

Grey Water Collection

Utilizing Used Water for Irrigation



Introduction

Water Scarcity is predominant problem in Nepal especially in the midhills. Drought, increase in temperature and erratic rainfall are the primary reasons for the problem of water scarcity. Due to water scarcity, the agriculture is affected and production is low, which is affecting the food security. Women and children are facing difficulty especially in fetching, collecting and managing water for the household needs as well as irrigation.

One of the methods to utilize the limited supply of water is grey water collection pond. Any water discharged from the household use such as bathing, washing hands, cleaning utensils and washing clothes, other than sewage, is called grey water. During the time of scarcity of water, it is one of the useful solutions to wisely

utilize water. Grey water collection pond is a simple, low cost and easily adoptable technique in which waste water is collected and reused for irrigating home or kitchen garden in a productive way. Grey water collection pond ensures irrigation facility during the dry seasons. It can be further utilized as habitat for fish raising which could additionally supplement household income.

Construction of the system

It is a simple, low cost and efficient system. It is an alternative source for irrigation and can help to grow diverse vegetables and fruits in the home or kitchen garden and increase yield, which can support in generating income and earning livelihood. In this system, the water running off from the use in domestic/household purposes are stored in a collection pond. The running water is stored and saved and hence used for the purpose of irrigation of kitchen/home garden. There are two ways in which grey water collection pond can be constructed: cemented pond and plastic pond. For the construction of grey water collection pond, a pond of plastic/cement is developed. The pond should be in shady place as there are chances of evaporation if constructed in an open area. The size of the pond depends upon the need of the household ranging from 3*2*1 metres to 6*4*1 metres. A one metre pipe is needed to connect the pond with the area where water tap is being used/water is being used. This ensures that the runoff water is being collected and stored in the grey water collection pond.

Grey water can also be further utilized as a fish rearing pond where fishes can be reared. The fish pond will help the households to consume fishes and also sell them in the market for additional income. The water used in fish pond can regularly be used for irrigation as well as for the fish rearing, helping in proper utilization of grey water. However, while maintaining a fish pond, the grey water should not contain detergents and soaps.



Cost of Production

To install a cement grey water collection pond of 1 square metre, the following is the cost of installation:

Cement (50 kg x 2)	NPR 2,000
Sand and pebble (8 sacks)	NPR 500
1 metre pipe	NPR 80
Labour (skilled)	NPR 1,000
Labour	Rs. 500
Total Cost of installation of cement grey water collection pond:	NPR 4,080

To install a plastic grey water collection pond of 1 square metre, the following is the cost of installation:

Silpaulin sheet:	NPR 600
1 metre pipe:	NPR 80
Labour (skilled):	NPR 500
Labour	Rs. 250
Total Cost of installation of plastic grey water collection pond:	NPR 1,440



Rtf Project Outputs

Right to Food (Rtf) project supported grey water collection technology in Udayapur that has become popular as it helped to irrigate home garden and kitchen garden during the dry season. Before construction of grey water collection pond, it was very difficult for the farmers to grow green crops. After adopting the technology, it ensured the nutritional security of the households during the dry seasons.

In Udayapur, 66 farmers were supported, each with 2 bags of cement and one meter pipe for construction of grey water collection pond. But because of the farmers' demand, additional 55 farmers were supported, each with 70 GSM (9 square m size) plastics for the pond construction. The project supported construction of 121 grey water collection ponds. Because of its low cost and effective nature, additional 100 farmers in Udayapur have constructed it with their own resource or in resource sharing with other projects. The farmers are now able to grow seasonal vegetables in their home gardens even in dry spells and consume diverse vegetables.

Limitation

- Regular maintenance might be required as the plastic is less durable and can damage or wear and tear.
- If the pond is not covered properly, it can be a breeding ground for mosquitoes and other insects.
- If the water is stored for long period of time, there are chances of the pond being contaminated and smelly.
- For rearing fish, water should be regularly changed, and water should not contain detergents and soaps.

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