max. pH	6.5 – 8.5
Total dissolved solids	<1000 mg/l
Total hardness	500 mg/l
Chlorides	250 mg/l
Sulphate	200 mg/l
Fluoride	1.5 mg/l
Iron	0.3 – 3.5 mg/l
Manganese	0.1 - 0.5 mg/l
Arsenic	0.01 mg/l
Cadmium	0.01 mg/l
Cyanide	0.01 mg/l
Mercury	0.001 mg/l
Lead	0.01 mg/l
Nitrate	45 mg/l
Faecal Coliforms	0/100 ml

3.1.3 Water Supply Technology Options

1. Boreholes

Drilled boreholes are and will continue to be the main option for rural water supply, particularly over the long term and will substitute for the shortfall in cheaper supply options. The main aquifer in Uganda is within crystalline basement rocks and regolithic overburden but variations in the factors affecting aguifer occurrence - bedrock lithology, mineralogy and structure, geomorphology, relief and rainfall are reflected in aguifer occurrence. In the past these variations caused high rates of unsuccessful or inadequate boreholes. However, recent hydrogeological and geophysical techniques utilising aerial photography, topographic map interpretation, side looking airborne radar (SLAR) and satelite imagery as well as ground surveys using electromagnetic, gravity and resistivity VES equipment has greatly reduced the number of failures and

success rates are now in the 70 to 90% range in most areas.

Acceptable yield from boreholes should be in the order of 900 liters per hour, to cater for the estimated 300 people per installation. This also corresponds to a sustained discharge rate of a deep borehole hand pump such as the U2, where the pumping level is less than 50 meters. Improved drilling supervision to ensure adequate borehole development is improving on the sustained yields, and this practice should continue.

2. Protected Springs

Protected springs are favored because they offer the lowest cost of approximately per capita, serving 150 individuals. Because of their cheap cost, several thousand springs have been protected and put into use through the 1990's, to the extent where this resource is now almost fully utilized in the areas where they are prevalent and accessible. Where they still exist, they should be considered as priority.

3. Shallow Wells

Shallow or dug wells offer an economical and generally reliable source for water supply. Current practice is to use pre-cast concrete rings, a caisson method of construction and 23 meters penetration below the water table with the bottom two rings perforated. Depths up to 10 meters are common. Similar siting techniques as for boreholes are recommended.

4. Gravity Flow Supply

Gravity flow systems are relatively expensive to construct, however, they are also relatively cheap to maintain and for this reason and in areas where the population is relatively dense, GFS can provide an acceptable water supply.

5. Valley Dams

In areas where it is known that boreholes and shallow wells are scarce, valley dams can be considered to provide an acceptable domestic water source provided water is abstracted via a shallow well with hand pump constructed adjacent to the dam. Connection to the dam through an infiltration gallery may be required. For estimating purposes it is assumed a valley dam will supply sufficient water for 600 people, and require that two shallow wells be constructed adjacent to the dam. The cost for the valley dam with shallow wells represents the most expensive water supply option per person and for this reason should only be considered where there are no other viable water options.

6. Other Water Supply Sources

Other water supply sources that are in many cases acceptable from a quality basis include rainwater harvesting systems (which are usually limited to individual households). The yield from these sources is expected to be relatively small and it is estimated they could serve a maximum of 300 people. Rainwater harvesting systems should only be considered where there are no other viable water options.

7. Rural Growth Centers

Rural growth centers have been defined as those communities where the population is between 2000 and 5000. The number of growth centers are projected to increase to approximately 670 by 2015. The reasoning behind this division is that for communities of over 2000 population it may be prudent and more economical in the long run to consider a limited mechanized system for water supply. For communities less than 2000 it is likely they will be serviced with point water sources. A typical mechanized system might consist of; a borehole (s) with motorized pumps as the supply; reticulation piping of various sizes; storage reservoir (s) and standpipes for distribution.

3.1.4 Capital and Maintenance Costs

The following table presents the estimated capital and annual maintenance costs associated with the various water supply technologies.

Table 3: Unit Capital and Maintenance Costs

Type of Water Supply	Annual M'tce, \$	Estimated Capital Cost ¹ , \$
Boreholes c/w Hand Pump	\$100	\$9,133
Protected Spring	\$20	\$2,080
Shallow Well c/w Hand Pump	\$50	\$3,990
Gravity Flow System, per tap	\$50	\$7,636
Mechanized System, Rural Growth Centers	\$2,100	\$248,500
Valley Dams	\$50	\$66,400
Other Acceptable Water Supplies ²	\$20	\$10,460

The above unit cost rates are used to project the investment requirements for each district

¹ Includes a factor of 8% to cater for social mobilisation, design, supervision

² Other acceptable water supplies include rainwater harvesting systems.

according to the estimated water resources and technology mix required to reach 95% rural population coverage by the year 2015. The following table presents the total investment (to 2015) per district for rehabilitation of existing schemes, new point source development (boreholes, springs and shallow wells), mechanized systems for rural growth centers, gravity flow schemes, valley tanks/dams, and other sources. Also presented are allowances for District monitoring and accounting, contributions from users and sub National governments.

 Table 4:
 Summary of Rural Water Supply Investments to 2015

District	Rehab.	Point	Rural	Gravity	Valley	Other	District	User	District/ Sub-	Total
		Sources	Growth	Flow	Tanks/	Sources	Monitoring &	Contributio	county	Investment
			Centers	Schemes	Dams	(rainwater	Accounting	n	Contributions	
)				
Apac	880,732	10,425,734	6,448,405	-	ı	689,352	553,327	268,157	968,322	18,997,549
Arua	422,465	16,829,613	9,672,607	245,842	-	-	815,116	407,330	1,426,453	27,985,642
Hoima	876,360	4,489,433	3,224,202	184,916	-	-	263,247	119,361	460,683	9,038,159
Kamuli	1,222,282	18,053,946	6,770,825	-	923,286	-	809,110	395,205	1,415,943	27,779,449
Kotido	660,916	3,253,809	5,158,724	82,123	ı	-	274,667	145,792	480,667	9,430,238
Masaka	282,271	22,318,011	3,224,202	-	-	1,343,450	815,038	357,678	1,426,317	27,982,972
Mbale	361,802	19,481,165	8,705,346	911,025	ı	-	883,780	387,057	1,546,615	30,343,119
Mukono	57,481	21,245,711	9,350,187	213,195	ı	1,661,285	975,836	456,390	1,707,713	33,503,695
Ntungamo	755,235	11,155,023	3,224,202	85,808	ı	2,255,018	524,259	240,985	917,453	17,999,545
Rukungiri	547,160	4,790,058	2,901,782	3,533,500	ı	912,882	380,561	137,322	665,983	13,065,943
Bundibugyo	25,115	2,846,208	1,934,521	202,038	1	-	150,236	65,772	262,914	5,158,119
Bushenyi	414,085	19,304,466	8,705,346	511,968	ı	ı	868,076	391,354	1,519,133	29,803,941
Gulu	325,785	9,340,175	5,803,564	1	-	-	464,086	224,817	812,150	15,933,610
Bugiri	152,900	9,335,559	2,579,362	-	-	-	362,035	169,844	633,561	12,429,856
Iganga	650,900	26,451,036	9,350,187	-	-	-	1,093,564	533,294	1,913,736	37,545,687
Jinja	183,411	9,645,682	1,612,101	-	-	-	343,236	144,960	600,663	11,784,430
Kabale	144,221	10,045,653	3,869,043	3,947,565	-	-	540,194	198,871	945,340	18,546,675
Kabarole	942,887	6,737,434	8,382,926	324,511	-	11,623,71	840,344	445,767	1,470,602	28,851,816
						4				
Kalangala	2,005	ı	1,934,521	ı	ı	ı	58,096	38,690	101,668	1,994,622
Kapchorwa	33,087	2,313,850	3,224,202	1,186,489	ı	ı	202,729	96,381	354,775	6,960,356
Kasese	167,439	3,752,311	4,191,463	538,979	-	-	259,506	125,833	454,135	8,909,698
Kibaale	144,221	2,408,683	4,191,463	-	1	-	202,331	109,015	354,079	6,946,697
Kiboga	108,825	1,520,947	1,934,521	667,074	1,751,824	721,234	201,133	105,944	351,982	6,905,558
Kisoro	13,034	5,346,977	1,934,521	91,450	1	-	221,579	85,402	387,764	7,607,562
Kitgum	653,456	16,449,553	6,448,405	-	1	-	706,542	350,339	1,236,449	24,257,956
Kumi	257,822	15,541,879	4,513,883	ı	ı	ı	609,408	293,943	1,066,463	20,922,992
Lira	384,070	11,167,746	7,415,665	84,080	-	717,834	593,082	289,288	1,037,893	20,362,477
Nakasongla	111,586	6,251,931	1,289,681	-	1,764,242	-	282,523	145,648	494,416	9,699,964
Luwero	681,314	14,587,497	4,513,883	-	-	-	593,481	283,114	1,038,591	20,376,175
Sembabule	97,424	5,726,051	1,289,681	-	5,235,981	722,073	392,136	222,402	686,238	13,463,345
Masindi	339,443	9,057,647	3,869,043	393,055	-	239,918	416,973	194,263	729,703	14,316,079
Mbarara	690,809	16,459,332	9,995,027	1,620,403	3,546,114	-	969,351	476,818	1,696,363	33,281,036
Moroto	644,689	8,396,730	5,803,564	264,429	-	-	453,282	231,567	793,244	15,562,695
Moyo	32,084	1,892,460	2,256,942	296,476	-	-	134,339	68,739	235,093	4,612,300
Adjumani	159,152	2,050,741	1,289,681	94,874	-	-	107,833	52,688	188,709	3,702,281

District	Rehab.	Point Sources	Rural Growth Centers	Gravity Flow Schemes	Valley Tanks/ Dams	Other Sources (rainwater)	District Monitoring & Accounting	User Contributio n	District/ Sub- county Contributions	Total Investment
Mpigi	305,082	24,141,358	8,060,506	89,559	1,755,927	2,708,109	1,111,816	508,116	1,945,678	38,172,357
Mubende	212,202	9,645,219	5,803,564	177,212	1,755,387	-	527,808	256,226	923,663	18,121,392
Nebbi	580,825	8,342,984	4,191,463	417,366	•	-	405,979	190,645	710,463	13,938,617
Pallisa	131,639	16,450,931	5,803,564	1	ı	-	671,584	321,559	1,175,272	23,057,718
Rakai	355,421	8,991,075	5,803,564	-	3,469,627	1,367,502	599,616	325,368	1,049,327	20,586,805
Katakwi	245,112	12,315,856	4,191,463	-	ı	-	502,573	246,109	879,503	17,255,004
Soroti	569,019	17,571,811	6,770,825	ı	ı	-	747,350	363,793	1,307,862	25,659,005
Busia	94,207	4,696,741	2,579,362	-	-	-	221,109	109,028	386,941	7,591,420
Tororo	628,647	17,117,561	5,481,144	-	-	-	696,821	340,616	1,219,436	23,924,172
National Prog	ram Support ((DWD)								123,822,205
Total Uganda	16,548,62 1	467,946,58 7	215,699,136	16,163,937	20,202,38 9	24,962,37 0	22,845,691	10,921,490	39,218,437	908,190,936

3.2 Rural Sanitation Investments

3.2.1 Capital Investments

The capital investment program is based on the following main assumptions:

- The pit latrine construction costs for households are to be met by the individual households and are not part of the investment program. The program will only invest in the software components as a strategy for improving human excreta disposal at households:
- Rural Water Sector component investment estimates will be limited to support of communal sanitation facilities in Rural Growth Centers and institutions (primary schools and health units);
- No direct investment will be made in physical facilities around economic projects (like markets) but emphasis will be put on hygiene and health promotion, encouraging private sector participation and enforcement of laws;
- 4. For every Rural Growth Center four communal type VIP multiple stance latrine facilities are estimated. This is on the assumption that they will be located at convenient un-served public places. An additional 10% of the cost of works of facilities in RGCs is provided to cater for solid waste management facilities and start off equipment. It is assumed that the private sector and NGOs will provide investment in RGCs and institutions to fill the funding gaps;
- 5. One 5 stance VIP latrine for approximately 2850 primary schools. Uganda currently has approximately 9,500 primary schools. It is estimated that approximately 30% of these schools currently have no acceptable sanitation facilities. The proposed program will provide multiple stance VIP latrines for these existing schools. It is understood the UPE program will provide for the new schools:
- 6. The users will meet operation and maintenance costs for the facilities.
- 7. The program will not support the replacement of facilities but a provision is made to pilot options for re-using the facilities.

3.2.2 Program Investments

The sanitation, health and hygiene programs will be implemented at National and Local Government council levels.

Programs at National Level

The National program will involve the:

- Review of all existing education information and communication materials for suitability and appropriateness. Development, production and distribution of sanitation promotion materials (including documentaries, radio and TV messages, talks and shows) tailored for the different target groups including primary schools and Rural Growth centers.
- Formulation and enforcement of policies, laws (Health Act, Sanitation Policy), regulations and guidelines. The sanitation laws will be continually upgraded to suit the changing circumstances and widely publicized and disseminated for implementation. They will provide a framework for making bye laws at Local Government Level.
- Design, production and dissemination of appropriate and low cost technological options for difficult situations (rocky, sandy, high water table), those for children and people with disabilities.
- Supporting the training of Environmental Health staff (and other sanitation practitioners) through refresher courses, seminars and workshops, exposure trips, specialized, post-basic and technical training.
- Establishment of a sanitation data bank (including technology options, coverage by type and LC, specialized services) and strengthening research institutions.

Programs at Local Governments Level

The program at Local Government level will involve two components: training, data collection and monitoring and evaluation as one component and demonstration capital investment as the other.

?? Training, data collection and monitoring programs:

These will include:

- A provision of 40% of sanitation capital investment is included to cater for hygiene education in schools, public places, institutions and households. It will include review, development, production and distribution of electronic and press media messages and other promotional materials and activities.
- A provision of 10% of the sanitation capital investment is included to cater for sanitation and hygiene specific capacity building requirements of the key stakeholders at the village/parish, sub-county, District, national level, NGOs/CBOs and the private sector. It

will also cater for supporting data collection, analysis, use and dissemination and support to the formulation and enforcement of policies, laws, regulations and guidelines. The provision is on the understanding that there are a number of ongoing programs involved in general capacity building and institutional strengthening.

- An allowance of 10% of the sanitation capital investment is included for investment servicing to cater for administrative, design and supervision costs.
- ?? Demonstration capital investment programs:

This will include:

- Demonstrating appropriate technological options applicable to different localities, (rocky, sandy, high water table), those for children and people with disabilities, exposing community members and ensuring adoption.
- Training the private sector and artisans to participate in the construction of sanitation facilities.
- 3. Providing supplementary sanitation equipment, tools, transport and materials to primary schools, communities in difficult circumstances and sanitation practitioners.

An allowance of 10% of the sanitation capital investment is included for demonstration capital investment programs.

The following table presents the capital and program investments to the year 2015 per District expected to be made in the rural sanitation sector.

Table 5: Sanitation Investments

District	Capital Investme	Program Investme	Total Sanitatio
	nt \$	nt \$	n Investme nt \$
Apac	470,229	329,160	799,389
Arua	694,616	486,231	1,180,848
Hoima	230,880	161,616	392,497
Kamuli	512,253	358,577	870,830
Kotido	297,201	208,041	505,242
Masaka	437,865	306,505	744,370
Mbale	683,591	478,514	1,162,105
Mukono	739,994	517,995	1,257,989
Ntungamo	264,932		

District	Capital Investme nt \$	Program Investme nt \$	Total Sanitatio n Investme
			nt \$
		185,452	450,384
Rukungiri	325,107	227,575	552,682
Bundibugy o	139,739	97,817	237,557
Bushenyi	662,997	464,098	1,127,095
Gulu	390,085	273,059	663,144
Bugiri	217,934	152,554	370,488
Iganga	703,475	492,433	1,195,908
Jinja	184,972	129,480	314,452
Kabale	376,341	263,439	639,780
Kabarole	677,445	474,212	1,151,657
Kalangala	84,682	59,278	143,960
Kapchorw a	187,157	131,010	318,166
Kasese	327,894	229,526	557,420
Kibaale	268,553	187,987	456,540
Kiboga	145,055	101,539	246,594
Kisoro	160,894	112,626	273,520
Kitgum	438,596	307,017	745,612
Kumi	309,971	216,980	526,951
Lira	529,881	370,917	900,798
Naksongol a	105,237	73,666	178,903
Luwero	355,428	248,799	604,227
Sembabul e	120,604	84,422	205,026
Masindi	287,671	201,370	489,041
Mbarara	768,091	537,664	1,305,755
Moroto	332,935	233,054	565,989
Moyo	128,373	89,861	218,234
Adjumani	91,463	64,024	155,487
Mpigi	734,638	514,246	1,248,884
Mubende	446,401		

District	Capital Investme nt \$	Program Investme nt \$	Total Sanitatio n Investme
			nt \$
		312,481	758,882
Nebbi	327,956	229,569	557,525
Pallisa	424,576	297,203	721,779
Rakai	404,884	283,419	688,303
Katakwi	268,253	187,777	456,029
Soroti	441,195	308,836	750,031
Busia	165,661	115,963	281,624
Tororo	411,227	287,859	699,086
Total District	16,276,93 1	11,393,85 2	27,670,78 3
National	0	20,156,88	20,156,88 1
Total Program	16,276,93 1	31,550,73 3	47,827,66 4