

Agriculture & Forestry in Pakistan (3)

Part 3: Flood Farming in the Sulaiman Range

The land along the Sulaiman mountain range is losing its vegetation and becoming devastated as a result of years of over-grazing. This area tends to receive torrential rainfalls, as a result of which the ground surface gets badly eroded and a large amount of soil is carried away down-stream by the flood. The course of such floods is called a 'Hill Torrent' in this area, and there are a number of alluvial fans at the foot of the mountains which have been formed by the Hill Torrents. In these alluvial fans, since ancient times, people have been practicing irrigation farming, which depends on flooding for its only source of water supply. We have already mentioned this method of farming in the 'Agriculture and Irrigation in Arid Regions' series (AAINews Vol.8). By contrast, at the end of the alluvial fans lies the irrigation channel land of the Indus Plains, which in turn has often suffered destruction of channels and inundation damage to agriculture due to flooding. Therefore, there is a need to design a comprehensive water management scheme, aiming at controlling erosion and floods in the upper basin, expanding secure flood farming in the alluvial fans, while minimizing the flooding damage in the irrigation channel land of the lower basin.

In the river basin of Mitawan-Hill Torrent in the west of Dera Ghazi Khan in central Pakistan, a pilot project of community-based river basin conservation is under way. Here activities such as plantation and vegetation improvement are conducted, in addition to construction of stone check dams for controlling soil discharge and construction of small structures such as contour terracing or crescent terracing on slopes. In the nursery attached to the project office, not only seedlings for plantation but also shrubs for animal feed and seedlings of fruit trees are grown for distribution. Revitalization of the vegetation in the river basin along with storing of water and soil on the slopes along the river leads to a higher farming capacity of the river basin as a whole, thus improving peoples' lives and the agricultural environment. The conservation of the river basin is directly related to lifestyle improvement of the local community, and local participation is essential for such activities. Therefore, educational and publicity activities, such as support for formation of farmers' organizations and activities headed by group promoters, form one of the important components of the project. Such local community support activities faced various difficulties at first, but an increasing number of people are taking part in cotton cultivation and pasture management by rotation scheme, and recently villagers have started taking the initiative in new activities. If such a movement becomes widespread in the whole river basin, the effect of the project would be enormous.



Stone cairn for soil conservation and seedling protection



Check dam for rainwater reservoir and crescent terracing for plantation



Seedlings grown inside stonewall

Technical improvement of flood control and resource utilization along the Hill Torrents, which relates to sustainable resource management in the river basins, will not only lead to improvement of river basin management and agricultural productivity in arid land in other parts of the world including Central Asia, Middle East and western China, but also it will make a great contribution to lifestyle improvements of local communities in such areas.