



Bethlehem 21 Project

Environmental Sustainability for a Better Life: An Integrated Approach for Localizing Agenda 21 in the Bethlehem District

Bethlehem 21 Workshop

Sustainable Development Challenges in Palestine

Applied Research Institute – Jerusalem (ARIJ)



28 June 2006



Note: The views expressed in this material do not necessarily reflect the views of the European Commission and the Swiss Agency for Development and Cooperation.

Sustainable Development

Sustainable development as defined by the
World Commission on Environment and
Development is the
“development that meets the needs of the
present without compromising
the ability of future generations
to meet their own needs”.

(World Commission on Environment and Development, 1987)

Sustainable Development

Sustainable development has three pillars: environment, society and economy.

Considering them as overlapping circles of the same size, the area of Overlap in the center is human wellbeing. As the environment, society and economy become more aligned, the area of overlap increases, and so does human wellbeing.



Sustainable Development

Thus, the efforts to build a truly sustainable way of life require the integration of action in three key areas (United Nations, 2001):

- **Economic Growth and Equity**
- **Conserving Natural Resources and the Environment**
- **Social Development**

The Palestinian Territory consist of two physically separated land masses.

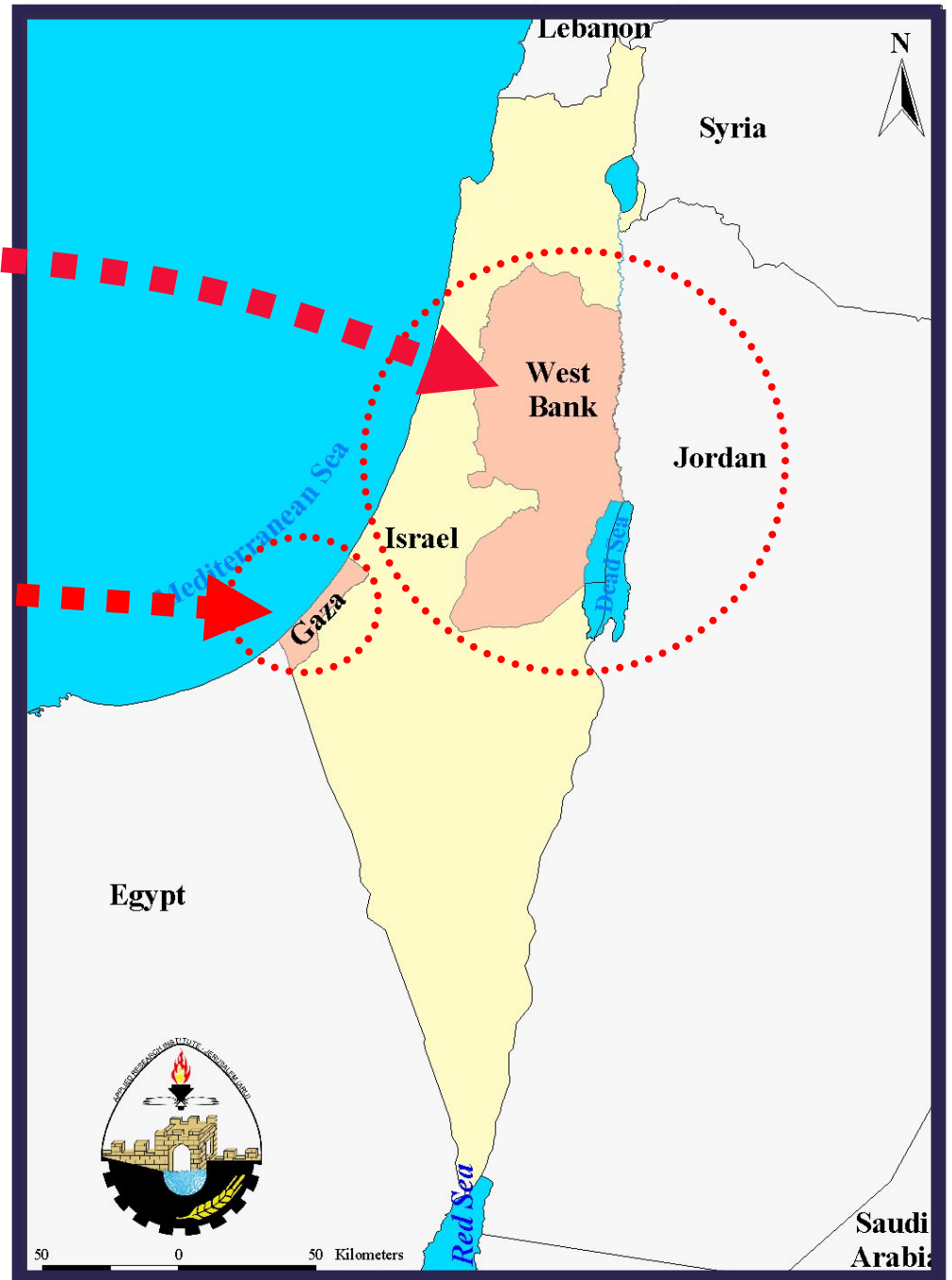
The West Bank

Area = 5885 km²

The Gaza Strip

Area = 365 km²

Both represent
22 % of
Mandate Palestine

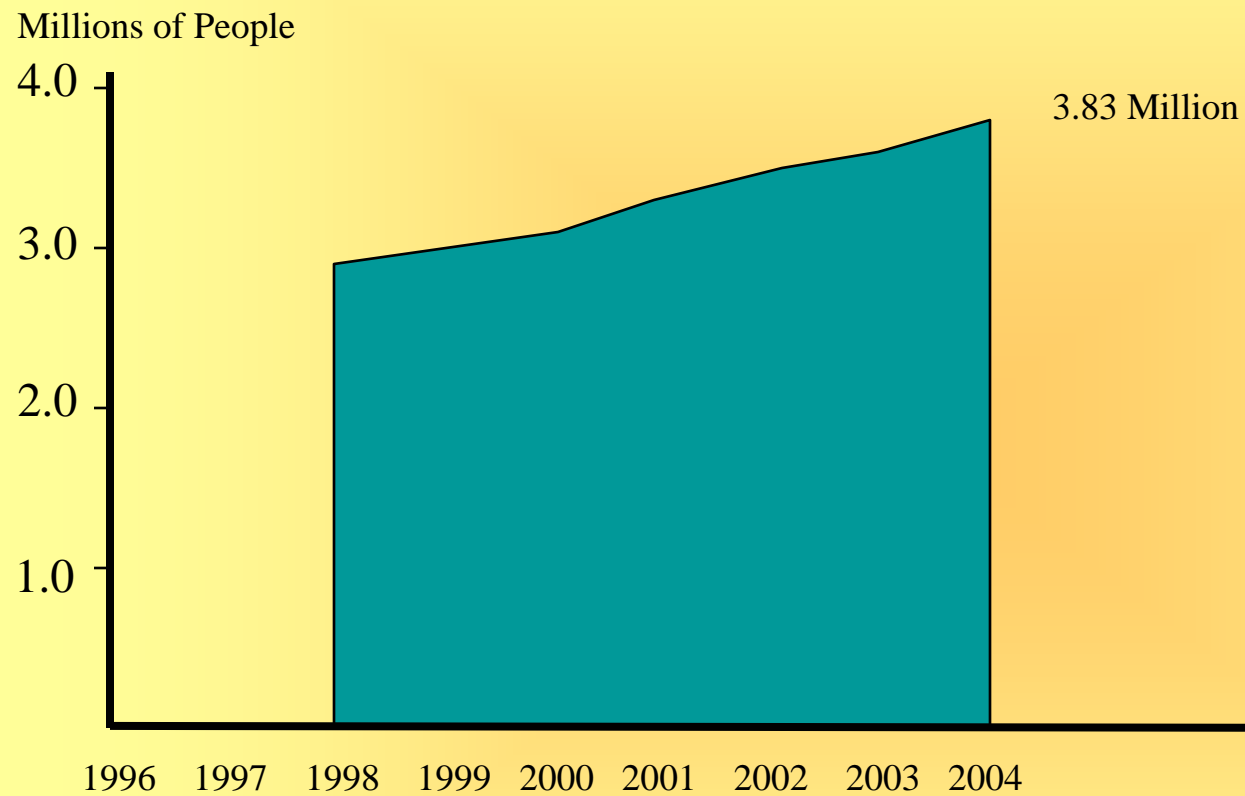


The People

- The Occupied Palestinian Territory of East Jerusalem, the West Bank, and Gaza Strip have a population of around 3.5 million.
- The natural growth rate is $> 4\%$.
- Half of the population is under the age of eighteen.
- The OPT would, under normal circumstances, be categorized as middle rather than low income.
- The Palestinian society is well-educated with a sizeable middle class, and a tradition of a strong and vibrant civil society.

Base Population Projection

**1997 PA Census and Projection
(1997 - 2004)**



Source: Palestine Central Bureau of Statistics 1997 Census and Projection (2)

The Palestinian workforce

- The total labor force in the Palestinian territory is 790 thousand persons in 2004.
- Before the Intifada, 160,000 Palestinians found employment in Israel.
- Remittances from these workers were estimated at 1.3 billion \$.
- Now, less than 20,000 Palestinians have work permits.
- 26.8 % of the labor force is unemployed and 6.4 % are underemployed.

The Palestinian Economy

- The Palestinian economy depends on remittances. **Industry and agriculture** contribute **7 and 12 %** to the GNP. **Tourism** was supposed to become the largest productive sector but has collapsed.
- The OPT imports from Israel four times as much as it exports to Israel.
- Israel set restrictions on the type of products that could be imported.
- The customs union with Israel and the dependency on remittances from Palestinians working in Israel, coupled with the lack of control of the PA 's borders and, with it, trade, has made the Palestinian economy vulnerable to Israeli constraints (**Distorted Economy**)
- The Paris Protocol formalized the Palestinian- Israeli economic relationship.
- Israel kept control of the levers of the Palestinian economy:
 - control of borders and ports of entry;
 - power of veto over certain imports; regulation of the movement of labour;
 - and the ability to withhold disbursement of taxes due to the PNA.

Economic dependency

- The strength of the Israeli economy led to its total domination in conditions of open market between the two economies.
- The collapse of the Palestinian economy has been the major cause of Palestinian suffering.
- Israel used the Palestinian economy as a lever through which it can exert pressure on the Palestinians.
- The economy has declined dramatically since the start of the Intifada.
- The Palestinian GDP declined from US \$ **4.9** billion in 2000 to US \$ **4,13** billion in 2004.
- Total investment over the same period has declined by **90%**.
- The World Bank estimated that **21 %** of the Palestinian population were poor on the eve of the Intifada , a number that increased to about **60%** by December 2002.
- Such a high level of economic decline usually leads to the complete dissolution of the government.
- Only donor support has prevented a humanitarian disaster.

Developmental Constraints

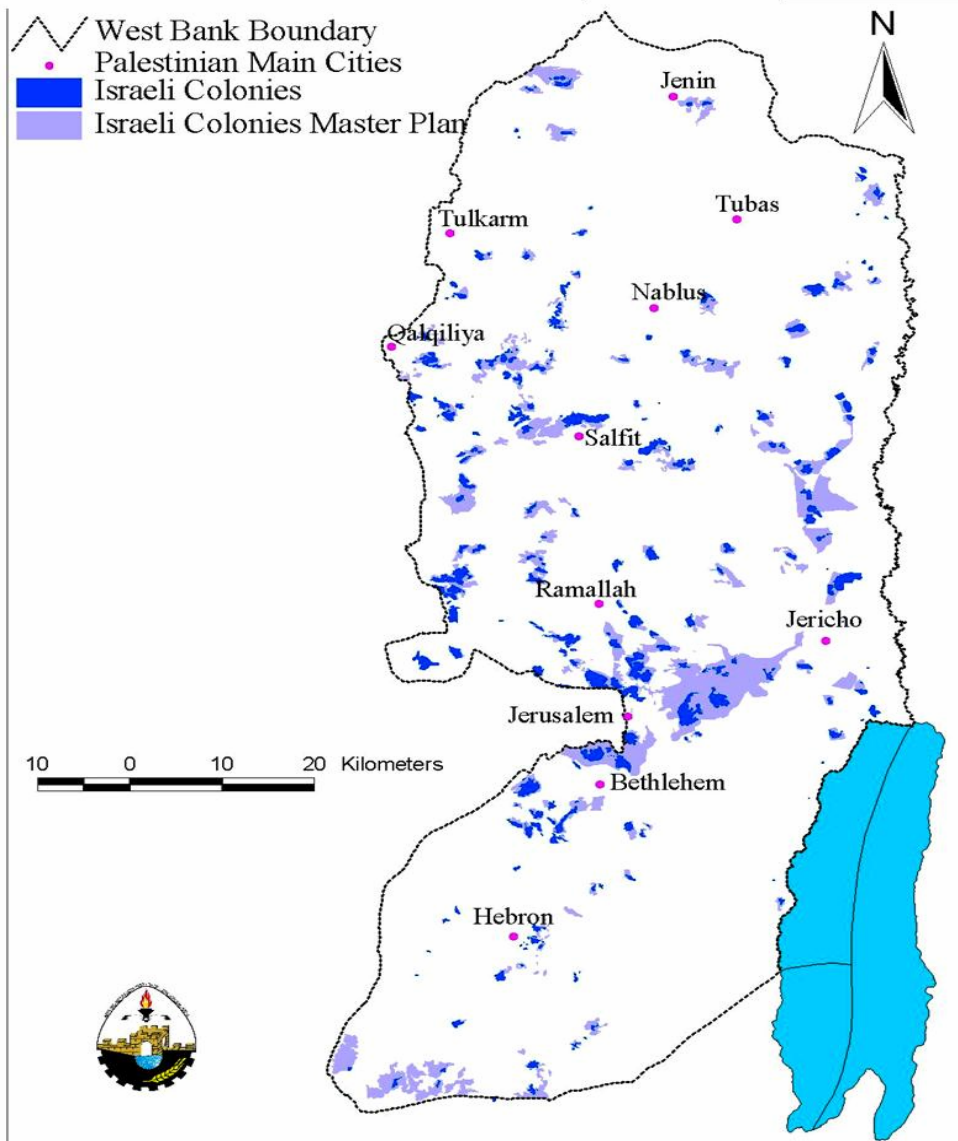
- Political
- Institutional and Legal
- Technical

The Effects of the Israeli Occupation Practices on the Palestinian Environment

- ***Impact on Land Use***
- ***Deforestation and uprooting of trees***
- ***Compartmentalization***
- ***Depletion of Water Resources***
- ***Deforestation and uprooting of trees***
- ***Desertification***
- ***Pollution Caused by Israeli Settlers***
- ***Relocation of Israeli Industries into the West Bank***
- ***Illegal Movement of Hazardous Waste from Israel to Palestine***
- ***Human Suffering (Poverty, isolation)***

Israeli Settlements in the West Bank

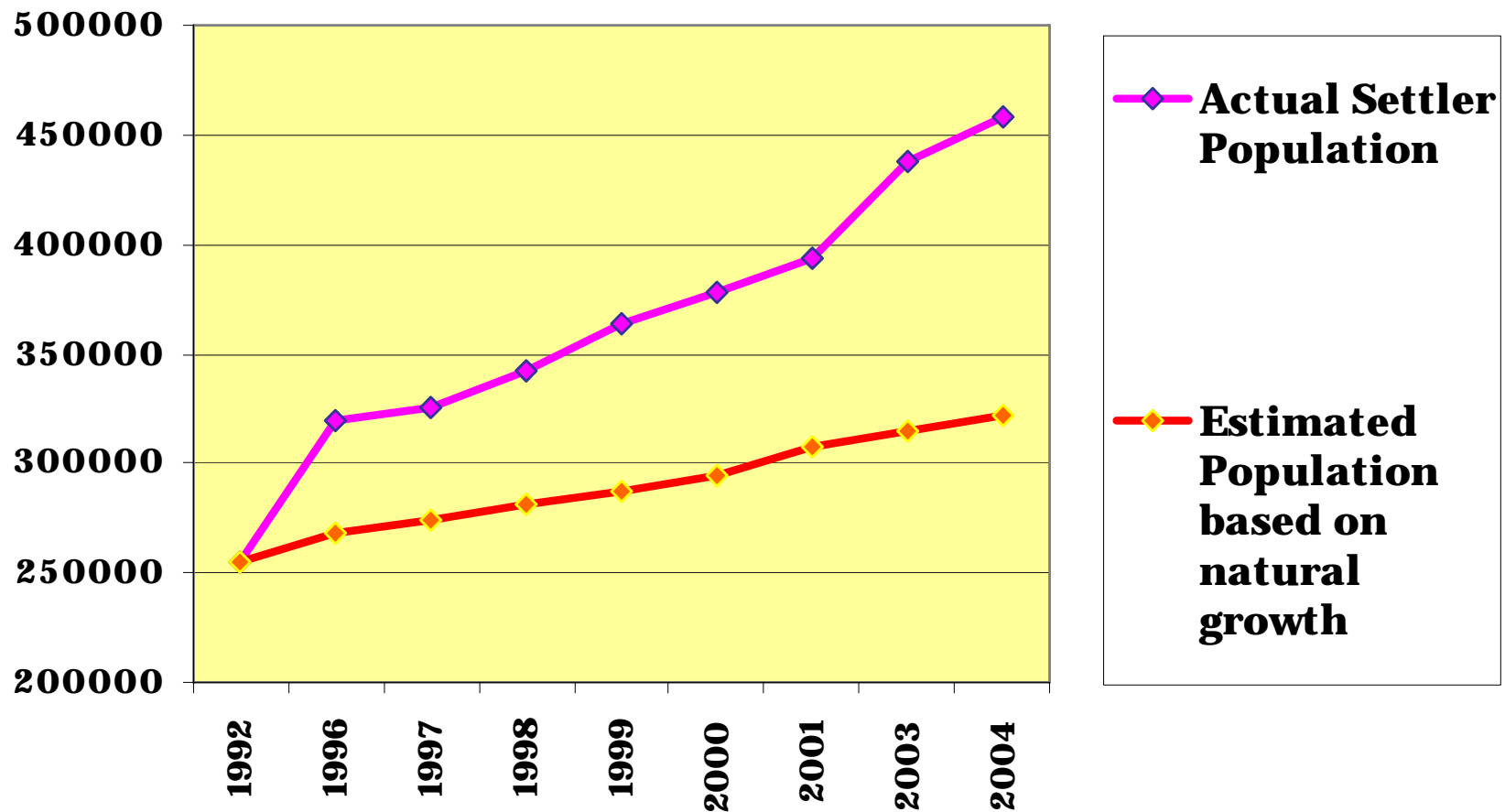
Israeli settlements master plans



Today, there are more than 450,000 Israeli settlers living in the Occupied Palestinian Territory of whom, **235000** are in East Jerusalem

The Myth of natural growth

Actual Settler Population and Growth Rates during the years 1992 & 2004



Abu Ghunaim Mountain
March 1997

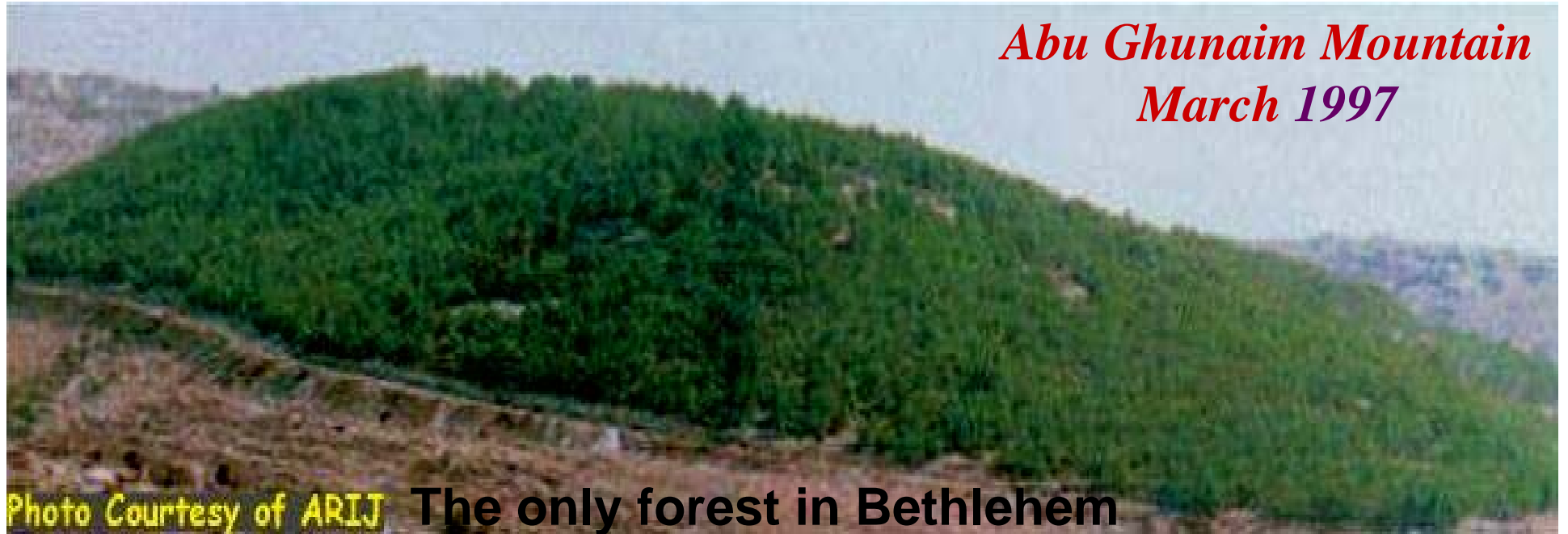


Photo Courtesy of ARIJ The only forest in Bethlehem

Abu Ghunaim mountain
January 2001

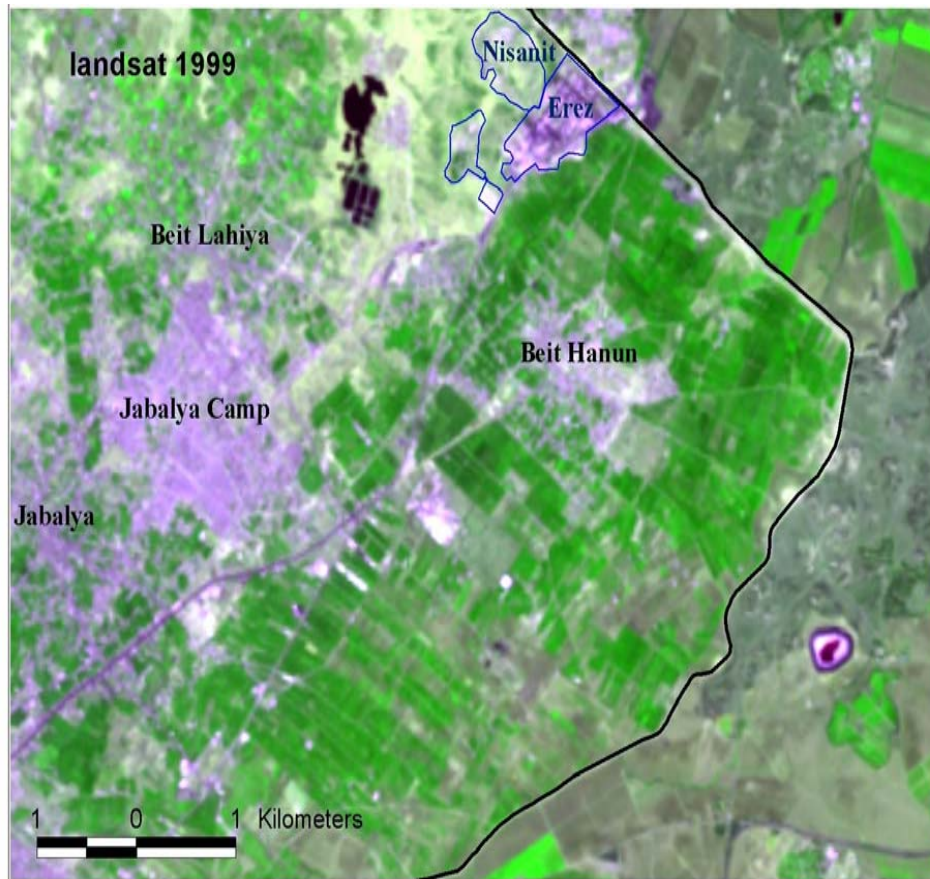


New Israeli
Colony of
Har Homa

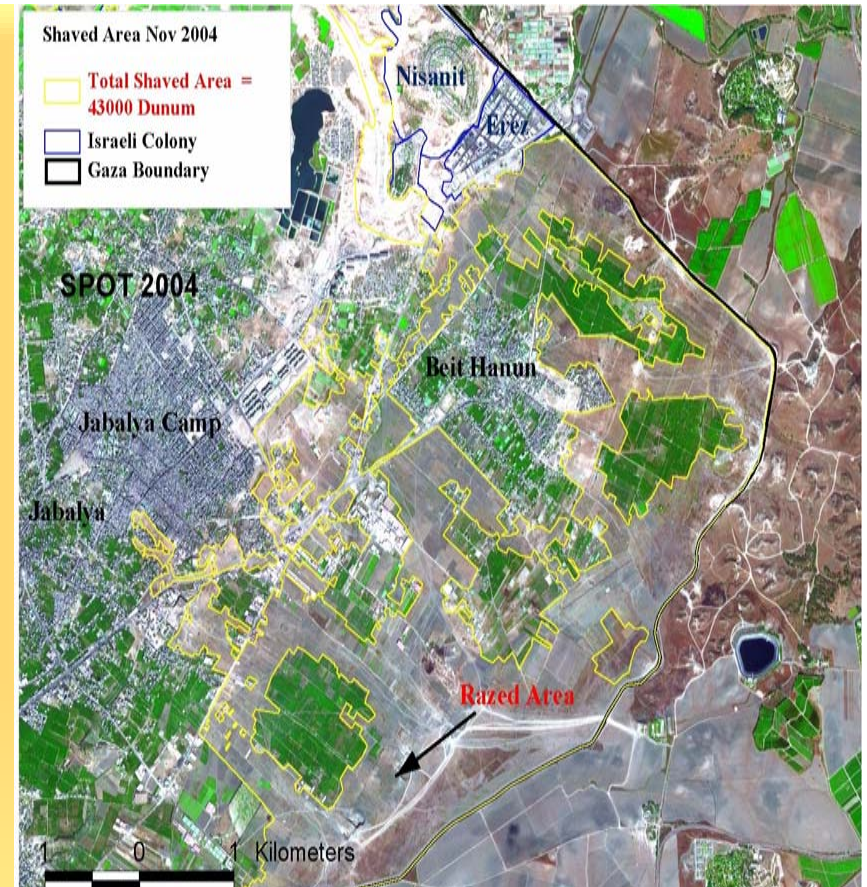
Photo courtesy of ARIJ



Degradation of the Palestinian Environment



1999

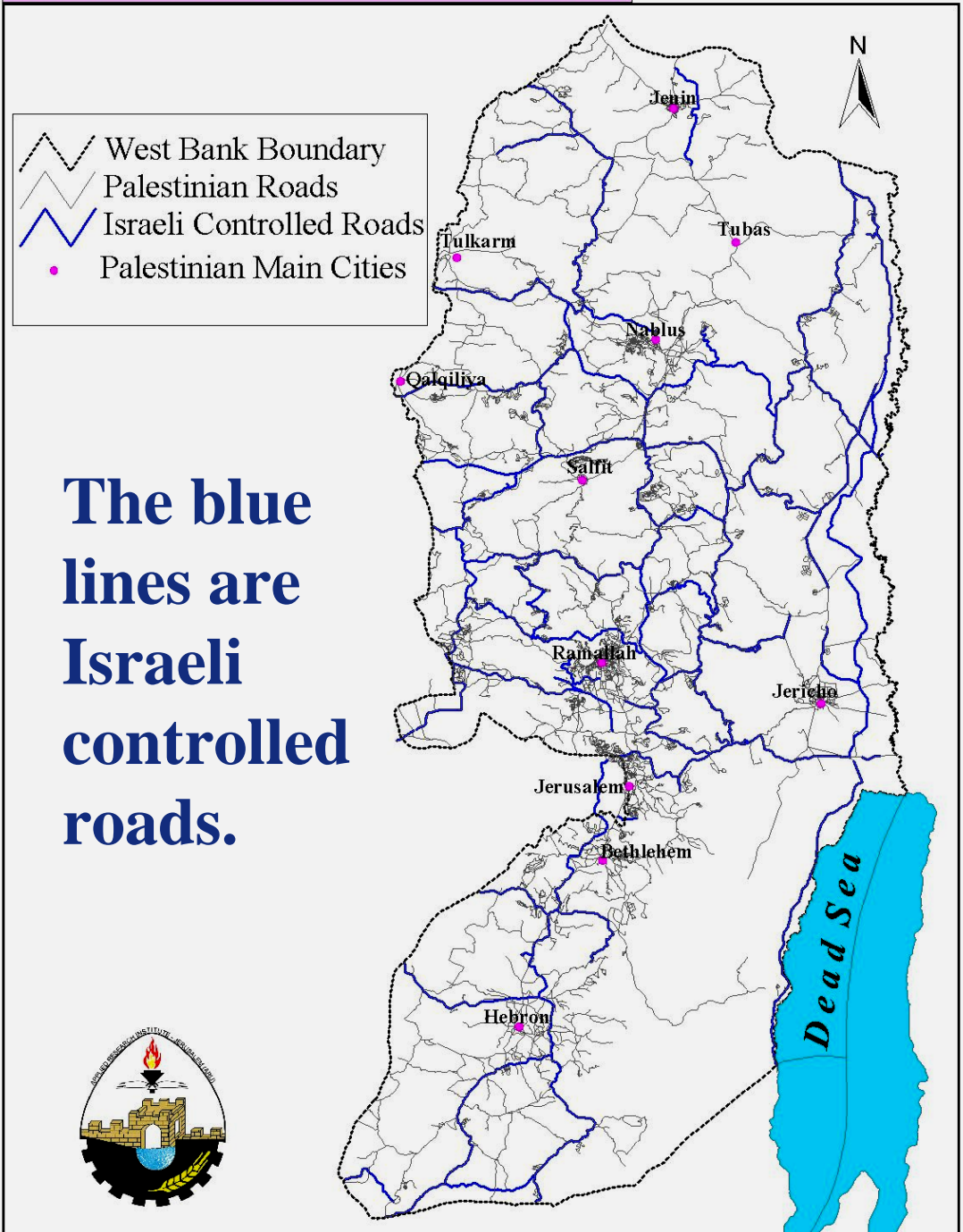


2004

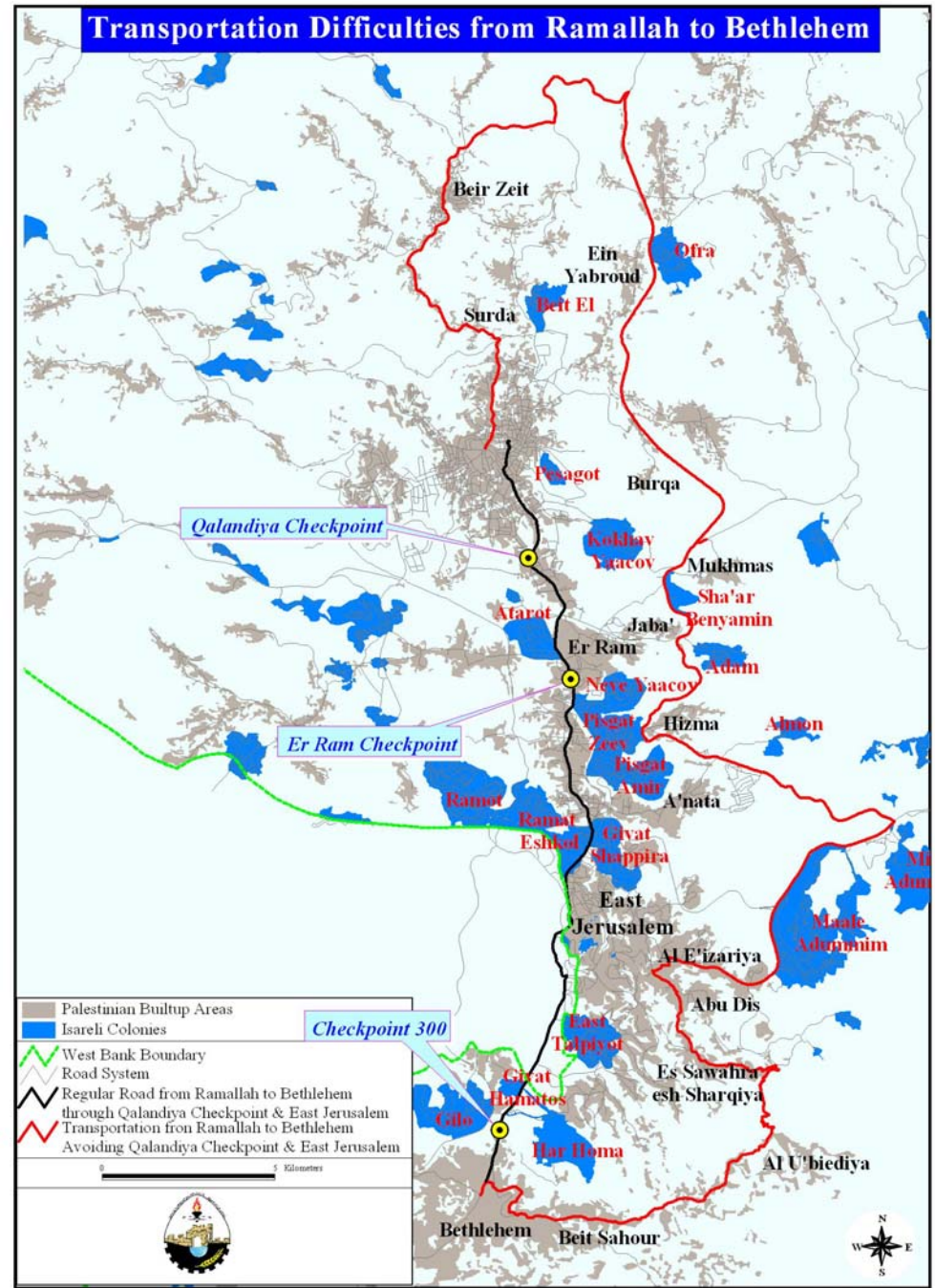
Loss of livelihood

There are **734 kilometers** of roads **WITHIN** West Bank on which Palestinians are generally **NOT** permitted to travel.

Israeli Controlled Roads in the West Bank



Bethlehem to Ramallah

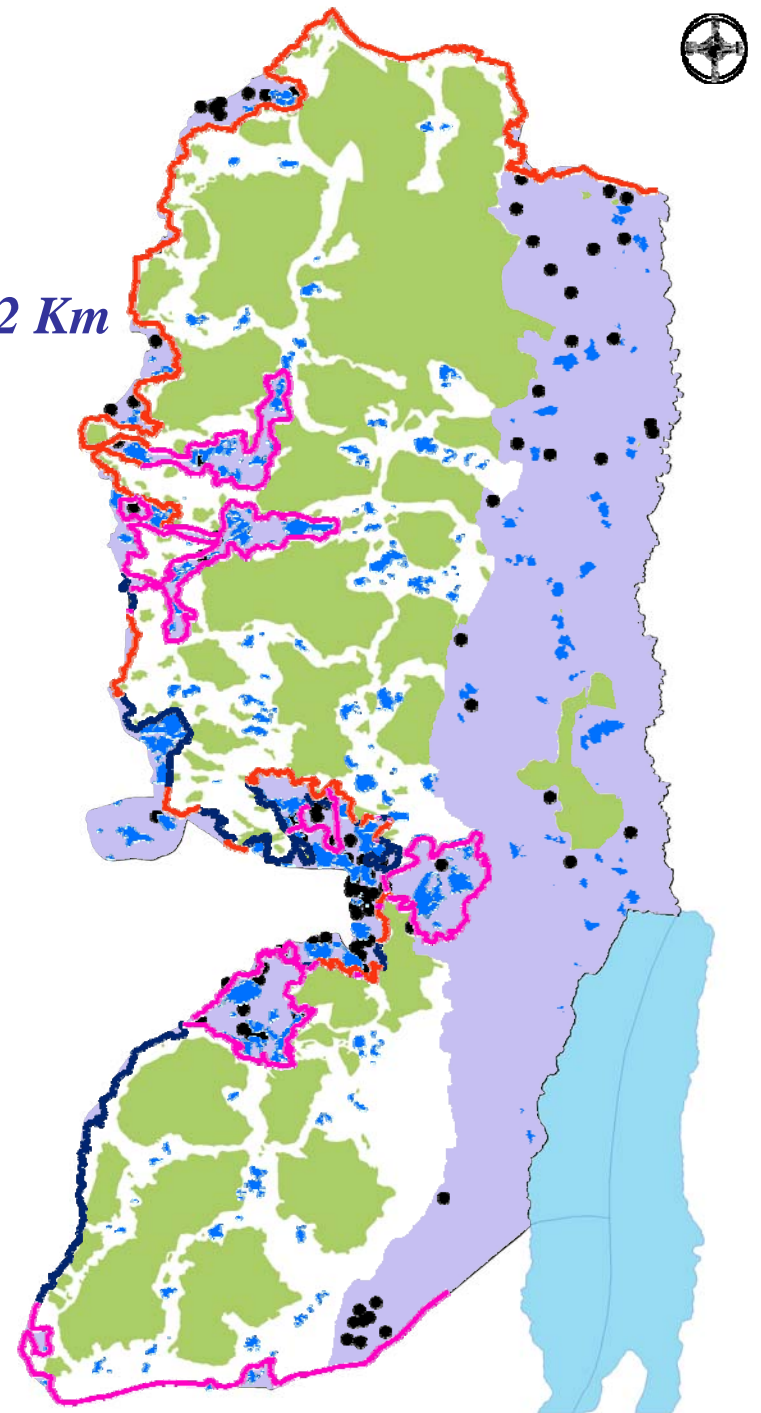


The Segregation Plan

99 Israeli settlements, with a population of approximately 450,000, will be isolated in the Western Segregation Zone. The Israeli Cabinet approved changes to the Segregation Plan on April 30th 2006. The new construction is prohibited. 252 sq. km of the West Bank (4.4%) will become communities, including more than 42,000 people, will be isolated in the Western Segregation Zone. Eastern Segregation Zone.

This Area is Classified by the Israeli Army as **Seam Zone**. Entrance to this Zone is restricted to inhabitants that prove that they are permanent residents or to people who provide sufficient papers proving land ownership.

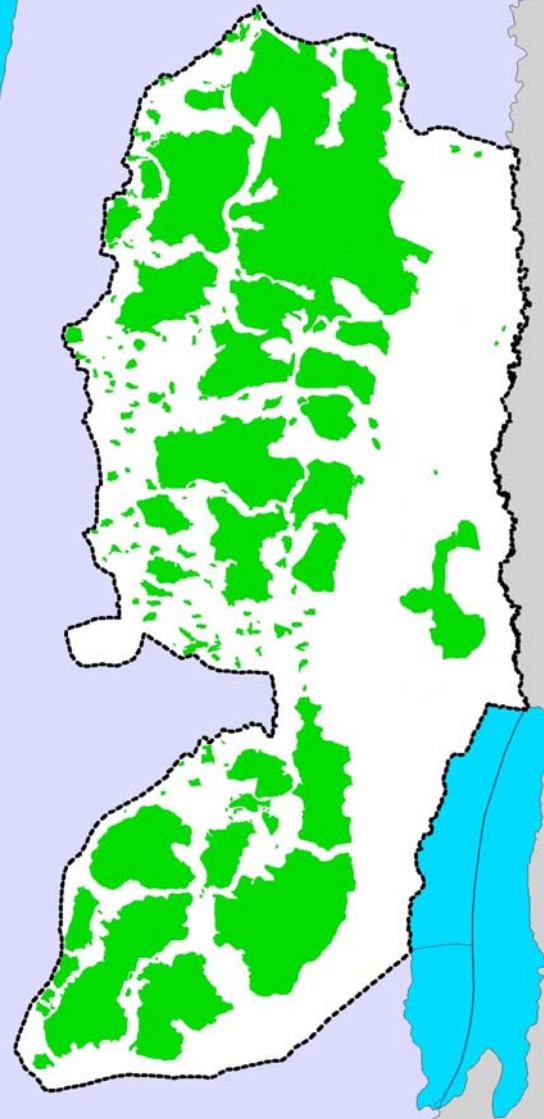
Existing = 243 Km
 Under Construction = 122 Km
 Planned = 337 Km
 Total length 702 km



[illegible]

The buffer zone in Northern Gaza is 8 Km², however, it is additional to the 53 Km² Israeli security belt wrapped around Gaza eastern side

**State or No state
(UPG)**

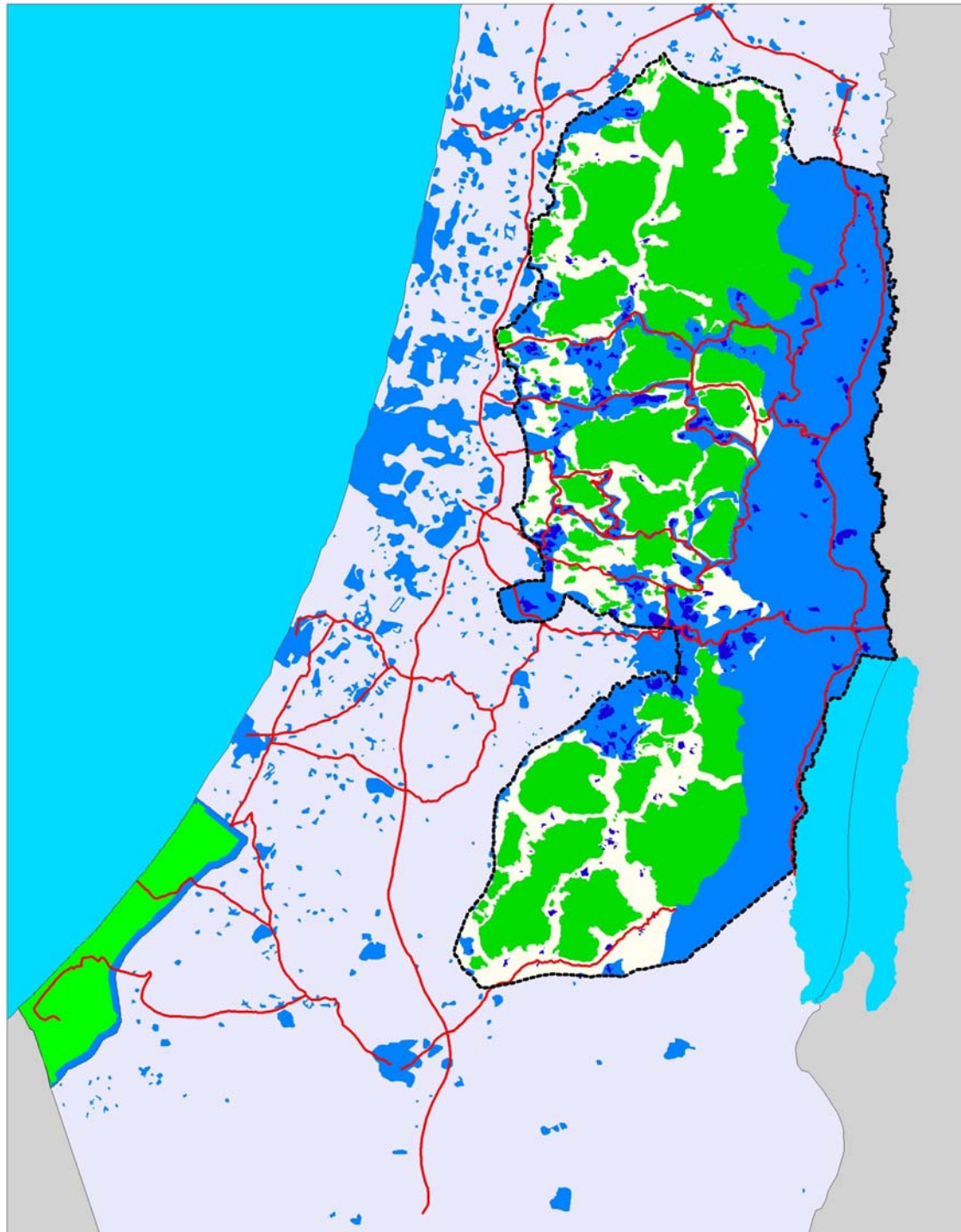


“A state
exists
chiefly in
the hearts
and minds
of its
people; if
they do not
believe it is
there, no
logical
exercise
will bring it
to life.”

Israel intends to consolidate 45 % of the West Bank (Judea and Samaria) and integrate it into Israel.



Two States
living side
by side but
**one inside
the other**



Area A & B
and Nature
reserves

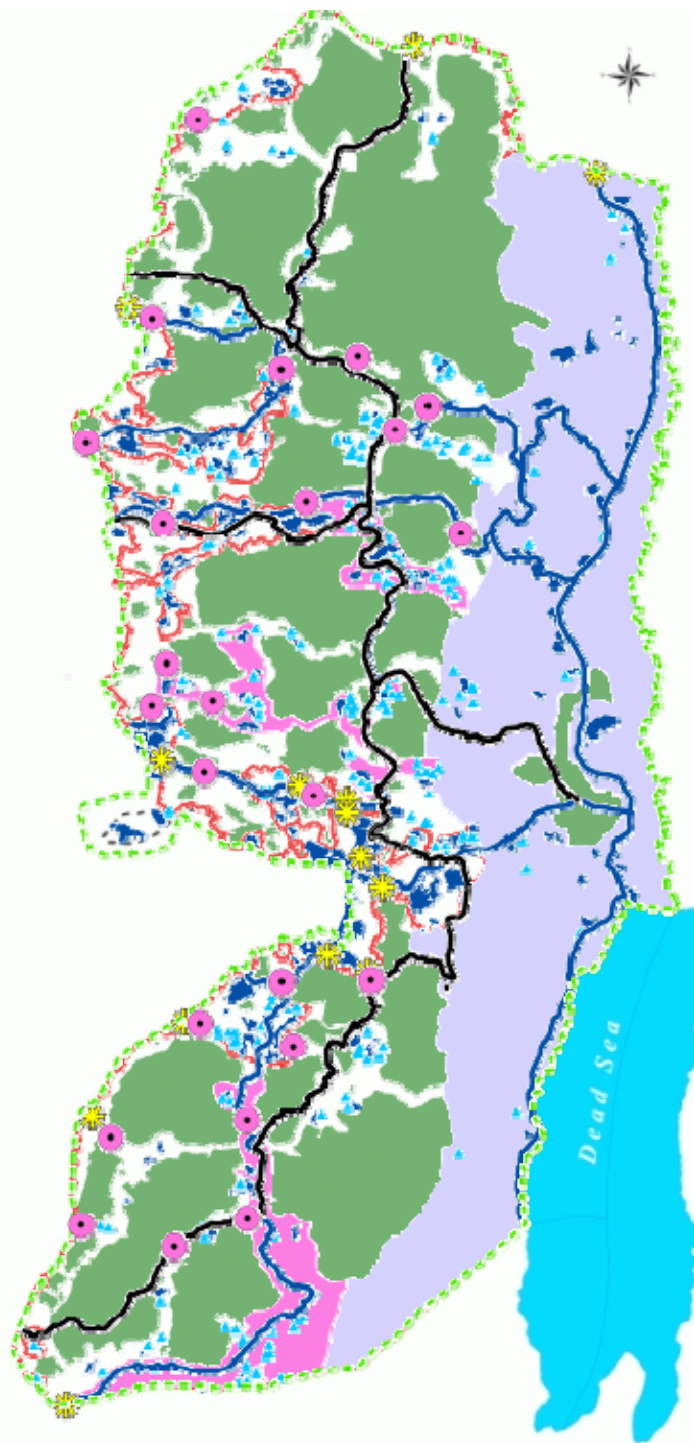
Western
Segregation
Zone

Eastern
Segregation
Zone

Projected
Israeli
Corridors

Israeli
Settlements

Israeli
Outposts



Israeli
Bypass
roads

Alternative
Palestinian
roads

Terminals

Tunnels

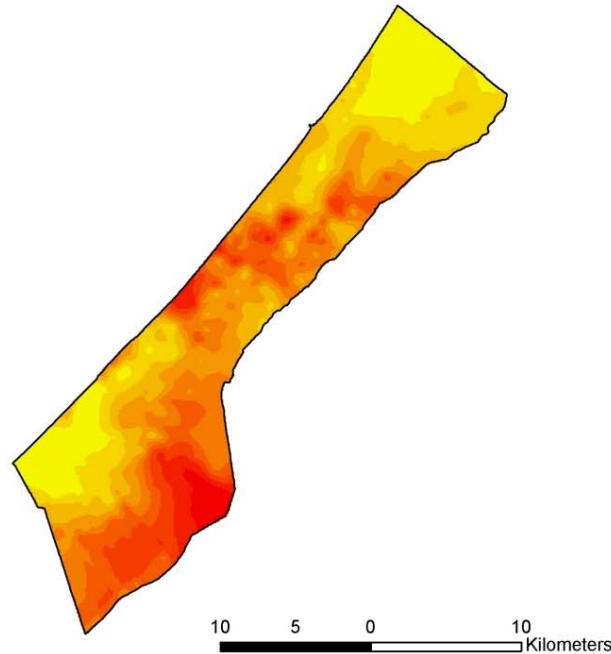
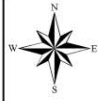
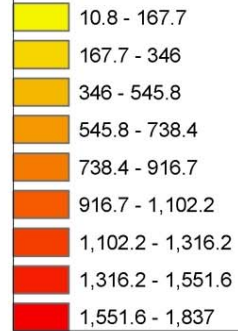
Depletion of Water Resources

- ❖ **Palestinians are denied their historic right to the Jordan River waters.**
- ❖ **Israel is currently utilizing more than 82% of the Palestinian groundwater resources by piping this resource to the illegal colonies and into Israel proper and thus inducing water scarcity in the area.**
- ❖ **In Gaza, Palestinians are forced to over-pump the shallow coastal aquifer leading to sea water intrusion and consequently, deteriorating water quality.**
- ❖ **More than 220 Palestinian communities (25% of the total population) is not served by the public water network.**

Water Quality in the Gaza Strip

Chloride Concentration

mg/l

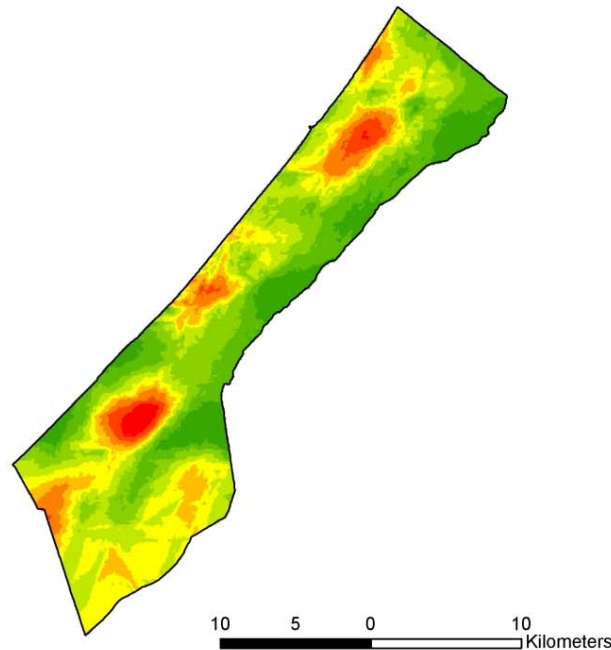
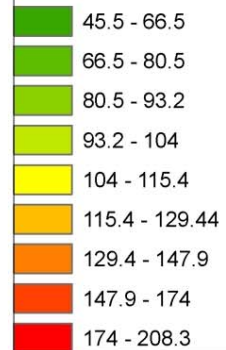


Water Quality

← Chloride concentration

Nitrate Concentration

mg/l

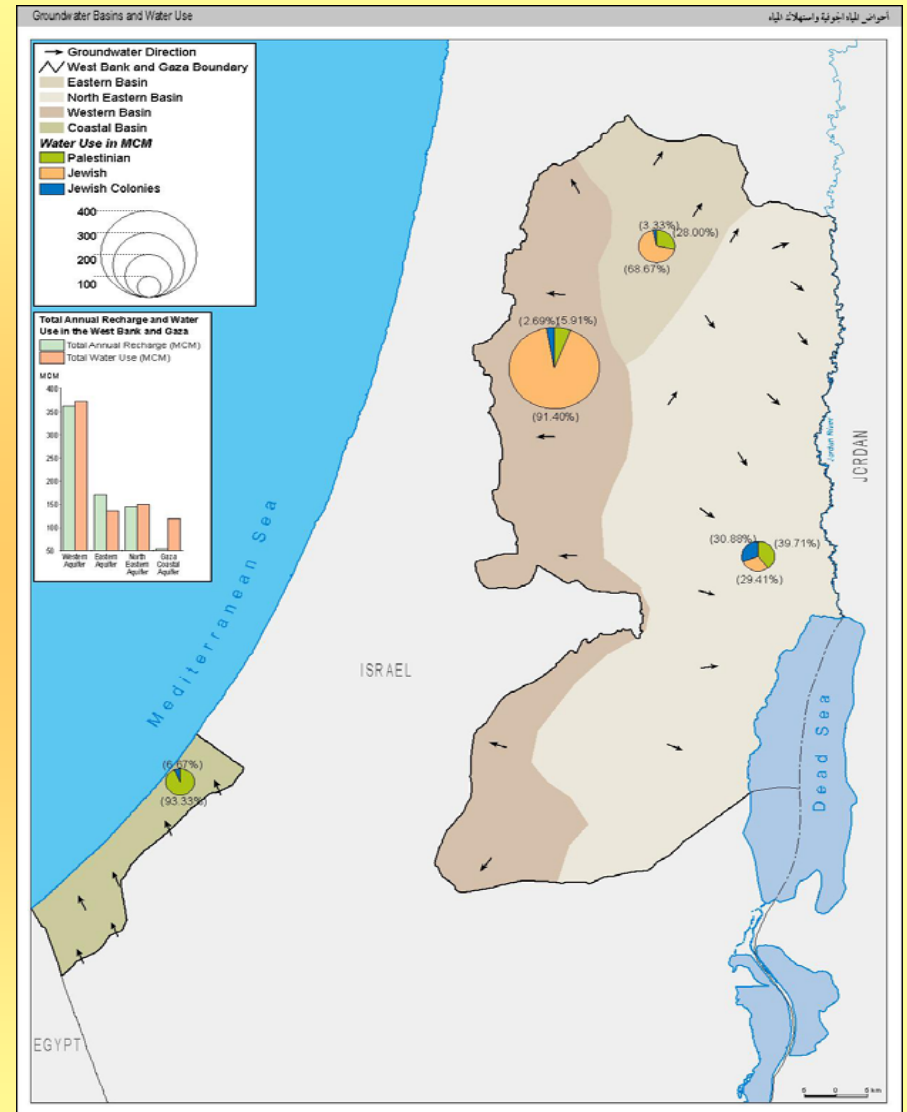


← Nitrate Concentration



- The Gaza coastal aquifer has an annual safe yield of 55 MCM but is over-extracted at a rate of 120 MCM which led to sea water intrusion.
- 95 % of water in Gaza is not suitable for domestic consumption.

- The *Western Basin* is the largest and has an annual safe yield of 362 MCM. Palestinians consume only about **7.5%** of its safe yield.
- The *Northeastern Basin* has an annual safe yield of 145 MCM. Palestinians consume about **18%** of its safe yield.
- The *Eastern Basin* has an annual safe yield of 172 MCM. Palestinians are utilizing **50%** of the waters of this basin.
- **485:115**



Israeli Palestinian Water Agreement (Oslo II)

- Israel **recognizes the Palestinian water rights** in the West Bank. These rights will be negotiated in the permanent status negotiations and settled in the Permanent Status Agreement relating to the various water resources.
- Israel offered the Palestinians **28.6 mcm/year** to meet their immediate needs during the interim period to be extracted mostly from the Eastern aquifer.
- The future needs of the Palestinians in the West Bank were estimated to be between **70 – 80 MCM/Yr.**

Palestinians fear of a dry peace

- There are serious doubts that Palestinians can extract the water quantities specified in the agreement from the Eastern aquifer. There is an average annual drop of more than **25 meters** in the water table level that is raising alarm about the sustainable yield of this aquifer. It is believed that the maximum amount that could be extracted is **15 MCM**.
- No serious negotiations are taking place on Palestinian water rights.

Pollution Caused by Settlers

- The 450,000 Israeli settlers living in the West Bank, including East Jerusalem, generate 500 tons/day.
- Around 80% of the solid waste generated by Israeli settlers living in the West Bank is dumped at Palestinian lands and dumping sites, whereas the remaining 20% is dumped at dumping site located inside Israel

❖ **The Pressure Added on the Palestinian Environment from the Wastewater Management Practices in the Israeli settlements**

The 450,000 Israeli settlers living in the West Bank, including East Jerusalem, generate annually **37.6** MCM of wastewater. This can be compared to that generated by Palestinians living in the West Bank which is **29.5** MCM.

Most of the generated wastewater in the Israeli settlements is discharged untreated according to one of the following disposal methods:

- Wastewater discharged into the nearby wadis and Palestinian lands
- Wastewater disposed of through the local Palestinian sewerage System.
- Wastewater pumped to Israel over the Green Line.

❖ **The Pressure Added on the Palestinian Environment from the Industrial Waste Management Practices in the Israeli Settlements & Industrial Zones**

There are several Israeli industrial zones in the different districts of West Bank. Israeli industries are also found within settlements.

The main industries are:

- Textile dying
- Leather tanning
- Chemical industries
- Electroplating
- Plastics
- Aluminum

The generated industrial wastewater is discharged untreated into the nearby Palestinian Lands (Case study: Barqan Israeli industrial zone)

The generated solid waste is often collected and dumped at areas near Palestinian localities.

Wastewater Stream Flowing from Barqan Israeli Industrial Zone in Salfit District



Barqan Industrial Zone

Industrial wastewater stream



❖ **Illegal Movement of Hazardous Waste from Israel to the Palestinian Territories**

The Palestinian Authority has discovered several cases related to the illegal transfer of hazardous waste from Israel to Palestinians areas:

Israel has illegally transferred 2-3 trucks filled with toxic and hazardous waste to two locations in the northern part of the West Bank.

The first location is near the eastern border of Tulkarm municipality.

The second dumping site is located in close proximity to the residential area of A'zoun municipality in Qalqiliya District.

The transfer of 230 barrels containing hazardous and toxic wastes generated from a paint factory located in the Israeli settlement "Ganim" into Umm Al Tut Village in Jenin District.

The illegal movement of hazardous waste is banned by the Basel Convention, to which Israel is a party and should comply with it.

Toxic Waste Buried Near Tulkarm



Developmental Assistance

- The Palestinians are one of the **most heavily - aided populations** in the world. A large part of PNA income is dependent upon donor contributions.
- GDP per person: **\$934**-----Foreign aid per person: **\$469**
- Donor assistance is plainly unable to solve the problems in the OPT or improve living conditions.
- Food aid has been criticized for creating a **dependency** culture and undermining local food production.
- Easing the closure restrictions and eventually ending the occupation are the only way to do this. The World Bank reports that **removing the " access controls" imposed by the Israelis would increase real GDP by 21% , whereas a doubling of development assistance — without easing closure —would only reduce the number of people living in poverty by 7% by the end of 2004.**
- Donors face a dilemma: **are they doing little more than support the Israeli occupation by providing assistance which is the occupier's responsibility to provide?**

“De-Development”

- Development and politics in the OPT are inseparably intertwined.
- Sovereignty over natural resources is one of the key elements for any nation to achieve sustainable development.
- Palestinians now have limited access to a large portion of the natural resources in the West Bank and Gaza strip. Areas such as the Jordan Valley, and the Eastern Slopes are considered as major natural resources of the region.
- Population densities in Palestine are high when taking into consideration the strict limitations on land use imposed by the Israeli Authorities .
- The division of Palestine’s land into areas A, B, and C has produced two different and parallel planning schemes: one Israeli, to serve the Israeli settlers living in the West Bank and Gaza Strip, and the other Palestinian, to serve the Palestinian people.
- Palestinian decision-makers face the major dilemma of how to initiate sustainable development strategies given the uncertainties related to the eventual outcomes of the final status negotiations.

Municipal Solid Waste Management

❖ Solid waste collection services

Under non-conflict conditions, the solid waste collection services cover

67% of the total population in the West Bank

95% of the total population in Gaza Strip

❖ Solid waste disposal and treatment

In the West Bank:

The collected waste, approximately 380,988 tons/year, is dumped in
189 open and uncontrolled dumping sites

The remaining waste, approximately 213,896 tons/year, is dumped and
burnt on roadsides and vacant lands

Most of the dumping sites were not designed as sanitary landfills.

Open burning of collected solid waste is practiced in all the open dumping sites except Abu Dies dumping site (Jerusalem District) and Nablus dumping site (Nablus District) where the waste is landfilled.

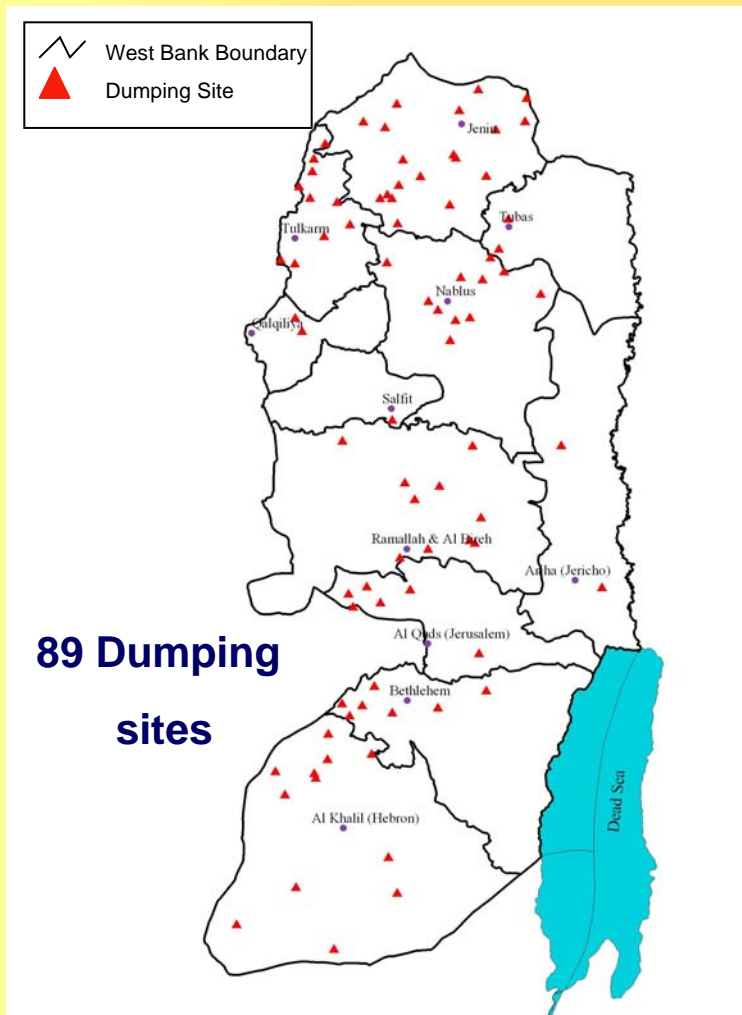
One of the open dumping sites that are located in Hebron District, Dura Dumping Site, was rehabilitated into a sanitary landfill in October 2003.

In Gaza Strip:

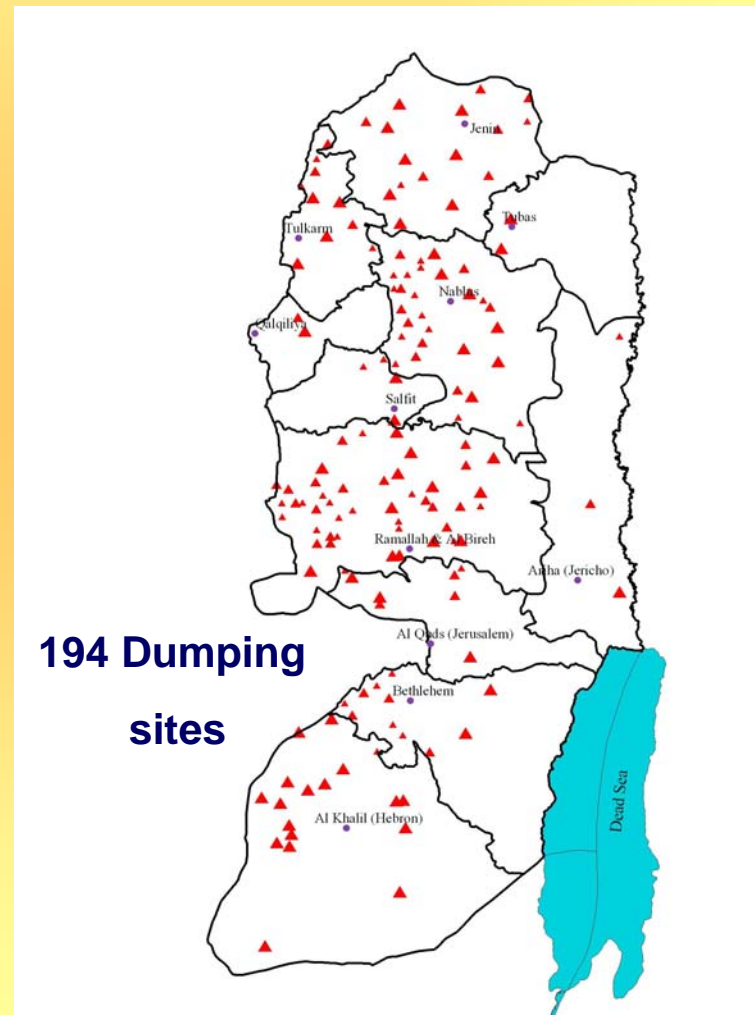
The collected waste, approximately 247,118 ton/yr, is disposed off in three sanitary landfills, which are Gaza, Deir Al Balah and Rafah landfills.

Dumping Sites in the West Bank

Prior to the Second Intifada



During the Second Intifada



Municipal Wastewater Management

- **In the West Bank:**
 - An annual wastewater volume of 29.5 MCM is generated
 - Sewage networks serve around 28% of the total population
- **In Gaza Strip:**
 - An annual wastewater volume of 21.4 MCM is generated
 - sewage networks serve around 66% of the total population
- The remaining population uses cesspits for wastewater disposal.

Major Wastewater Streams in the West Bank

The major wastewater streams flow in:

- Wadi Zeimar
- Wadi El Sajour
- Wadi Betunia
- Wadi En Nar
- Wadi As Samen

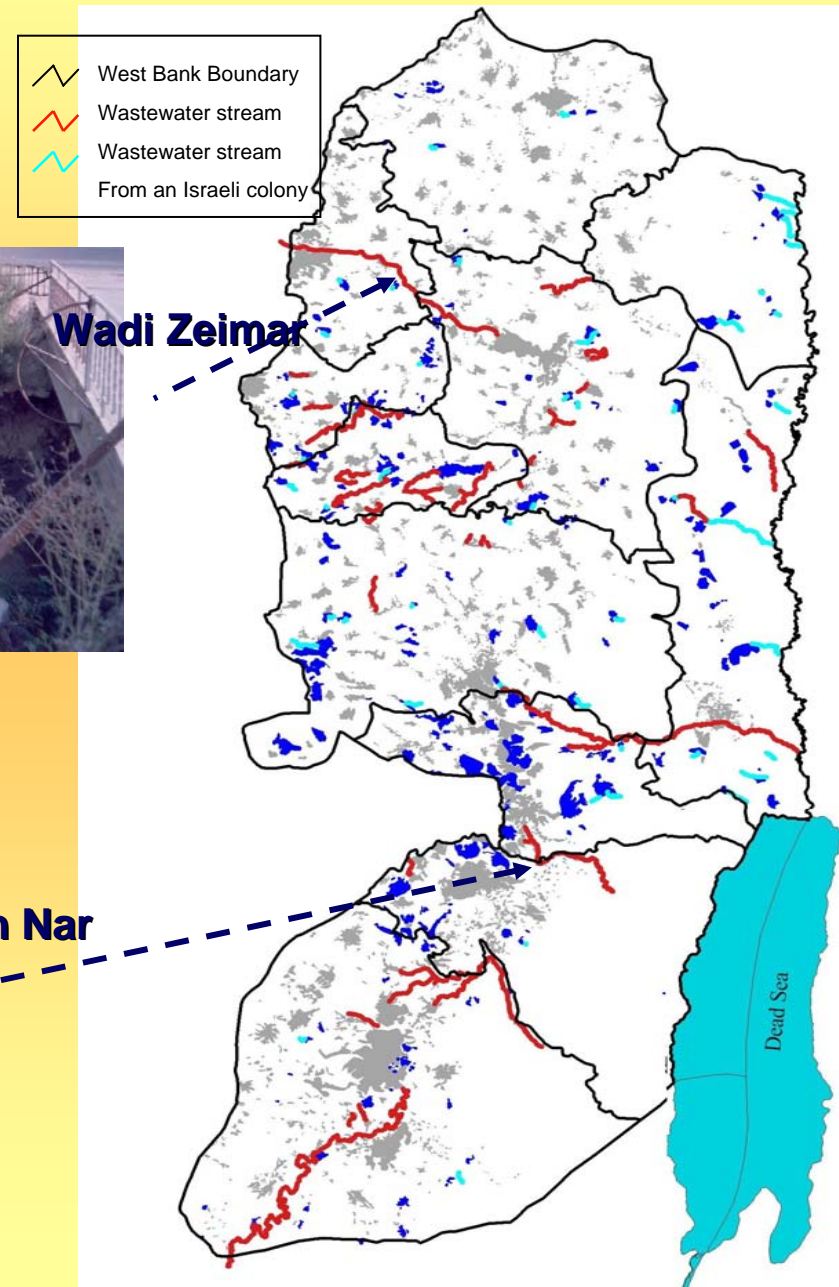


Wadi Zeimar



Wadi En Nar

It receives **17.6 MCM** of untreated wastewater annually from Jerusalem City.



The developmental paradox in Palestine

- **Sovereignty** over natural resources is one of the key elements for any nation to achieve sustainable development.
- **Palestinians now have limited access** to a large portion of the natural resources in the West Bank and Gaza strip. Areas such as the Jordan Valley, and the Eastern Slopes are considered as major natural resources of the region.
- **Population densities in Palestine are high** when taking into consideration the strict limitations on land use imposed by the Israeli Authorities .
- The division of Palestine's land into areas A, B, and C has produced **two different and parallel planning schemes**: one Israeli, to serve the Israeli settlers living in the West Bank and Gaza Strip, and the other Palestinian, to serve the Palestinian people.
- Palestinian decision-makers do however face the major dilemma of **how to initiate sustainable development strategies given the uncertainties** related to the eventual outcomes of the final status negotiations.

Environmental Justice

Comparison between NRM indicators in Israel and Palestine

<u>Indicator</u>	<u>Israel</u>	<u>Palestine</u>	<u>Ratio</u>
Population (millions)	6	3	2:1
Total area (million dunum)	21	6	3.5 : 1
Accessible area (m dunum)	23.4	3.6	7:1
Irrigated area(m dunums)	2.18	0.2	10.9 : 1
Contribution of Ag. to GDP	1.8 %	12 %	1: 7
Water consumption(MCM)	1960	286	6.9:1

2) In the West Bank:

- More than 220 Palestinian communities (25% of the total population) is not served by the public water network. They use cisterns to collect the rainwater and they buy water tankers at high prices.
- Most of the Palestinian communities suffer from water shortage in the summer season.
- The water supply problem has been exacerbated after the outbreak of the second Intifada:

Destruction of the main water lines during the incursion periods

The imposition of harsh closure policies on the Palestinian communities restricted the movement of the water tankers.

Major Wastewater Streams in the West Bank

The major wastewater streams flow in:

- Wadi Zeimar
- Wadi El Sajour
- Wadi Betunia
- Wadi En Nar
- Wadi As Samen

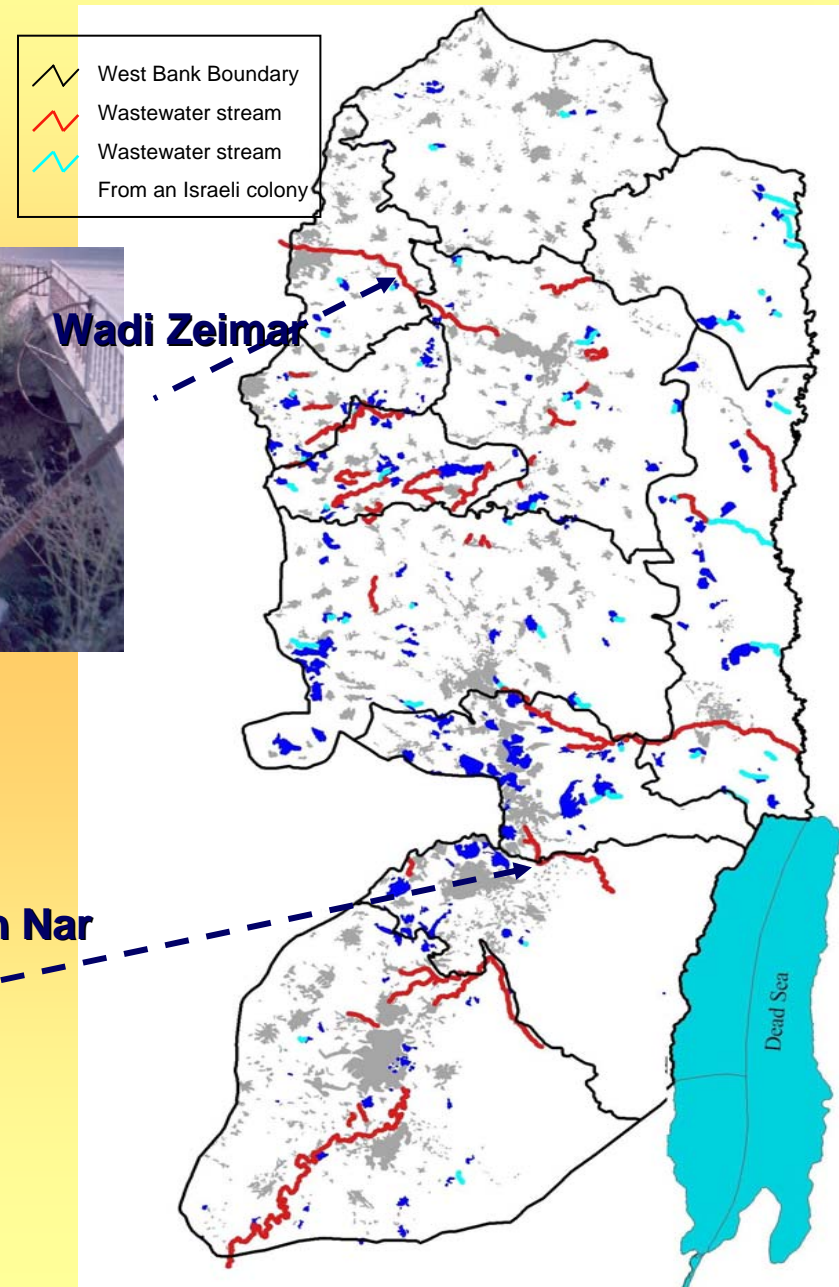


Wadi Zeimar



Wadi En Nar

It receives **17.6 MCM** of untreated wastewater annually from Jerusalem City.

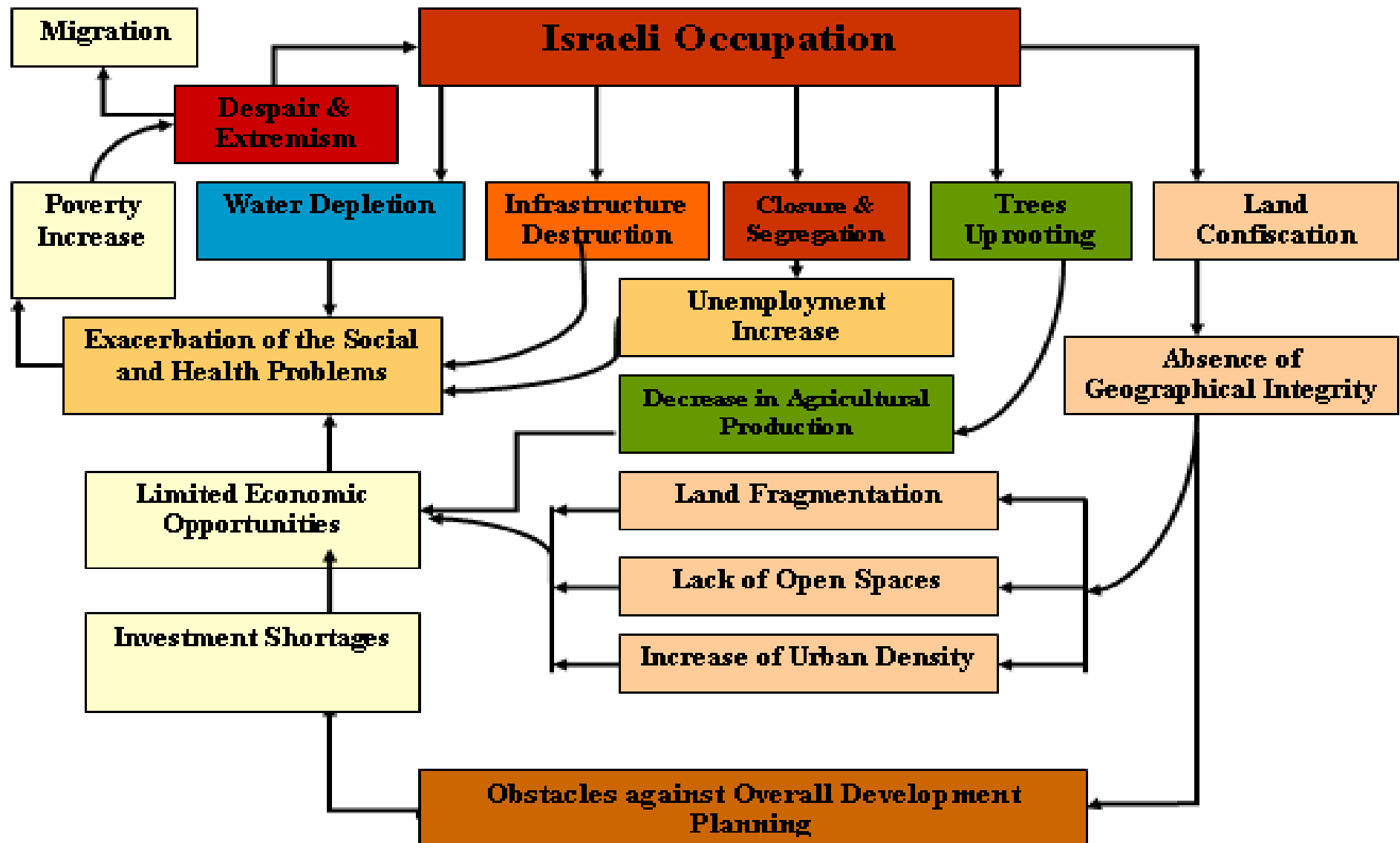


Conclusion

Sustainable Development Plans that should be prepared by the Palestinian Authority are faced with political obstacles imposed by the Israeli-Palestinian conflict.

Palestine represents a unique case in the World as it has been subjected to two contradictory planning schemes that aimed at exploiting its natural resources to serve two nations: the Palestinians who are landowners and the Israelis who are occupiers and having the controlling power in the area. Accordingly, it represents a striking example for the organic relationship that exists between environmental degradation and political conflict.

The Organic Relationship that Exists Between Environmental Degradation in the Palestinian Territories and the Israeli-Palestinian Political Conflict



Viability vs Sustainability

- The peace process between Israel and the PLO envisaged the establishment of a viable, independent Palestinian state as final resolution of the Israeli-Palestinian conflict. However, after ten years of negotiations the Palestinians were unable to gain control over more than 18% of the Palestinian territories, while other areas remained under partly or complete Israeli control.
- An independent Palestinian state will face many challenges. Population growth, the return of refugees and industrialization require, *inter alia*, a sufficient resource base, job opportunities and favorable political conditions so as to achieve viability.
- While economic viability determines the potential of a state to provide living standards that meet the expectations of its members, it does not present an overall guideline for a durable and environmentally sound, socioeconomic development.
- A state could also do well for a while receiving high amounts of foreign aid, but if it does not invest the funds soundly it might lose its viability when foreign aid declines.
- The central questions will be how economic viability can be achieved and how viability can be sustained over the long run.

Viability vs Sustainability

- The continuation and escalation of the conflict moreover threatens the ability of future generations in the region to meet their needs.
- The state of the environment, most alarmingly water, open space and waste water situation worsened severely during decades of conflict and occupation.
- Decision making has been guided primarily by political-strategic considerations while economic- and environmental necessities have too often been ignored.
- In the long run the destruction, excessive overuse and mismanagement of resources will have disastrous effects until, eventually, agriculture, tourism, and industry will lose their potential and a fledgling Palestinian state will lose its ability to exist and develop.