

Cisterns

Due to the pronounced seasonal nature of rainfall and its irregular distribution, cisterns have been widely used in Palestine for storing run-off water for later use in the dry months.

A typical cistern is a cone-shaped hole which is about five metres deep and four metres wide (at the bottom). It holds about 80-100 cubic metres of water. Such cisterns have played a critical role in meeting water needs in practically all rural communities in the West Bank. However, their significance has declined over the last two decades due to the dissemination of modern water storage and delivery facilities. Hence, many of them have broken down.

The researcher believes that cisterns could possibly reassume an important role in the context of modernizing rainfed agriculture. Water stored in winter could be used to irrigate newly planted olive seedlings or in the spraying of weedkillers and other chemicals. Thus there may be a good case for reclaiming abandoned reservoirs in areas where certain modern techniques are recommended for developing rainfed agriculture.

Irrigation techniques

Despite the scarcity of available irrigation water, West Bank farmers had until recently practiced primitive irrigation techniques, which were both wasteful and labour intensive. Water was carried in long open earth ditches where it was subject to substantial evaporation and losses in deep infiltration. Some experts estimate the loss incurred in conventional delivery systems to range from one third to one half of the basic supply at the site of origin.¹

1. Honet and Blaide, Water Resources and their Exploitation in Judea and Samaria, (Tel Aviv: Mekorot Water Company 1981, p 13).

On the average the quantity of water per irrigated donum of land is about 50% higher than in Israel (112m³ vs. 701m³ per donum)¹. In addition, water distribution in the field may be too uneven, which ultimately leads to a lower productivity.

Irrigation techniques have rapidly improved over the past ten years. This trend has been stimulated by the high cost of water and labour, and by easy accessibility of modern technology through Israeli intermediaries. It has been further accentuated by active financial and technical support provided to farmers by the Mennonite Central Committee. The pace of change has been particularly dramatic in vegetable growing, where drip irrigation pipes and sprinklers are gaining acceptance.² This has been accompanied by the rapid expansion in protected farming under nylon sheets. A recent study in the Jordan Valley has demonstrated that profitability of vegetables under drip irrigation and nylon protection is about seven times that of traditional farming.³ More rapid expansion along this line is impeded by the high volume of investment needed for this purpose, estimated at about JD 100 per donum.

Land Classification

West Bank land is characterized by steep slope gradients and excessive rockiness. Both of these characteristics, as we shall see later in this chapter, impose grave constraints on the prospects for modernizing and intensifying agriculture.

1. Calculated from water consumption data in Table III-5 and on the basis of 80,000 donums of irrigated land in the West Bank, vs 1,980 thousand donums in Israel. (Source: Statistical Abstract of Israel, 1980, op cit, p 9).
2. According to the Director of Agriculture in the Jordan Valley, 90 percent of vegetables grown in that area is irrigated by modern techniques.
3. Salim Tamari and Rita Giacaman, ZBEIDAT: The Social Impact of Drip Irrigation on a Palestinian Peasant Committee in the Jordan Valley, (West Bank: Birzeit University, 1980), p 25.