

## Transition from pasture land to fruit and fodder plots



### Definition of technology:

The site of the pasture on hills degraded as a result of a over-grazing is fenced and prepared for cultivation of grapes, fruits and herbs by an establishment of terraces, application of manure, planting of trees and irrigation.

### Brief summary of technology:

The areas in the Varzob valley of Tajikistan with steep slopes of ca. 30% represent the degraded pastures. The soil surface, which has been almost deprived of vegetation, is compacted and is subject to erosion. In 1982, a landholder-innovator planted grapes and fruit trees on 0.5 ha and above this site prepared another site for grass cultivation on hay on his own initiative. In five years the degraded

site turned into a site of sustainable land use.

The first stage of site preparation is an establishment of protection from animals. The scrap metal and other materials were used for a fencing construction of a height of 1.5 m. To collect water from the above, sloping land, narrow terraces of a back-slope with a water-retaining ditch along a contour were constructed. During the first stage the terraces collected water in quantities insufficient for an establishment of saplings and therefore, an additional irrigation was applied. Water was delivered in old car chambers with the use of donkey force. Manure from above located pastures was delivered to improve soil fertility. Some 3 t/ha of manure was used within 20 years. Ca. 40% of saplings were established.

## AGROECOSYSTEM: Rangelands

### ADVANTAGES

- Restoration of degraded sites, reduction of soil erosion;
- Increase in productivity: good harvest of fruits, hay;
- Increase in self-sufficiency.

### DISADVANTAGES

- Water delivery for additional irrigation of a garden is labor-consuming;
- In general, the capacious labor is required.

This experience was used by others households and currently around 15 ha of the degraded land of the Varzob valley were turned into gardens. The innovator cultivates grapes, apricots, almonds, plums, mulberry, pomegranate and cherry. Fruits are used for personal consumption, and in good production years, he sells table grapes and apricots in the market.

The yield of hay from naturally reborn grass on the site and in the inter-rows areas of a garden is ca. 0.2 t/ha. Pruned grape branches are used as fuel.

**Main land use issues and the main causes of land degradation:**

Overgrazing, low natural soil fertility, abrupt slopes cause an erosion and degradation of sloping land.

**Main technical features of technology:**

Improvement of soil cover, increase of nutritious elements and humus in soil, fertility increase, catching of surface runoff, erosion prevention.



## CACILM Factsheets

These factsheets are designed to promote proven and sustainable interventions to improve land management in Central Asia. The technologies and interventions highlighted are generated by the IFAD-funded project on Knowledge Management in Central Asian Countries Initiative on Land Management. The initiative's Knowledge Platform, managed by ICARDA, aims to disseminate solutions to rehabilitate and prevent the further degradation of Central Asia's natural resources.

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