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WATER, ENVIRONMENT AND MANAGEMENT

Sustainability of rural water supply schemes

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ABSTRACT:

This paper is based on the experiences of community water supply programme funded by UNICEF and HELVETAS over the last 20 years in Nepal. The appropriateness of community based approach for sustainability and question regarding affordability are discussed in the beginning. The need for the support programmes has been stressed. The experiences in implementation of the cwss programme in Nepal are discussed.

SUSTAINABILITY:

The sustainability of a water supply scheme is defined as " affordable, appropriate (technology) and continuous delivery of high level of water related benefits after the completion of the project."(WHO/CWS,1988)

" The development of wss facilities would be realized when they continue to function after the aid agencies depart and the communities are in control of their own affairs." (WASH,1990).

The number of rural water supply schemes in Nepal is expanding. Operation and maintenance of the schemes is lagging behind. It is now recognized as a major bottleneck for the sustainability. The long-term success of a rural water supply scheme refers to;

a. continuous functioning of physical facilities;
b. realization of health, social, economic & environmental benefits.

COMMUNITY BASED APPROACH:

The data compiled through Management Information System (MIS) revealed that out of 306 rural water supply schemes without community involvement about 282 schemes i.e. 92% required some degree of rehabilitation. A status survey on 200 completed cwss projects (Helvetas, 1989) found that 60% were functioning satisfactorily, 20% required some degree of repair and remaining 20 % required some degree of rehabilitation. Further, 78% of the completed cwss projects had VMWs and users committee functioning. This indicates the appropriateness of community based approach for sustainability in Nepal.

COST-RECOVERY:

Drinking water is the basic need of the people. Therefore, the concept of community rural water supply with women involvement and health education should not look towards the capital cost recovery. The maximum potential recovery is operation and maintenance cost and a partial capital cost (10 to 30%) by utilizing voluntary contribution.

AFFORDABILITY:

In rural water supply affordability is often over emphasized. The status survey (Helvetas, 1989) revealed that poor villages actually more often have village maintenance worker (80%) than rich villages (62%); and poor villages are as likely to pay the village maintenance worker (VMW) as rich villages. This indicates that the good maintenance is not so much a matter whether people can afford it, but rather whether they realize the importance of it and accordingly take an interest in keeping the water supply schemes in good shape.

COMPLEMENTARY INPUTS:

Improved health, time saving, energy saving and consequently increase in the economic standard, equity to women and basic need are often used forcefully in favor of rural water supply schemes. However, water supply facilities with health education and sanitation in itself do not deliver desired health, social and environmental benefits. The hygiene awareness and health education are inseparably linked with socio-cultural values and beliefs, traditional practices etc. In order to change hygiene habits and sanitation practice the community has to be supported in socio-cultural and economic activities. Therefore, the role of education by formal, nonformal and adult education, as well as income generation programmes is very important. Further, in a country like Nepal sanitation and health education are complementary inputs to all sectoral rural development programmes.

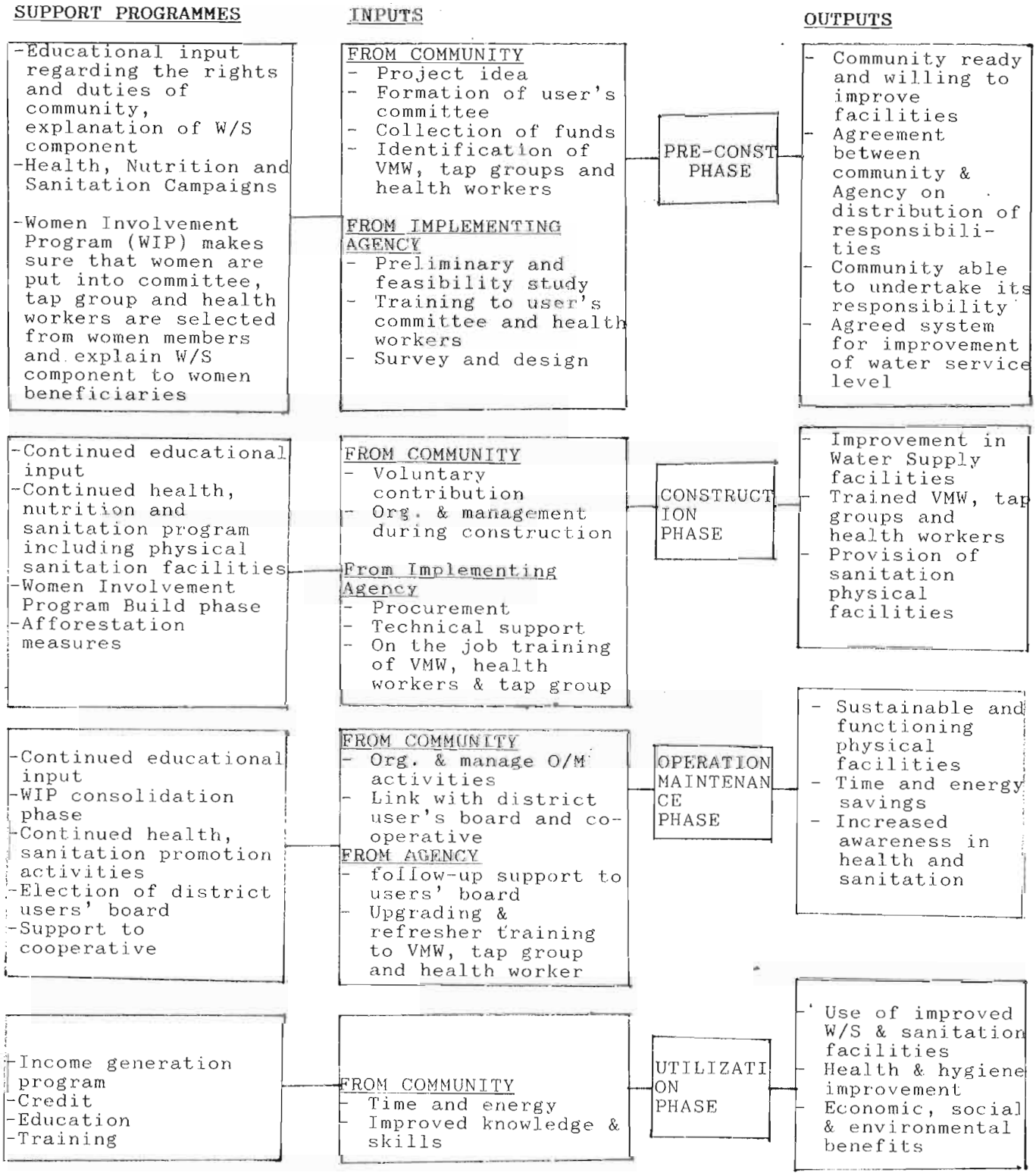
The process with inputs and outputs with support programmes in a rural water supply programme is shown in Table. 1.

IMPLEMENTATION PHASES:

For the purpose of planning, implementation & evaluation, a water supply scheme may be divided into four phases. These phases may be called:

Table-1

Improvement of Rural Drinking Water Facilities:
The process with Inputs, outputs and Support Programmes.



- pre-construction phase
- construction phase
- operation and maintenance phase
- utilization phase.

Pre-Construction Phase:

The activities which should be completed in this phase are;
- Initial request (based on demand-led approach)
- Preliminary study
- Formation of users' committee
- Selection of village health workers & village maintenance workers
- Feasibility study
- Collection of maintenance fund
- Agreement on distribution of responsibilities between implementing agency and community
- Survey and design
- Approval by beneficiaries on type of the scheme & improvement in service level.

To take full responsibilities by users' committee in all the above activities, it has to be trained in technical, administrative and financial management. In Nepal, training to users committee is not adequate. Women health workers training is difficult to organize due to absence of women assistants in the government cadre. Some programmes are dependent on expatriates (volunteers), however, it is unlikely that this approach will be sustainable. In the past, water supply technicians (WSTs) were trained and assigned them the role of an animater as well as a technician. In a traditional bound culture this has very limited success. The reason is that WSTs were not motivated in their educative role. As the WSTs are almost exclusively male, they did not have any access to the women who are the main target group. In order to involve women, the experience says that women village health workers have to be selected by users' committee and they should be trained by female assistants.(UNICEF,CWS 1991)

In this phase, the following three activities are most critical:
- A water supply scheme is sustainable only when there is initial request based on felt-need.
- Any partnership programme works best if the role of the each partner is clearly defined and understood from the outset.
- A community organization can manage construction, operation and maintenance only when if it is adequately supported by trained field workers (water supply & health).

Construction Phase

The objectives relate to the quality of construction and to the processes that should be set in motion for the next phase. The activities are;
- procurement of quality materials & fittings
- voluntary contribution in the form of labours and local materials
- technical support and continuous supervision during construction
- on the job training of VMWs and health workers.
- construction of auxiliary facilities including latrines

If these objectives can be reached in this phase, then local communities will be able to maintain with appropriate back up in the next phase.

In this phase, the most important activity is to provide continuous supervision particularly for piped water supply schemes since the catchments, collection chamber, sedimentation tank, reservoirs etc. cannot be reproduced easily. Further, it is unlikely that community projects will achieve adequate technical standard unless it receives a high level supervision on the job. The maintenance required by a system is closely related to the quality of the construction.The maintenance requirement is progressively reduced by closer attention to detail during design and by continual improvement of construction standard. (Glennie,1982)

Operation and Maintenance:

The objectives relate mainly to the continued functioning of the facilities and includes following activities;
- sustained community organization
- availability of spare parts & tools through cooperatives
- regular training
- a system of supervision and data monitoring
- establishing and regular updating of the database system.

Now, maintenance of rural water supply system is recognized as a major issue. Even though many systems are still constructed without due consideration to maintenance. Donor agencies are prepared to finance the construction of new water supply schemes. However, they are often not providing support for the maintenance (IRC, 1988). Furthermore, because of the lack of financial resources the government expects users' to take over the maintenance task, very often without higher level support.

The operation and maintenance of gravity flow water supply schemes cannot be undertaken solely by local organization. The responsibility lies on both users' committee and implementing agency. The implementing agency should establish a systematic maintenance approach in collaboration with district level political body.

Establishing database, regular monitoring of the completed schemes, and regular updating of the database identify the maintenance requirements of spare parts, fittings, materials, and training. The health workers, tap groups, VMWs all need refresher and upgrading training. Village workers need to be replaced and new workers have to be trained. Trainers and supervisors also need continued training both in the role of supervisors and trainers.

In order to make available spare parts and fittings a District Users committee (if formed) can organize and run cooperatives . In addition to this, this board may act as a pressure group to donor and implementing agency. It may also issue directives to users'committees in organizing voluntary labour and funds for maintenance and repair.

Utilization Phase:

The objectives relate to the complementary inputs necessary after the facilities become functional and sustainable. The supports required are;
- income generation programmes
- credit
- formal or non-formal education
- training

Water supply is a high priority in rural village. It could be an entry point for rural development and it should be followed by a comprehensive integrated community development programme. In Nepal, Small Farmers Development Programme (SFDP), Production Credit for Rural Women (PCRW) etc are providing some inputs. However, they are active only in some specific areas.

CONCLUSION:

The sustainability is linked with long-term self-reliance. The self-reliance in one sector cannot be expected without a comprehensive self-reliance framework of socio-economic development in all other related sectors.

In Nepal, in order to develop sustainable community water supply programme the lack of effective decentralization policy and inadequate institutional capacity of the implementing agency are two major constraints. In the past, the decentralization policy was conceptualized as a political tool to run a centralized government. After the advent of the multiparty system, it is yet not clear whether the decentralization policy utilize the concept of local government and the real decision making power will lie on the beneficiaries. To implement community based rural water supply schemes the followings are the inherent problems in the government organization;

- difficulty in reorientation of staff (more than 5000) of a large organization developed over the years for conventional practice.
- lack of social and health workers
- low salary and too little night allowances for field workers
- no opportunity for career advancement

The background paper of the global consultation on safe water and sanitation for 2000 in New Delhi highlights the need for *"Government to concentrate less on direct intervention in providing services and more on the enabling public and private institutions to deliver the services."*

In Nepal, achievements in community based water supply schemes with women involvement and health education are possible with committed effort from all the parties concerned. However, it is worth noting that rural development programmes cannot be sustainable without full political commitment.

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