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SUSTAINABILITY OF WATER AND SANITATION SYSTEMS

Singida integrated rural development project

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SINGIDA IS A semi-arid region located in the central part of Tanzania. It receives a mean annual rainfall of about 700mm. The population of this region is about 940,000 people. The region lacks access to potable water for the rural community which accounts for 90% of total population. It is estimated that only 40% of the rural population has access to improved water supply. In some areas women have to walk up to ten kilometres daily in search for domestic water needs. The quality of water obtained from these sources is very poor and attributes to the dominance of water borne and water related diseases. Environmental degradation is quite severe. In the more populated areas soil erosion is a common problem. Overgrazing, deforestation and poor land management practices are rampant in this region.

The Singida Integrated Rural Development Project (SIRDP) started in October 1984 in an effort to address the fundamental problems facing the rural community in Singida region. The project is being implemented by Tanganyika Christian Refugee Service (TCRS), a non governmental organization which is operated by the Lutheran World Federation - (LWF) Commission of World Service. Although the basic function of TCRS is to provide assistance to refugees who have found asylum in Tanzania, it is also involved in a number of programmes for development work as for the case of SIRDP. The project is mainly funded by Danchurch Aid through LWF. The main components of the project include water supply environmental health, agriculture, natural resources management and community development. This paper however highlights mainly the water and sanitation components of the project.

Objectives

- raising villagers awareness to enable them to participate fully in development activities and providing them with a stimulus to pursue such activities on self reliant basis.improving the quantity, accessibility and safety of village water supplies.
- arousing villagers realization of the health benefits achieved through the use of improved water supplies, latrines, proper sanitation and hygiene.
- aising community awareness on the severe consequences of environmental degradation and assisting them in reversing this trend.

Approach

In order to ensure proper implementation and sustainability, integration between project components and among government departments is emphasized. Technical staff have been seconded to the project from all involved departments. Community awareness raising and mobilization involves the community development staff working in close collaboration with the village governments and field extension staff.

The project has a Regional Steering Committee comprising of the relevant heads of departments. The committee is the coordination mechanism for the project. The districts have consultation committees which perform the same function at district level. The project is implemented in a group of villages located in the same locality or "village clusters". Village selection is based on **demand - driven** approach. Requests for water supply & sanitation assistance are channeled through respective Ward Development Committees & District Councils. Final selection however, is made during a joint meeting between the Project and District officials. Apart from facilitating easy logistics, this approach ensures higher cost effectiveness. Base line data collection is done by a social survey team before starting implementation. The beneficiaries are fully involved in all stages of project planning, implementation, operation and maintenance in order to assure a sustainable development. This conforms with the National Water Policy which emphasizes on sustainability of projects by full user involvement.

For the project to create impact on the community, full involvement in the course of implementing the project has been given a top priority.

The project gives first priority to development of shallow wells. Where shallow wells are not feasible, medium depth bore holes are drilled. In both cases hand pumps are installed. As for sanitation component, the project has opted development of improved pit latrines with unreinforced dome cover slabs for house holds and ventilated pit latrines for institutions.The main consideration in making the choice of technology is sustainability.

The project avoids the use of a wide variety of hardware in order of facilitate smooth operation and maintenance. Two types of hand pumps have been adopted in the project namely NIRA AF 85 for shallow wells and AFRIDEV for medium depth boreholes. Both of these pumps are locally manufactured and conform to VLOM.

Water component

After a village has been selected, a written **Contract Agreement** is signed between the Project and the Village

concerned after a communal meeting attended by both parties concerned. In the contract, the community is informed and has to agree that within time frame, it is supposed to provide free labour security to technicians / contractors, also contribute a specified amount of money towards construction of the wells whereas the Project will provide technical staff, equipment / tools, transport and materials.

In addition to existing **water sources** as identified through social surveys additional / new sources are identified during auger surveys for shallow wells and geophysical surveys - for medium depth boreholes - where auger surveys have failed. During auger surveying, the communities are involved in selecting places to be surveyed which will determine positions of the wells. They are also fully involved in carrying out actual survey work.

In order to develop more sense of ownership and responsibility, also future

sustainability, starting July 1994, beneficiaries have been asked to contribute a certain amount of money towards construction of wells.

During the first year (July 1994 - June 1995) it was agreed that user contribution be 20,000 / = (40 US$) per well. This contribution will be raised gradually towards full construction cost. In the following year (July 1995 - June 1996) the contribution is set at Tshs. 100,000 / = (200 US$) per well. Response from the communities has been encouraging.

All construction of shallow wells is now done by **sub contractors** who have had good working experience hitherto. A contract agreement is made between the project and sub contractor specifying contract regulations, conditions of terminating contract and implementation costs. While the sub contractor will be engaged in technical and supervisory duties the beneficiaries participation still remains the same. A project shallow wells construction incharge goes around to check on the work of sub contractor and approve every steps of construction.

Before a shallow wells project is completed, the village concerned appoints 4 people (men & women) to be **trained** as pump attendants. During pump installation a trainer from the project, trains village pump attendants on pump operation and maintenance.

The villages also appoint well care takers (mainly women) staying closest to the wells whose duty is to remind others on proper use of the pumps and keep environment clean. In most cases pump attendants and well care takers are not paid any allowances but are exempted from other communal duties.

All completed wells are officially **handed over** to the beneficiaries concerned. During handing over certificates are awarded. On these certificates the beneficiaries are reminded in writing of their responsibilities to take good care of their wells, continue to collect money to maintain village water funds, request for Water Right and to buy basic spanners for maintenance of the pumps.

All completed wells are **monitored** each month so as to keep record of general problems affecting them especially on the pumps. This helps in advising villagers on what spares should be stocked in their stores for simple maintenance. Required information is filled in special forms by village pump and supervisor goes around to collect them at the end of each month.

The supervisor also helps out where village pump attendants have failed to do a repair.

Achievements

Since this project started, 312 new shallow wells have been constructed, 130 medium depth boreholes have been drilled and 230 malfunctioning wells have been rehabilitated. Also 230 pump attendants and 1132 well care takers received training.

Problems and Solutions

A few wells dried up due to drought. This has especially affected shallow wells more than medium depth boreholes. More emphasis has been put on thorough surveys during dry season.

Sometimes poor village leadership leads to poor community participation. Where such situations cannot be rectified inspite of constant follow up, the project is forced to pull out. In all cases higher district officials are asked to assist.

Due to custom, there is still a question of men always dominating in all activities except collection of water from the wells. Sometimes separate meetings are held for women to get their opinions.

Sanitation

In order to ensure long lasting health benefits brought by improved water supply a sanitation component which deals with construction of improved latrines and hygiene education is being implemented in villages supported with water supply. The main objective is to ensure that every household in project villages is using a sanitary latrine which can last to a minimum of 5 years before it is filled up. This also includes primary schools and dispensaries within the villages. Alongside latrines construction village health workers (VHWs) are trained on basic hygiene measures. In turn these VHWs carry out health education activities to the fellow villagers through small gatherings and home visits.

Latrine Construction

Implementation of the programme starts by motivation and awareness raising seminars to ward and village leaders, extension staff, influential people and the village populace. During these meetings the role of each party involved in the programme is clearly explained. This is followed by mobilization of the needed materials for casting of slabs. Each household is also supposed to

contribute 1,000 / = Tshs. (2 US$) as part payment for the construction costs.

TCRS supplies cement, working tools and pays for sub-contractors. Each household is responsible for curing and transporting the casted slab to construction site, digging the pit & building the super structure. Primary schools are assisted with at least 8 VIP latrines. The school through parents produces burnt bricks and dig the pits whereas the school children collect sand, gravel and water. TCRS supplies cement, weldmesh, fly screen & pays for the subcontractors.

Achievements

The programme has attained some remarkable achievements one of them being reduction of diarrhoea diseases and associated deaths. A study carried out in 1987 in 9 pilot villages indicated 26.4% diarrhoea incidence among underfives and 7 years later after assisting these villages with improved water supply and sanitation the diarrhoea incidence dropped to 17%. Also diarrhoea associated deaths during the same period droped considerably.

Increased demand of latrine slabs from villages indicates the acceptability of the technology. This is mainly due to the sturdiness of the slabs and to a lesser extent on the health benefits associated with the use of the slabs.

Reports from the field show that slabs from filled up pits have been shifted to new pits. This indicates that the technology is permanent.

Problems and Solutions

Although assistance with latrine coverslabs has in some villages been up to 100% there has been a very big problem on the use of the squatting hole lids, most slabs are not regularly cleaned and lack of routine maintenance of the latrine shelters which has led to some of them collapsing. In order to curb these problems the project has plans for intensifying hygiene education activities and emphasis on regular checking of the superstructure so as to build up repairing habits.

Decrease in subsidy for slabs has resulted into decrease in the number of households acquiring the slabs. This is mainly affecting the rural poorest who are in most cases in need. This implies that when the subsidy is eventually removed very few households will be able to possess concrete slabs.

In order to solve this problem emphasis will be ensuring each house hold to use a latrine which fulfills basic health requirements.

Lack of motivation and support from village governments has resulted into many Village Health Workers (VHWs) dropping out and some of the remaining are not as active as expected. Frequent changes of leadership at village levels have also contributed to this problem. Village leaders have to be constantly made aware on the importance of the VHWs so that they can give them the necessary support.

Other project components

Apart from water supply and sanitation, the project incorporates: Natural Resources Management, Agriculture and Community Development. Afforestation and Soil Conservation promotes conservation of water sources and soil fertility. Improved methods of agriculture gives rise to higher crop yields, improved nutrition and improved income to the rural community. Community development activities include among others the promotion of income generating groups. These are provided with soft loans, the amounts of which depend on the nature of activities planned. The primary objective of these components is to create conducive environmental for promoting water supply and sanitation by building up a higher capacity for the users to contribute towards a sustainable development.

Conclusion

TCRS is now in the last year of the 3rd phase and there are already plans of extending into a 4th four years phase (1996 - 1999). This will be a phasing out phase whereby TCRS will gradually handover its activities to the local NGO yet to be identified. Privatization of activities, increased users financial contributions and women involvement and users training will be the main focus of the 4th phase.