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Water conservation ponds in Nepal

Summary

During the pre-monsoon season, between March and May, some areas in Nepal experience water shortage. On the other hand, during the monsoon, water excesses causes regular floods and landslides. In this situation, activities such as agriculture or livestock, as well as the availability of drinking water and women's workload are deeply affected. Guaranteeing water availability throughout the year is therefore essential to reduce the vulnerability of Nepalese farmers. Water conservation ponds prove strategic, storing water and replenishing groundwater reserves for the dry season and protecting hillsides from landslides during the rainy season. Conservation ponds are not a new practice in Nepal, as indigenous populations in the mid-hill region had used them in the past, but were lost due to the introduction of piped water supply. Currently, water conservation ponds are being reintroduced as a local adaptation strategy.

Description

Introduction In Nepal, increasingly irregular rainfall patterns have been affecting the livelihoods of Nepalese farmers. Households face water shortages during the pre-monsoon season, between March and May, as well as during post-monsoon and winter, between October and February. In this context, it is essential to guarantee water supply throughout the year in order to reduce vulnerability of farmers caused by erratic rainfall patterns. Water conservation ponds prove a strategic adaptation practice, collecting rain water and replenishing groundwater reserves during the monsoon, as well as preventing excessive erosion and surface runoff down landslides slopes. In addition, the availability of water during dry season is key for traditional rural livelihoods, such as livestock and crop cultivation, as well as in the development of new activities, providing habitat for fish-raising. Additional advantages include the stabilization and re-vegetation of gullies, water availability for cultivation of small-scale fodder, vegetables and fruit trees along the boundaries of the pond, irrigation of kitchen gardens during dry periods and manure from dredged silt. Finally, conservation ponds ensure nearby water sources, considerably reducing the amount of time women dedicate to fetch water.

Objective The objective is to ensure water availability for rural livelihoods, throughout the year, as well as preventing and controlling landslides and excessive soil erosion during rainy season.

Implementation of the Technology Conservation ponds may be built in many different ways and sizes to suit the need of farmers. It is strongly encouraged to use local tools, materials and labor in order to facilitate maintenance and reduce costs. A critical feature is the size of the pond, which depends on land availability, household needs and slope considerations, as small ponds are better suited for porous soil and over-topping concerns. Location is another important feature, as the pond can hold a potentially troubling runoff in landslide-prone areas and increase soil moisture in strategic places. The pond-bed lining determines the seepage rate and varies in terms of replacement frequency, examples include plastic, stones, clay, and manure. On average, ponds tend to be about 1m to 1.5m deep. All these factors are determinant in the length of water availability. Ponds may be for individual or communal use.

It is important that ponds contain a diversion waterway that shunts excess water into a safe area village trenches often serve to this purpose.

Annual maintenance work is recommended prior to monsoon season, and tasks include dredging fine soils from pond bottom and maintaining diversion waterway.

In addition, institutional support is necessary to renew traditional ponds and raise awareness among rural communities in the mid-hill regions on the benefits, construction techniques and maintenance activities necessary. Also, Local community-based organizations need to be strengthened to promote replication of the practice. For further information, you may contact: selvaraju.ramasamy@fao.org

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water ponds



communal use water pond



individual water pond

Keywords

Groundwater replenishment
Landslides
Drought
Water harvesting
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conserving water

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Climate change and disaster risk reduction
Natural Resources Management

Region

South Asia

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