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Multiple uses of rural household water supplies for livelihood in Ethiopia

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Provision of access to safe drinking water for the rural population of Ethiopia is at lower level attributing to 60% of the current disease burden and 15% of the total deaths mainly among the large population of children under five. To overcome this problem, the government of Ethiopia has adopted universal access program (UAP) to provide access to safe water supply for 98% of the rural population by 2012. The 3 years program performance evaluation has revealed that there is a delay in implementation. Among others finance and sustainability of services are found to be the main challenges for the success of the program. Thus implementation strategy, which significantly enhances community participation in investment and operation and maintenance become a necessity for accelerated implementation of the program. Accordingly, multiple uses of rural household water supplies for livelihood are adopted as one of the strategies for accelerated implementation of the UAP.

Introduction

Ethiopia is located in Eastern Africa and has a total area of 1,104,000 km². It has a federal system of government with a structure consisting federal level ministries, 9 regional states, 2 administration areas, Woredas (local government) and Kebeles (lowest administration level). Its annual average temperature and rainfall are in the range of 5-40 °C and 100 – 2700 mm/year, respectively. The population is 74 million of which 86% is rural and 14% urban. The economy of the country is categorized as one of the lowest in the world and it is mainly based on agriculture. However for the last 5 years the economy is growing annually by 10% and more.

Ethiopia has 12 major river basins with a total of 122 billion cubic meters surface water, which is nearly 1% of the world or 3% of Africa's surface water potential. Water and watercourses cover about 120,000 km² of the country, which is around 11% of the total area. The ground water potential is estimated to be 2.6 billion cubic meters. The current per capita renewable freshwater resource of the country is estimated to be about 1900 m³/year.

The irrigation potential of the country is estimated to be 3.7 million ha of which only about 5% is under irrigation. The country's hydropower potential is estimated to be 30,000 MW of which only 2% is developed. Moreover, only 20-30% of the fishing potential of the country is utilized. The total water supply coverage of the country is 59.5% of which 54 % is rural and 88 % urban. This attributed to 60% of the current disease burden and 15% of the total deaths mainly among the large population of children under five. Thus, even though the country has enormous water resource potential it is not yet properly utilized to contribute to the well being of the people and the economy of the country.

In addition to meeting the MDGs set for water supply and sanitation, the government has started implementation of Universal Access Program (UAP) targeted to provide access to safe water for 98% of the rural population by 2012. The 3 years implementation of the program revealed that finance and sustainability of services among others are the main challenges for the success of the program. Thus implementation strategy, which significantly enhances community participation in investment, operation and maintenance of water supply facilities, become a necessity for accelerated implementation of the program.

The UAP plan and the 3 years implementation status

The Ethiopian Government has started implementation of a 7 years Universal Access Program (UAP) to provide access to safe water for 98% of the rural population by 2012. The purpose of the program is to enable the people to access 15 l/c/d water with in 1.5 km distance. It is planned to provide access to safe water for 50 million rural people in the program period.

The main implementation strategies of the program include: use of appropriate technologies at household and community levels, major community participation, cross-sector coordination, capacity building of all stakeholders, harmonization of all actors intervention, and decentralization of implementation to the lowest level with the required support from the higher levels.

The 3 years program performance review revealed that the number of people who has got access to safe water supply is only about 67% of the target for 2008. Projection of this performance trend to the end of the program period indicated that with this pace of implementation only 75% of the plan could be achieved. Thus, in order to achieve the program target in the next 4 years of the program period, doubling of effort is required. To this end, use of household level water supplies for water based livelihood activities is adopted as one of the strategies for accelerated implementation of the program.

Multiple uses of water supplies for livelihood and its status in Ethiopia

Traditionally, the water sector's aim has been to supply people with clean, reliable and safe water with the primary goal of improving health and well being of the people. However, there is potential to make better use of water in contributing to people's wider well being and livelihoods. Accordingly, the sector can more efficiently contribute in tackling rural and urban poverty and at the same time solving the problem of sustainability and cost recovery of schemes. In most countries by de facto people use water supplies for productive use such as for growing vegetables and fruits, keeping livestock, brick making, beer brewing, etc. Several countries such as Senegal, South Africa, Zimbabwe, Chile, and India are practicing multiple uses of water supplies for productive uses (International Water and Sanitation Center, 2003).

Until recently, the multiple benefits of domestic water supplies had not received as much attention as they deserved. Through time, experience has revealed that sanitation had to be integrated with water supply to achieve maximum health impact by the intervention. Likewise, multiple use of rural water supply for livelihood integrating water and development is becoming an effective way to use water for eradication of poverty and hunger and for gender equity. It improves food security, health and improves sustainability of water systems enhancing the willingness and ability of users to pay (International Water and Sanitation Center, 2003). Women will benefit more from the productive use of water as many of the water based livelihood activities could be managed by women at household level. This approach requires more integration and coordination between the water and agricultural sectors avoiding the sectoral barrier.

In Ethiopia, even though there are no data, by de facto water supplies in rural, semi urban, and urban areas are used for productive uses such as backyard gardening, rising livestock, beer brewing, brick making and others. Particularly in rural areas, the interest of people to use household level water supplies for income generation activities is nowadays increasing.

Enabling environments for multiple uses of rural water supplies in Ethiopia

In Ethiopia there are enabling environments for household/community levels multiple use of water supplies. The water resources management policy and strategy of the country require to ensuring integration of water supply activities with other water related development activities focussing on self-reliance, community participation and management. It also encourage self-financing of projects as much as possible at the local level and participation of local financing institutions such as banks, rural credit services, etc, in the development of water supplies (MoWR, 1998 and MoWR, 2001). Micro-enterprises are considered as one of the basis for development and poverty eradication being given all round support by the government (MoFED, 2005). Accordingly, there are several micro credit and saving institutions in most of rural areas of the country with adequate experiences in credit service delivery, which could encourage multiple uses of household/community water supplies. Since multiple uses of water supplies enables to earn money, people will be encouraged to build their own household water supplies and financing institutions will be willing to give credit service for income generating infrastructures. Thus implementing the policy directions.

The rural development strategy focuses on improvement of household income through intervention of household level agricultural packages including water based livelihood improvement packages. Thus several hundred thousands of rural household level water infrastructures are built for livelihood improvement

purposes which have significant potential for enhancing domestic water supply through improvement and the capacity built in the implementation is also a resource for enhancing domestic use of water through multiple uses approach.

The health policy of the country is based on prevention and for this purpose health extension package at household level including water, sanitation and hygiene is being implemented which would contribute significantly to enhance rural water supplies particularly at household level. Furthermore, in addition to the water sectors' institutional structure, there is organizational set-up from the federal to the Kebele levels for implementation of water, sanitation and hygiene (WaSH) in integrated manner coordinating the water, health, education and finance sectors at all levels. The agricultural sector is also a part of this coordination at the lowest levels, which could assist in the implementation of the multiple use approach. There is also a coordination forum for the government, donor groups and Civil Society Organizations (CSO) to harmonize intervention.

The rationale for adoption of multiple uses of rural water supplies for livelihood in Ethiopia

The necessity of adopting multiple uses of rural water supplies for livelihood as a strategy for accelerated implementation of the Universal Access Program has derived from the following rationales:

- Existence of hundred thousands of household level water infrastructures built for income generation in the rural areas is an opportunity to enhance the rural water supply UAP by improving the facilities to meet the domestic use in terms of water quality and quantity.
- The economical benefits gained from the facilities through the multiple uses for livelihood would encourage and enable the beneficiaries to make significant contribution for the investment cost for improving the facilities. Thus decreasing the financial need from external sources.
- The productive use of water will attract credit as micro finance institutions are interested to give credit for income generating activities.
- The economical benefit will ensure sustainability of the water supply system.
- Water resources will be utilized efficiently and food security will be improved along with the improvement of health.
- Women will benefit more from the productive use of water as many of the income generating activities could be managed by women at household level.
- Local investment will be enhanced and the household level investment will gradually grow to micro enterprise.
- The Development Agents (DAs) of the agricultural sector at the lowest level of administration (Kebele) could be utilized in the integrated water and development approach of rural water supply implementation breaking the barrier between the sectors.
- The multiple uses approach of rural water supply implementation may lead to scaling-up nationally poverty focused approach to rural water supply.

Implementation approach for scaling up of multiple uses

As discussed above, multiple uses of household level rural water supplies for livelihood has significant advantage and would contribute a lot to accelerate the implementation of rural water supply UAP in Ethiopia. Thus, scaling up of the multiple uses approach nationwide is paramount.

For this purpose, guidelines and manuals for promotion and implementation would be developed and intensive promotion and advocacy of the approach from the federal to the community level will be carried out accordingly through the WaSH implementation institutional framework integrating the rural development and agricultural sector at all levels. The promotion and advocacy would include micro finance institutions and the private sector to facilitate credit availability and significant involvement of the private sector in construction and maintenance. Financing modalities acceptable to Donors and NGOs would be developed to get their financial assistance.

The implementation would be carried out with step by step improvement of the existing rural household water infrastructures built for income generation to improve the quality and quantity of water for domestic use in addition to the productive use and after that proceed to new systems construction. The implementation would be improved through experience sharing and with continuous applied research following the

approach learning by doing. Finally, using the experience gained from the household level water supply the multiple use approach for livelihood would be scaled up to community level water supplies.

Conclusions

Several countries such as Senegal, South Africa, Zimbabwe, Chile, and India are practicing multiple uses of water supplies for productive uses. Taking into considerations national and international experiences, the policies of the country in water resources development and agriculture and other existing enabling environments in the country, multiple uses of rural household water supplies for livelihood is adopted in Ethiopia as one of the strategies for accelerated implementation of the Universal Access Program (UAP) with recommendations on the implementation approach. The multiple uses approach, in addition to accelerating the implementation of UAP, will effectively contribute to tackling rural poverty by maximizing the impact of water supply on poverty reduction and at the same time addresses problems of sustainability of schemes and cost recovery. This approach also would eliminate sectoral barriers of integration and bring convergence between sectors particularly the water and agricultural sectors. Accordingly, not using the existing enabling environments in Ethiopia for multiple uses of rural water supplies would be a missed opportunity. More over, multiple uses of water supplies in Ethiopia are not well studied. Thus it also needs to be addressed.

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