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Permaculture in Palestine

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Before introducing the permaculture program in Palestine, it is necessary to introduce certain facts and figures on Palestine which resulted from more than 28 years of Israeli occupation, and which now justifies the permaculture program in Palestine.

The Palestinian society, currently with a population of 2,465,000 living on 6047 Km², underwent a number of changes which affected its socio-economic infrastructure, mainly due to Israeli practices since its occupation to the West Bank and Gaza in 1967:

- Land confiscation has been Israel's most destructive policy against the Palestinians' economy and social stability. Until now Israel had confiscated about 65% of the land of the West Bank and 40% of the Gaza Strip, including the most fertile areas of lands. Land confiscation was mainly for settlement construction and expansion, as well as other military and security reasons. Currently, there are 141,000 Israeli settlers living in 199 settlements in the West Bank, and 6,000 living in 24 settlements in the Gaza Strip, and about 150,000 living in 25 settlements in Jerusalem.
- Israel's land confiscation was coupled with water resources confiscation. Currently, the Israeli settlers consume 4 times the Palestinian's consumption. 20% of the Palestinian villages do not have drinking water or water networks, while almost each settlement has a swimming pool.
- Although agriculture was and still is the major contributor to the Palestinian economy, there was a significant decline in its contribution: from 36% in the 1970's to about 20% in the 1990's. This was mainly due to land and water confiscation which limited the expansion of agricultural land, uprooting of thousands of fruit-producing trees and immigration of the Palestinian farmers towards the Israeli labour market.
- About 120,000 Palestinians were registered officially as labourers in Israel before it started its closure policy since 1993. Currently only 15,000 to 17,000

workers are allowed to enter Israel provided that they have work permits. Israel was planning since 1990 to marginalise the Palestinian labourers by replacing them with foreign ones. Until now Israel has about 300,000 registered foreign workers mainly from Eastern Europe and Russia. Currently, the unemployment in the West Bank is about 35-40% and about 60% in the Gaza Strip. Due to this policy of closure, the Palestinian economy's loss is estimated at 6 million US\$ per day. According to World Bank estimates for 1995, 17% of the West Bank population and 32% of the Gaza population are living under the poverty line.

- The Palestinian farmer was organically treating his land and had a form of self-sufficiency prior to 1967. However, currently, Israel encouraged the Palestinian farmers to cultivate land with mono crops and extensively use chemical fertilisers. This was mainly to serve the gap in the Israeli market of certain agricultural products.
- Israel had put every effort to lead the Palestinians for a full reliance on its products. Currently, the Palestinian market is Israel's second major market. 88% of the Israeli goods are imported by the Palestinian market. External commercial exchange between the Palestinians and any other country is totally controlled by Israel which controls the borders, and imposes extremely complicated procedures for commercial exchange, travel and development of economy.

In addition to the above-mentioned factors which led to deforming the Palestinian economy, Israel had totally neglected the infrastructure and constantly violates basic human rights and international laws. Networks of water, electricity and roads are nonexistent in most of the Palestinian areas despite the high taxes which were regularly collected from the Palestinians. There has not been any development to the health, educational and social structures for the services of the Palestinian community. More than 100,000 Palestinians were imprisoned since 1987. House demolition and sealing is still continuing allegedly for security reasons. Israel denies the Palestinians family re-unification by imposing strict procedures on granting entry permits.

Due to the above mentioned factors, a debate occurred in the Palestinian community about the process and meaning of development. MA'AN Centre¹, dedicated to promoting social and economic development started its first permaculture development program in 1992, developing the Australian system for integrated agriculture into the community setting of the traditional Palestinian village agriculture.

This program is a Palestinian initiative to adapt the design approach to the particular traditions and current situation of the Palestinian people living in the West Bank and the Gaza Strip, creating a working example for the community to take what is appropriate depending on their resources.

¹ MA'AN Development Centre is a Palestinian non-profit community development institution which began work in 1989 and now provides a wide range of training and development services in the Occupied Territories.

Development of permaculture project in Palestine

The Marda Permaculture Centre opened in October 1993 in the village of Marda, 15KM south-West of Nablus in the West Bank. The opening followed a 12-month participatory development process involving all sectors of the community which led to the publication of the first permaculture report on the Occupied Palestinian Territories in July 1993.

Slide show on the project's evolution

- Our grandfathers' sustainable systems protected the land from erosion by terracing with lime stone rocks and planting olive trees . These have been there for hundreds of years and will continue for many generations to come.
- The Marda permaculture site began. We had stony poor land due to the effects of erosion factors ie the water flow and wind.
- In April 1994, the first permaculture design course (PDC) held in the Middle East was conducted at the Marda Centre producing qualified Palestinian permaculture trainers. The participants were taught how to study the nature and work with it rather than against it.
- We designed a house garden to utilise the house wastes (by products). We:
 - built a circle garden;
 - put porous clay pots in the ground for watering;
 - practiced companion planting;
 - planted a diversity of plants;
 - implemented grey water gardens;
 - made compost;
 - utilised elevation planning by using plants beside the wall which isolate the building from climate conditions;
 - built a nursery attached to the house which provides heat for the house in winter and coolness in summer (passive solar energy).
- We utilised our house space like the glass veranda and roofs as productive places and nurseries as an example for people who have no land.
- The land was terraced and planted with wind breaks for protection from wind and water erosion.
- We added compost and planted legumes in order to increase the fertility of the land organically rather than using chemicals.
- We utilised the edge effects of the stone walls which are rich in water and nutrient by planting trees near the walls which are more warm in winter and captured dew through the porous lime stone in Summer.
- We planted vegetables and grains between trees, as our agroforestry system.
- We built a hot house on the flat roof to be utilised as a productive area and as insulator in winter, consequently reducing the needs of heating inside the centre.

- We harvested the running winter spring water by installing:
 - a cement water tank and a plastic tank;
 - swales and, thus, increasing the water content of the soil.
- We reduced pollutants by:
 - recycling tyres, using them for planting in stony areas and inclined edges, by filling them with soil and compost, and we also used them for land terracing;
 - using organic residues from the village and the centre to make compost
- We cycled nutrients by harvesting wild nettles and other unused plants to make compost and mulch. We squeezed nettles to get their juice to be a fertiliser and insect repellent.
- Huge amounts of stones were available on site and used as mulch.
- The centre has been operating as a training and an extension centre of permaculture for farmers, women and engineers in the village and the area.
- We have been forming permaculture committees in the villages to work and extend permaculture through their communities.