UNITED NATIONS

E

ECONOMIC AND SOCIAL COUNCIL

Distr.
LIMITED

E/ESCWA/SDPD/2007/WG.5/CP.3
26 October 2007
ORIGINAL: ENGLISH

Economic and Social Commission for Western Asia (ESCWA)

Regional Conference on Land Degradation Issues
in the Arab Region
Cairo, 30 October - 1 November 2007

Palestine Country Paper
Land degradation in rain fed and range degraded ecosystem in Palestine

By

Abdallah Qasim Saleh
Director General of Extension and Rural Development
Ministry of Agriculture

Palestine

07-0429

CONTENTS

INTRODUCTION

Palestine (west bank and Gaza strip) are located east to the Mediterranean Sea between 29◦and 33◦ north latitude and between 35◦and 39◦ longitudes.

The total area of Palestine cover 6,023,510 Dunams, distributed between west bank (5,660,820 dunams, forming 94 % of the total area of Palestine) and Gaza strip (360,000 Dunams forming 6 % of the total area.

In 2005, the Palestinian population was 3,762,005 of which 63 % lived in the west bank and 37 % lived in Gaza strip.

The total area of agriculture land currently used by Palestinians covers 30.5 % (1,833,350 dunams) of the Palestinian land area.

Rain-fed agriculture is practiced in 87% of the total cultivated area, while only 13% is irrigated agriculture.

In addition just 45% of owned lands are presently cultivated, 11. 9% is arable but uncultivated, 8.5 % is suitable for reclamation, 5.5% is unsuitable for reclamation, and 0.4 % is being used as grazing land, while 17.2% includes urban areas used for construction, 11.5% of owned land has been confiscated by Israeli for purposes of building colonies, constructing by pass, roads building separation wall.

Typically, agriculture, holdings in Palestine are small and fragmented due to the Palestinian inheritance land ownership system.

The main factors including land degradation are human activities, occupation and climatic changes .land degradation has been defined are reduction in the soils capacity to produce in terms of quantity, and quality .The dramatic change of agriculture practices and population increase during the last years in Palestine are the main driving forces for land degradation.

Even so few studies were conducted to asses the comprehensive land degradation at national level. Irrigated land, Rain-fed farming, and rangeland are considered the most ecosystems suffering from land degradation.

I. AGRO-ECOLOGICAL ZONES

Although, West Bank and Gaza Strip (WBGS) areas are geographically separated, they are considered one integrated unit and the Palestinian state shall be established on this unit. Both West Bank (WB), including East Jerusalem.

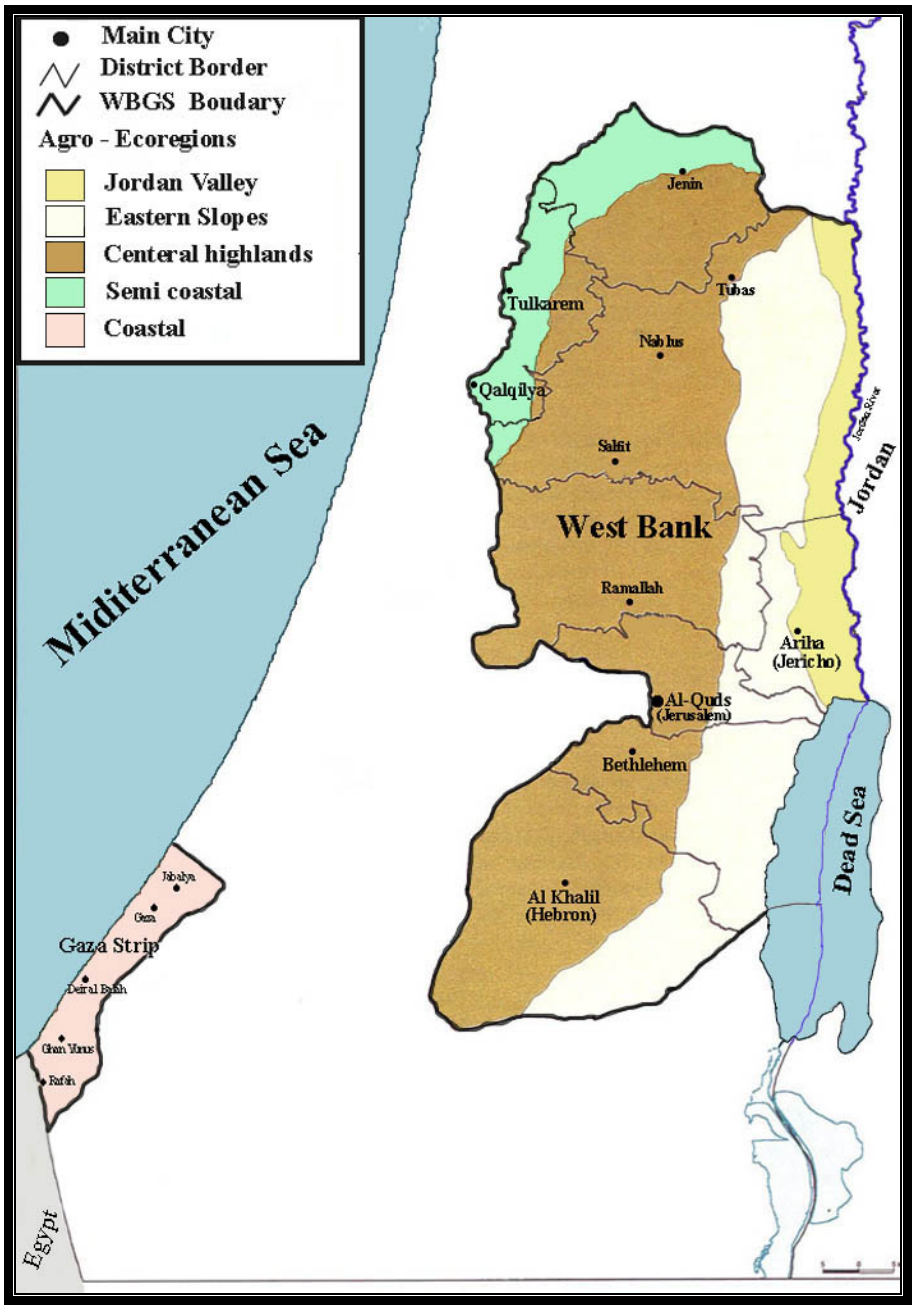
WB is bordered from the west, north, and south with ceased fire line of 1948, and from the east with Jordan River and Dead Sea. Total area of WB is 5845 sq km with a length of about 130 km and a width of about 50 km. It is divided administratively into 11districts: Nablus, Jenin, Tulkarem, Qaliqilya, Salfeet and Tubas are considered the Northern Districts; Jerusalem, Ramallah, and Jericho are considered as Middle Districts; Bethlehem, and Hebron are considered as South Districts (PCBS – Geographic Statistics 2000).

GS is located on the coast of Mediterranean Sea with a length of 40 km and a width ranges between 6 km in the north and 12 km in the south. The area of GS is 365 sq km, bordered with ceased fire line of 1948 from the north and east, Egypt from the south, and Mediterranean Sea from the east. It is divided administratively into 5 districts: North Gaza and Gaza (Northern), Deir Al-Balah (Middle), and Khan Yunus and Rafah (Southern). **Palestine divided into five agro-ecological zones (map one):**

1. **The Jordan Valley Region** is a narrow strip lies between the eastern slop and Jordan River. The area is 400 sq km with a length of 70 km and it lies between 90 to 400 m below sea level near the Dead Sea. The rainfall is low (100-200 mm/year) and the climate is semi-tropical with mild winter and hot summer. The soil, predominantly, is sandy and calcareous with soil Stalinization as a major problem. This region is considered the most important region in irrigated agriculture because of the distinguished climate and the availability of water from springs and ground water.

2. **The Central Highlands Region** extends the length of the WB with mountains ranging from 400 to 1020 m above sea level; rainfall average is 450 mm/year, varying from 300 mm/year in the southern foothills to 600 mm/year in the north. Total area of region is 3500 sq km with 120 km long and 50 km width. The mountains of Nablus, Jerusalem, and Hebron are located in this region, which composed of limestone and shallow soils. Agriculture is primarily rain-fed, including in order of importance, olives, field crops, stone fruits, vegetables and forage.

Map one: Agro-Eco-regions of West Bank and Gaza Strip



MoA-1999

3. **The Semi-Coastal Region** is the smallest region (400 sq km) in WB; This narrow strip, with a length of 60 km and 2-12 km width, comprising parts of Jenin and Tulkarem districts. Elevation ranges from 100 to 300 m above the sea level, and the average of rainfall is 600 mm/year, ranging from 400 to 700 mm/year. This region is characterized with flat Plains and loamy texture alluvial origin deep soils.

4. **The Eastern Slopes** is a transitional zone between central heights and Jordan valley. The area is 1500 sq km with 70 km long and 10-20 width; the elevation ranges from 0 to 800 m above the sea

level. This zone, which extends from the eastern parts of Jenin to the Dead Sea in the south, is characterized with steep mountain, little rainfall ranges from 250 to 300 mm/year, semi- arid or desert climate, and low plant coverage due to overgrazing.

5. The Coastal Plain (GS) is located along the eastern coastal plain of the Mediterranean. It is composed of sand dune with 1.6 to 5 km width, elevated from 0 to 40 m above the sea level. Rainfall ranges from 200 mm/year in south to 400 mm/year in the north with fertile soils. Gaza city is the largest city and Dier Al-Balah , Khan Younis, and Rafah are smaller.

II. LIVESTOCK AND RANGELAND ECOSYSTEM

The dry land and mountainous regions cover more than 87 % of the total territory and they are inhabited by more than 50 % of total respective populations .agriculture and mainly livestock herding the major activities of the population in rural areas.

The eastern slopes agro-ecological region (150.000 ha) makes up most the Palestinian rangelands only 22,500 ha remain as open for rangeland while the other areas is closed as military area. Thus, the estimated carrying capacity of this area is 2,600 ruminants, which caused the desertification. The alarming trend in land degradation and loss of local and native plant diversity following the extensive overgrazing, deforestation and agricultural encroachment are resulting in natural habitats destruction. Under limited farmed areas, the wide spread of improper land use and inappropriate technological packages have led to a significant decrease in land productivity through high soil erosion and decrease in soil fertility making farming activity less and less profitable.

Locally, land degradation will affect seriously the livelihoods of local communities which could in-turn create social problems related to increased poverty and immigration. Regionally and globally, they will contribute to rapid build up of environmental challenges of desertification and global warming with marked negative effects in the dry lands.

Past and most of the on-going Research and Development projects aiming at improving the productivity of range and mountain ecosystems and dry land farming systems did not lead to significant impacts on the livelihoods of local communities so far and were not able to revert the trend of degradation of natural resources.

III. LAND DEGRADATION CAUSES

- **Human Activities**

In 2005 the total population in the Palestinian territories is 3.8 million with growth rate 3.8% . It will be over 4 million in the year 2010, and over 7 million in 2025.

As result of this huge growth rate (around 4%), and the increased population density in some of the most vulnerable rural areas increasing the demand for food, feed and shelter which leads to push people to misuse of these natural resource and increasing poverty and accelerating land degradation.

- **Climatic Conditions**

Deforestation and the expansion of urban areas on fertile agricultural lands, in addition to the conversion of huge amount of grazing areas to closed military bases are the main effect in the land use. It

estimated that 23% of the official forest has been destroyed from 1971 to 1999. All of these forests were converted to grazing lands or to the needs for urban expansion; and the majority of grazing areas were converted from grazing to military bases or closed areas.

- **Political Situation**

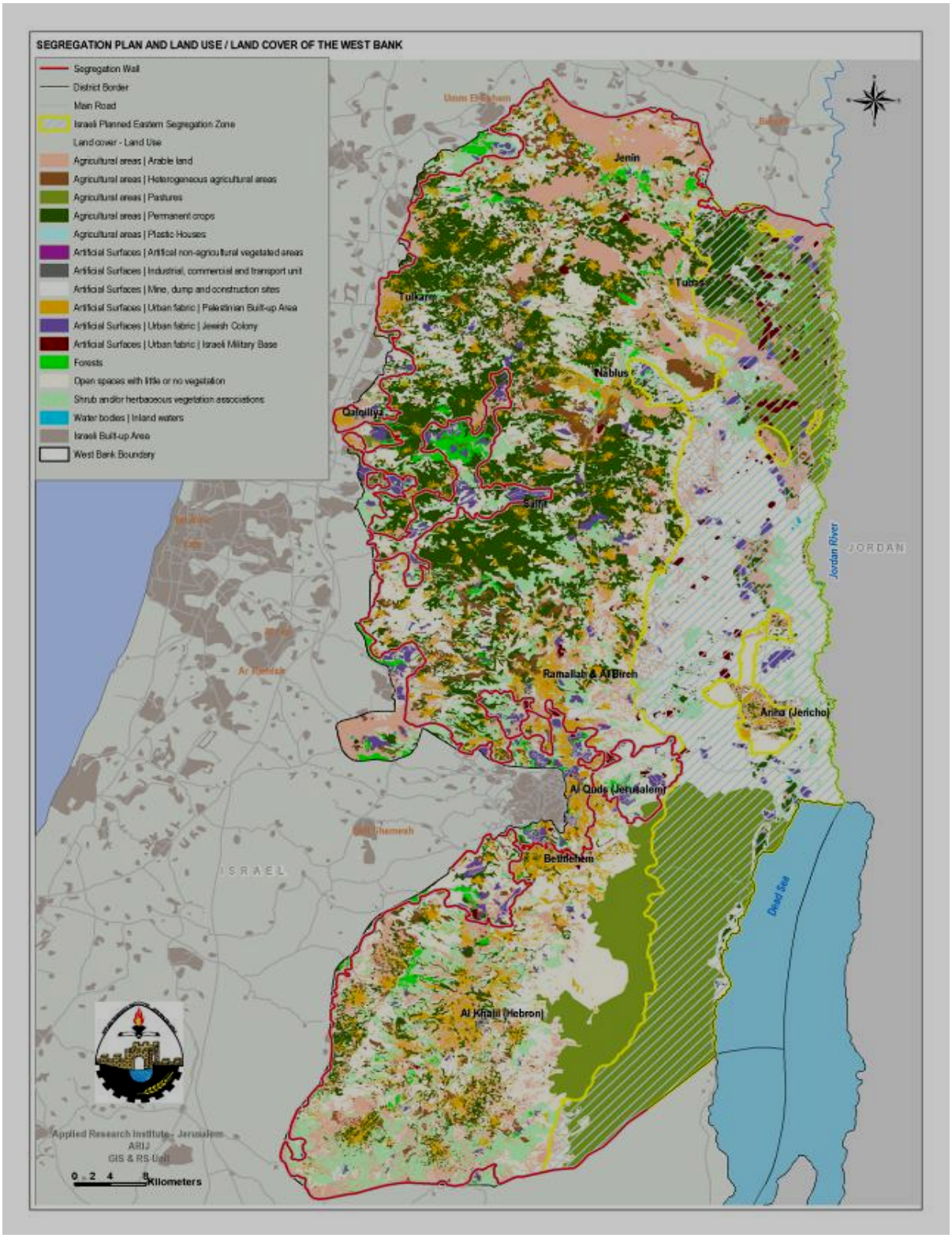
Palestinian access to natural resources is greatly limited by the Israelis. Israel has confiscated some of the most fertile lands to build Jewish settlements and extensive areas of range and forestlands have been confiscated, or are inaccessible to the Palestinians. The control of the Palestinian National Authority is limited to only approximately 40% of the West Bank and 74% if the Gaza Strip

The Israeli Occupation has played, and continues to play, a major role in the degradation of agricultural and rangelands, deforestation, desertification, depletion of water resources and the degradation of water quality, leading to far-reaching social, economic and political implications.

In June 2002 ,the Israeli governments began implementing a unilateral separation plan in the west bank ,in which it started issuing military orders to seize Palestinian lands under the pretext of security and started constructing the segregation wall ,the separation zone is built on Palestinian land east of the 1948 green line ,and penetrates deep in the occupied Palestinian territories ,looping like snake in depths from 0 km to 22 km into the heart of the northwestern areas of west bank isolating and distributing larger areas of the Palestinian partial agriculture lands , tree ,crops ,water resources ,forests ,nature resources and thus the whole natural of green cover .

- **The western segregation zone**: extends along the green line from Jenein in the north of west bank to Hebron in the south and includes parts of semi coasted, central high lands in addition of small portion of the eastern slops of the Palestinian agro ecosystem. .This security zone has total area of 560 km^2 representing 9.9 % of the west bank. .
- **The Planned Eastern segregation Zone:** includes the Jordan valley of the shores of the Dead Sea with a total area 1663 km^2, representing 29.4 % of the west bank (Map two).

- **Major Causes of land degradation**
  - Reduction of forest areas
  - Expansion of cultivation into marginal land
  - Overgrazing
  - Misuse of chemicals
  - Excessive use of fertilizer
  - Deforestation
  - Over pumping
  - Over use of crop land
  - Increase of livestock
  - Cultivation on steep slopes
  - Over- intensive cultivation
  - Continuous land use
  - Agricultural expansion
  - Improper land use
  - Lack of clear police concerning land use
  - Lack of awareness
  - Land tenure



The Israeli Anticipated segregation zones in the West Bank

Environmental destruction of a forest Jabal Abu Ghneim

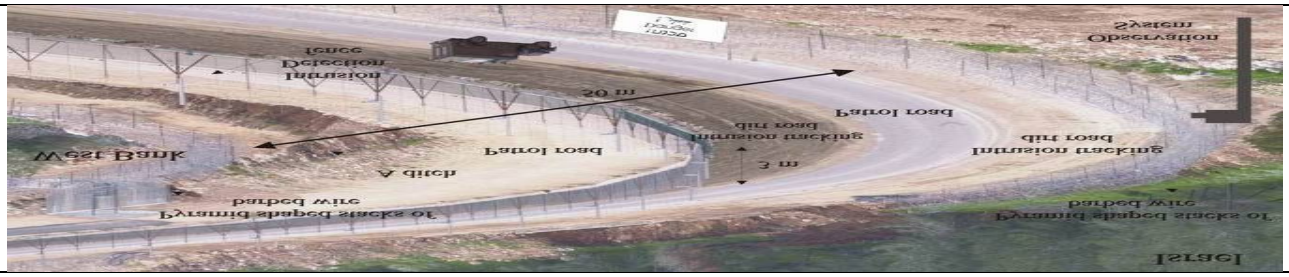


Photo Courtesy of ARIJ

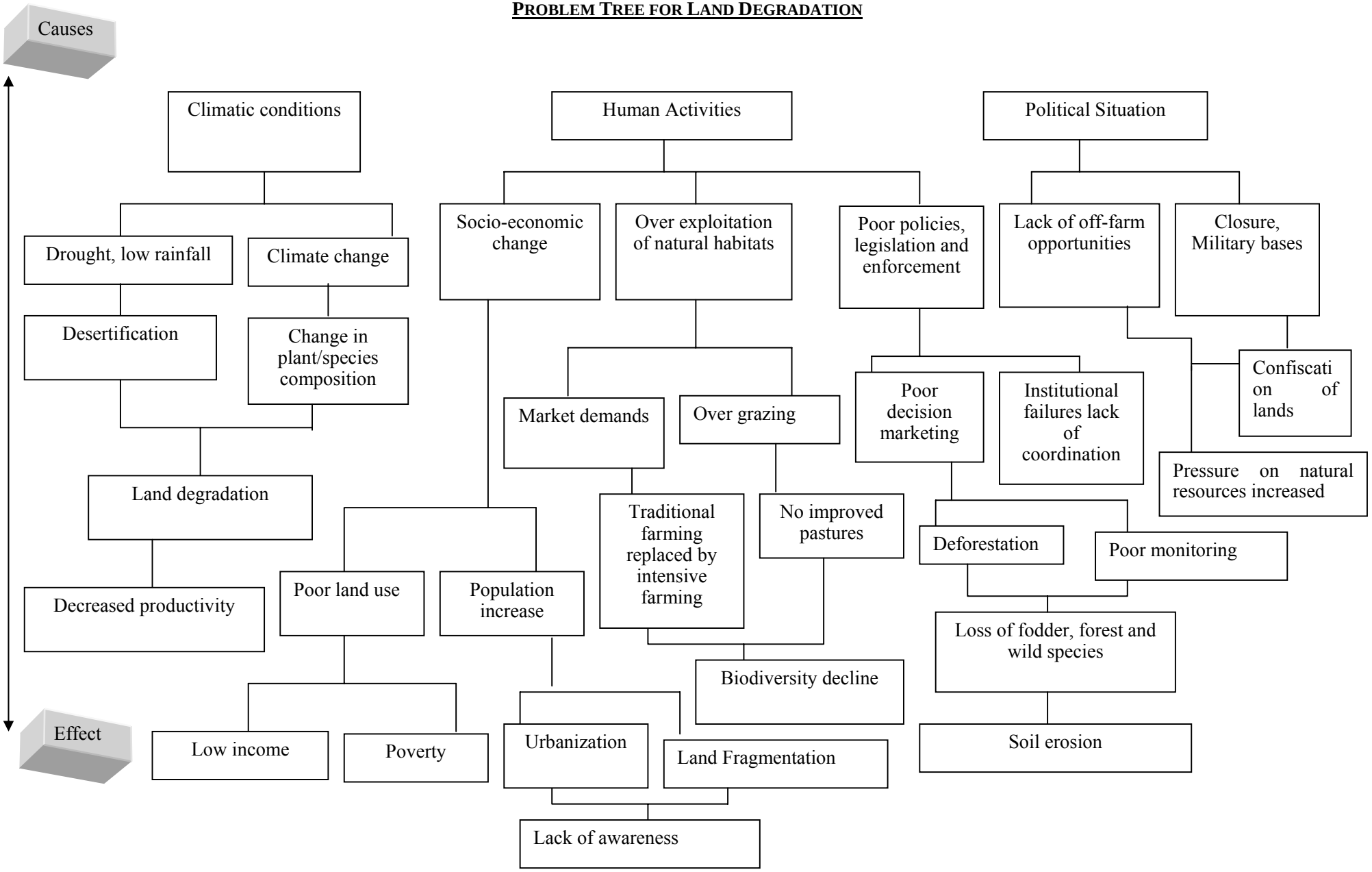
The bulldozing of land and uprooting trees by the Israeli government

IV. THE IMPACT OF ISRAELIS SEGREGATION WALL ON THE PALESTINIAN AGRICULTURAL LAND

1) Threatening the Palestinian lands, in the eastern and western parts of west bank.

2) Closure of the eastern slops region which is the main grazing area led to over grazing in the accessible grazing area which in turn led to further reduction of the vegetation cover and consequently soil erosion and desertification.

PROBLEM TREE FOR LAND DEGRADATION



V. ON-GOING AND COMMITTED PROJECTS IN MOA

1. Conservation and Sustainable Use of Dry land Agro-biodiversity of the Near East (Regional).

The dry land agro biodiversity project which has complied databases on both social and natural factors of communities in Jenin and Hebron in the West Bank has developed the elements for community based approach including the community development plans. This project has also investigated agricultural packages, management plans, add-value technologies and alternative sources of income that need to be demonstrated further at large scales.

2. Employment Generation in Agriculture. Better known as the "Land Reclamation / development Project".

It is designed to generate employment and expand agricultural production by terracing, excavation of cisterns and planting of fruit trees. The project is relevant because of its mechanism of collaboration between the MOA and local implementing institutions and building terraces and cistern and improving livelihood of local communities.

3. The Participatory Natural Resources Management Program (PNRMP)

It is funded through the International Fund for Agricultural development (IFAD) as a loan to the Palestinian Authority. The project is relevant because of its mechanism of collaboration between the MOA and local implementing institutions and creating natural resources management strategies and adopting the microfinance program.

4. Food Insecurity and Vulnerability Information and Mapping System (FIVIMS),

Funded by European commission and implemented by FAO in partnership with the Ministry of Agriculture. The project has direct relevance to the present project because it aims at building a database of all relevant information to food insecurity and vulnerability In addition, the project will produces demand driven reports addressing merging concerns and issues relevant to he food security and vulnerability of the Palestinians.

VI. FUTURE PLANNED ACTIVITIES AT NATIONAL LEVEL

- Due to the lack of quantities assessment of land degradation, it is critical to conduct comprehensive studies of land degradation in the West Bank to understand the factors, driving forces and factors affecting enhance land degradation.
- Assess and monitor local plant diversity using eco-geographic/botanic and socio-economic surveys.
- Survey of local knowledge on different uses and management techniques and on changes in land use.
- Use of GIS/RS techniques for the assessment and monitoring of land degradation and build specialized database by using GIS and RS methods.
- Raise awareness campaigns and extensions programs for local communities.
- Conduct afforests ration programs for degraded rangelands with the native plants.
- Develop legal and policies for combating land degradation at all levels.

- Assessment of land degradation by identifying the suitable indicators that explain the root cause of degradation, driving forces, status, and impacts and responses to land degradation.
- Demonstrate the value of water harvesting and reforestation within the mountain ecosystems.
- Demonstrate the integrated crop management systems, which can contribute to increasing productivity of landraces of prevailing crops, while improving the soil fertility and reducing its erosion.

VII. FUTURE PLANNED ACTIVITIES AT REGIONAL LEVEL (DRAW SOME USEFUL EXPERIENCE AND LESSONS FROM REGIONAL COUNTRIES)

- **Good practices in institutional frameworks**

Responsibility for rangelands is often fragmented across different ministries – the ministry of agriculture and the Ministry of environment local authorities..Etc. The critical issue may not necessarily be the creation of a new government agency, but ensuring and/or creating laws and policies that clearly define the rights and responsibilities among various agencies and the effective implementation of these laws and policies which can be benefit from our regional countries.

- **Good practices in rangelands management**

Before considering government agencies and regulatory mechanisms it is important to thoroughly understand the pastoral lifestyle and how pastoralists already manage their resources and we will benefit a lot from our neighboring countries by exchanging our experience.

- **There is abundant technology available for rehabilitating rangeland,**

Which need to be exchange the experience between regional countries .For example, to keep animals out of areas that have been re-seeded? This requires community agreement to avoid newly planted areas or (perhaps) agreement to fence off areas and this done in different countries with some positive.