

# **Agricultural Development in the Occupied Palestinian Territories**

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Status and Policy  
Recommendations for  
Poverty Reduction

a paper submitted For

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**Nedal Zahran**

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## **Dedication**

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**For her help, support and patience  
to Rafif.**

# Abstract

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Agricultural development is seen as a crucial part of poverty reduction strategies. In the Occupied Palestinian Territories where poverty has reached record levels since the latest Israeli invasions, agricultural development can serve the Palestinian economy by lifting it from the cycle of poverty, underdevelopment and dependency. This paper devises a theoretical framework for studying the status of agricultural development in the Occupied Palestinian Territories. It then analyses the current situation in order to recommend specific policies for the development of the agricultural sector in the territories in a manner that will ensure equitable distribution of the benefits of growth. A set of policy recommendations relating to water management, land, markets, research and extension services, access to finance and gender related issues are suggested in light of the analysis. As is usually the case in violent conflicts, planning becomes difficult due to loss of certainty and material damage due military activity. In the Occupied Palestinian Territories this takes another weight as Israel is deliberately involved in the destruction of any Palestinian development project.

However, many of these recommendations do not need Israeli consent and hence are implementable can can yield the desired outcomes, provided the political will to apply them.

Poverty is largely seen as a rural phenomenon. This implies that agricultural development has a central role to play in the fight against poverty. Growth in the agricultural sector is also seen to have more redistributive effects than growth in any other sector. Recent research indicates that a 1% increase in agricultural production can reduce the percentage of people living under US\$1 per day by as much as 1.2% (DFID 2003:1).

In the Occupied Palestinian Territories, poverty has reached alarming levels, especially after a series of Israeli attacks which climaxed in 2002 by a complete invasion of the West Bank. The total population of the Occupied Palestinian territories at the end of 2004 reached 3.7 million Palestinians. At the end of the same year 26% of them were reported as unemployed (PCBS, 2005b).

A marking characteristic of the Palestinian economy has been its dependence on the agricultural sector as a residual employer of excess labour force in other sectors of the economy. This fact represents a great potential that the Palestinian agricultural economy holds. It can also serve as leverage out of poverty for many Palestinians.

This paper will attempt to study the marking characteristics of the Palestinian agricultural economy, in order to determine the potential it holds for poverty reduction. It will hence attempt to formulate the policy options necessary to achieve this particular goal.

The paper will aim explicitly to answer the following questions:

1. What is the current status of agricultural development in the Occupied Palestinian Territories and, through what process did the territories reach this stage?
2. What is the poverty reduction potential of the agricultural sector of the occupied Palestinian territories?
3. What are the different strategies and policies required for the development of the sector in a manner that achieves poverty reduction goals?

In order to answer these questions, this next section of this paper will attempt to devise a theoretical approach to agricultural development which covers human, institutional and natural factors contributing to this process. This model, although draws extensively on the sustainable livelihoods approach terminology, conceptualises the same factors in a different manner, one which is more compatible of the case study. It is characterised by less reliance on the participatory approach of researching respondents and more emphasis on the socio-economic characteristics of the community under research. The model also allows for a thorough investigation of exogenous factors through the 'constraints box' tool.

Building on a wealth of literature on the Palestinian economy and society, and several sets of statistics from Palestinian, Israeli and international sources, the third section of the paper will identify the main feature of the Palestinian agricultural economy.

Based on the picture painted in the third chapter of this paper, the fourth chapter will analyse the agricultural development- poverty reduction linkages, It will also outline a series of policies and strategies suggested for making Palestinian agricultural

development work for the poor. It will also briefly identify the main constraints facing such policies.

The final Chapter will conclude by outlining the main findings and policy recommendations of the study.

This study will only deal with the Occupied Palestinian Territories; those parts of historic Palestine which were occupied as after the Six-Days-War of 1967. Although the terminology used in reference to these areas is compatible with that used by major powers and, to an extent, Israel (although the latter usually drops the words 'occupied' and 'Palestinian'), this conformity should not be taken to represent a similar opinion on the status or future of the conflict. Nor should it be regarded as an implicit acceptance of the ethnocratic regime practised by Israel, and the widely accepted formula of ethnic segregation as a solution to the conflict in Palestine. It is merely a practical choice as the development priorities for these territories differ greatly from the priorities of the territories on which Israel was established in 1948.

The author refrains from using the word 'Palestine' in reference to any of these territories as this word refers to the area of Mandate Palestine, and not to any racially devised bantustans here or there.



# 2

## Poverty and Agriculture: A theoretical view

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Poverty is largely seen as a rural phenomenon. This implies that agricultural development has a central role to play in the fight against poverty. Growth in the agricultural sector is also seen to have more redistributive effects than growth in any other sector. Recent research indicates that a 1% increase in agricultural production can reduce the percentage of people living under US\$1 per day by as much as 1.2% (DFID 2003:1). To better understand the dynamics of agricultural development we will try to identify and explain the different factors that contribute to agricultural development.

The development literature is rich in different frameworks that allow for the discussion of agricultural development and its impact on poverty reduction. In this section we will attempt to propose a framework (*Figure 2.1*) for the study of agricultural development which is to be utilised in later sections and applied to the case study.

It is common knowledge that growth in the agricultural sector in itself is not a sufficient condition for poverty reduction, it should be coupled with policies that enhance access to resources and services for the poor and encourage a more equal distribution of the benefits of growth (for more on this see for example DfID, 2003; DfID, 2004a; Echeverria, 1998). It is therefore important to investigate the wider set of factors which can achieve the poverty reduction goals. Hence, this framework will be taken a step further to explore how future agricultural development programmes

can contribute to poverty reduction through presenting and analysing the causal chain which links Agricultural development to poverty reduction.

Although we will not be applying any form of participatory research for the purpose of this paper, we will develop a framework which utilises certain elements of the sustainable livelihoods (SL) approach. This framework will not deal with people according to the participatory approach followed in SL literature, but rather study the macro characteristics of the population in order how these characteristics affect other elements of the framework and, in turn, lead to agricultural development or de-development.

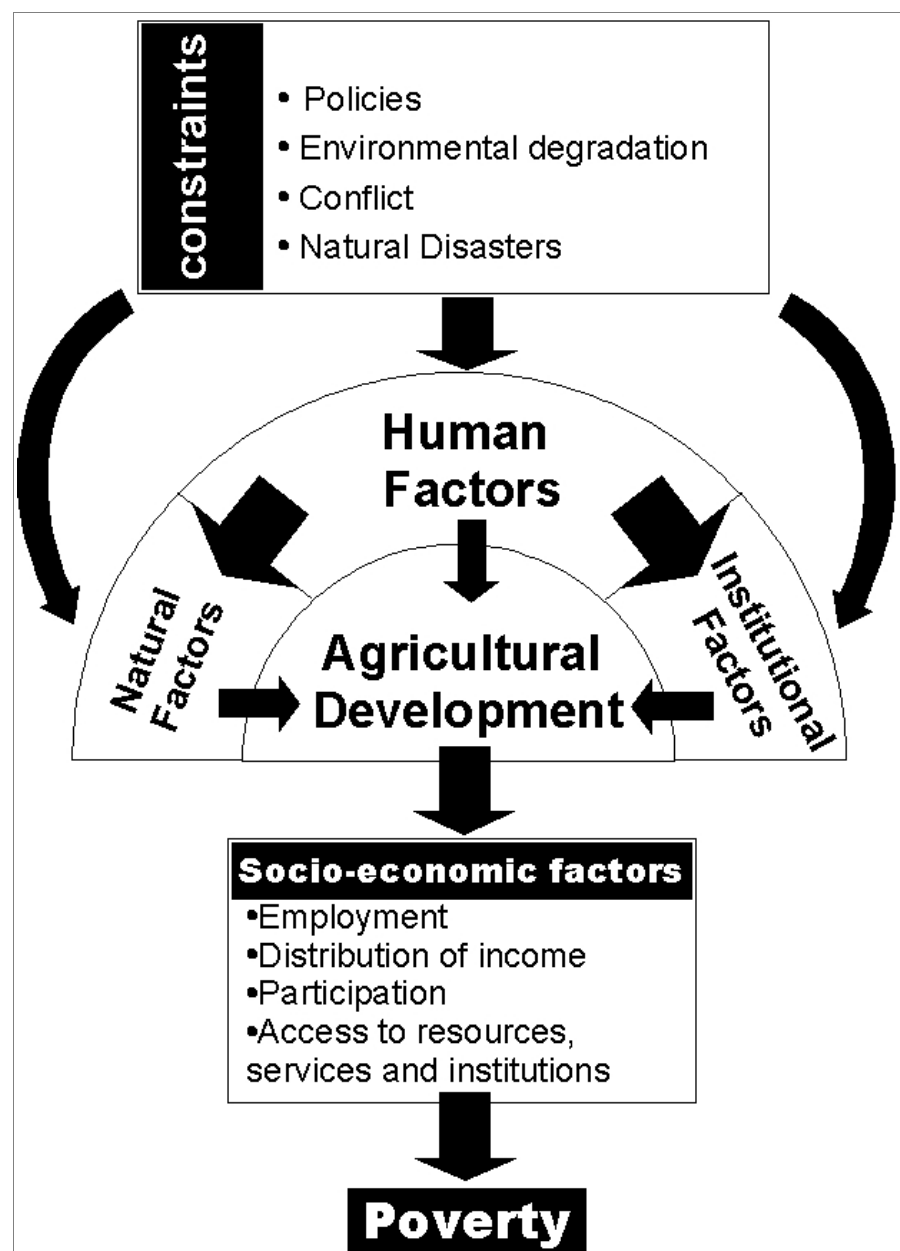
During the course of this paper we will conceptualise the status of agricultural development as a stock which can be measured at a certain point of time. It is essential at this point to clarify that we are not aiming to measure development which in itself is a process that continues over time but rather the status or the actual results, at a certain point, of this process. It is also essential to point out that agricultural development is not an ever increasing process, for, under certain conditions, there could be a de-development process that reduces the quality or quantity of agricultural output, utilises unsustainable methods which cannot be maintained over the long run or has negative distributive effects whereby the poor benefit less of the growth in agricultural output and are, therefore, worse off.

Through a review of the literature three grand categories of factors can be identified as major contributors to agricultural development: human factors, natural factors and institutional factors. Due to the strong linkages that exist between these factors, their contribution to the status of agricultural development can be analysed thoroughly only through a significant understanding of these linkages and their effects. These

factors are also subject to the context of the specific country under question. This context can be seen as composed of the different elements that ultimately decide the nature of interactions between the different factors of this framework, thus constituting the constraints on the agricultural development strategy.

Figure 2.1 below provides a graphical representation of the proposed model illustrating the the causal relationships between the different factors, the constraints and agricultural development. Moreover, it illustrates types of socio-economic

**Figure 2.1:** factors leading to poverty reduction through agricultural development



changes which can result from an agricultural development process and how they can lead to the reduction of poverty.

The three main sets of factors identified by this framework as having direct impact on agricultural development are the human, natural and institutional factors.

Recent development thinking has shifted from the focus on production and growth to a focus on the more human aspects of this growth: its effects and distribution. With this shift, humans are seen at the centre of the development process both as inducers development and as recipients of the final benefits. This principality of human actors is demonstrated in our framework.

Human factors in this framework refers to individuals' command over resources (whether financial, natural, human or physical) and the accessibility of institutions. This set of factors is hence tightly integrated with the natural and institutional factors to be discussed.

Human skills have particular relevance to the type of livelihood strategies they follow (this idea is explained thoroughly in Sustainable Livelihoods literature for more information see Bebbington, 1999), therefore the choice to incorporate agriculture as a livelihood strategy by one household requires a certain set of skills on the part of its members. These skills are, in turn, subject to the availability of certain services and training either on the part of the government or local institutions.

Gender relations constitute another factor with direct effects on the results of the agricultural development process (DfID, 2004d). The claim that women compose the majority of people living under extreme poverty and that female-headed households are more vulnerable to poverty than male-headed households is supported by an abundance of literature. Since the main purpose of this framework is to

conceptualise agricultural development in a manner that takes into account the distribution of the benefits of development, the status of gender inequalities and their effects in terms of the skewness of growth should be thoroughly investigated.

The accessibility of important institutions and the ability of the rural poor to influence decisions and transactions in these institutions is also important for the achievement of an agricultural development that is responsive to the needs of the poor (Rahman and Westly, 2001). The accessibility of markets, both local and international, to the rural poor represents a channel for selling produce and acquiring the financial means through which to support their livelihoods (Jacobi, 2000; DfID, 2004a). The term accessibility in this context does not only refer to the physical accessibility of such market, but also the feasibility of market transactions for the poor. Markets can be infeasible if one party has a low negotiating capacity and therefore is constantly exploited in market transactions, markets will be infeasible, and incapable of benefiting this party (DfID, 2004a).

The ability of the poor to influence decisions affecting them is also a determinant. Issues of power and participation are thus of extreme importance for understanding the interactions that can lead to agricultural development. The availability of well functioning state institutions at all levels (national, regional and local) that are representative of their electorate is an indicator of high levels of participation which can have positive impact on agricultural development. Moreover, the autonomy and strength of these institutions is also a critical factor in determining the level of participation and hence their contribution to sustainable development goals.

This framework seeks to underline the importance of institutions to the achievement of agricultural development and poverty reduction. Institutions of prime concern are

national and local governments, markets, financial institutions development institutions (Rahman and Westly, 2001).

National and local governments are the executive arms of the state. Hence, all state policies are enacted through their respective institutions. The goals and tendencies of these governments are a prime indicator to understanding their activities (or inactivity) in the socio-economic realm. Moreover, the composition and establishment of these institutions offer another source of information on the capability of these institutions to enact policies that are representative of their constituents' needs and aspirations. This type of information can provide valuable insight into the expected outcomes of the development approach pursued by these institutions.

Commodity markets are another type of institutions of significance to agricultural development. Markets are the channels by which farmers sell their produce to acquire financial capital. The physical availability of markets are not the only factors of importance. Their accessibility and feasibility are also vital for the development process. If the poor cannot reach markets due to lacking infrastructure or expensive travel they cannot reap the benefits of market transactions. Moreover, if through these transactions the poor are constantly exploited, either due to lack information or through structural market failures such as monopsony whereby there are multiple sellers but only one large buyer who determines the market price, markets will lose their feasibility to the poor and incur no value added hence reinforce their poverty and underdevelopment (DfID, 2004a).

Government response to market failures (in this form or others) is another factor of importance. Market failures are greatly noticeable in the credit market, especially where the poor are concerned. Financial institutions usually avoid providing credit to

the poor due to the large risk associated with this form of credit. The availability and accessibility of financial institutions that provide services to the poor has an important effect on the development process especially in the rural areas. This claim finds large support in the literature that covers the microfinance 'revolution' South Asia, Latin America and large parts of Africa (for an interesting account of micro-finance in Sudan see Elhiraika and Ahmed, 1998) .

The third set of factors relates to the availability of natural resources, particularly land and water. Agriculture depends largely on the availability of agricultural land. Land tenure stands out as a dominant theme across the literature. Issues of land ownership and use determine the benefits of agricultural development. If the poor only work as labourers in large farms, their benefit from agricultural growth will only be marginal and will only come in the form of employment opportunities. The literature notes that smaller farms contribute more to poverty reduction than larger farms, this is especially true due to the larger number of employed labourers on such farms but also because usually these farms are family owned and therefore profits are shared by family members. This fact, however, raises concerns over the distribution of returns on the intra-household level especially if gender considerations shape or contribute to the distribution.

Gender is also present in land tenure arguments since many developing country societies do not allow women ownership of land which strips female-headed households from their natural resource endowments (DfID, 2004d).

The availability and accessibility of water is also a question for analysis. If the poor can acquire land but not the water necessary for growing crops it will create no difference.

## ***The Constraints***

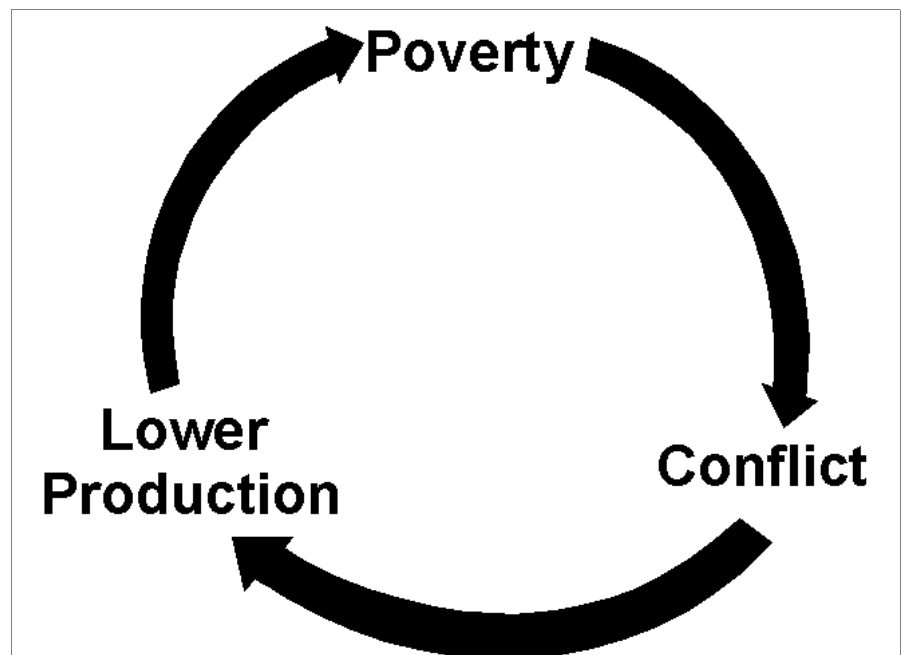
As outlined earlier, the factors discussed above are subject to the overall environment of the country concerned. The constraints box illustrated in figure 2.1 covers some of the aspects that surround the development process or which might occur at one point of this process causing external shocks.

The figure lists some of the most important factors but it is by no means exhaustive of all of them. It sets out to explain those factors which are of relevance to our case study, but remains flexible to the incorporation of other factors in the future.

Conflict is a main theme that runs across the sustainable livelihoods literature and other writings that specialise in agriculture and development. Its impacts are relatively straightforward to understand.

Conflict has a direct effect on the stock of resources, causing their depletion through militant activities. The depletion of the asset base of the poor will aggravate their poverty as they will have less opportunities to devise sustainable livelihood strategies. Conflict will also force a decrease in overall production, which will in turn

**Figure 2.2:** The cyclical relationship between poverty and conflict





reflect on agriculture. The poor will lose out in terms of production and in terms of access to resources and thus their poverty will be reinforced.

On another token, lower food production and increased poverty will ultimately increase conflict levels. This will create a cycle of conflict-lower production- poverty which might seem endless. This cycle is presented graphically in figure 2.2 below.

Conflict will emerge as a main theme in our analysis due to its significant effect in our case study. Under this theme, the effects of conflict on the assets base and access to these assets and to institutions will be reviewed and analysed. In particular human and natural capital will be constantly recurring as most affected by the conflict, but also financial, physical and social capitals will be affected.

Depletion of natural capital can be seen as another shock of substantial effects on agriculture. This depletion will be examined through investigating the effects of natural disasters and environmental degradation on the stock of natural capital. While natural disaster occur at one point, causing considerable losses to natural, human, financial and physical capital, their effect continue long after they occur. Most recent example is the South Asian Tsunami which left hundreds of thousands dead and cause significant losses in financial and physical capital for the poor households on the coastal areas of Sri Lanka, India, Indonesia and Thailand. In Sri Lanka for example,. The areas adjacent to the ocean which were covered by water have lost their agricultural value due to the salination of the soil, at the same time, the fishermen lost their boats and the list of losses to the inhabitants of these areas are endless. Rebuilding their livelihoods will require huge amounts of financial capital which they cannot afford, thus they have been driven back into extreme poverty.

Their situation has been aggravated by government policies which created a 2 Km buffer zone across the coast in which building is prohibited. Such policies can also constitute a significant shock to development and poverty reduction due to the fact that poor lose their livelihoods.

### ***Socio-Economic Changes***

Under these constraints and using the factors and using the factors outlined earlier, agricultural development continues as a process. Its direction is not necessarily forward since the negative effects of the constraints discussed above might outweigh the positive effects of the different factors contributing to the development process.

Whatever the results of these interactions are, a set of socio-economic changes will result from the process. These changes include changes in employment status, the distribution of income, level of participation and access to resources, service and institutions. These effects will in turn decide the achievement of the poverty reduction objectives.

Five years since the start of the Intifada, the living conditions of Palestinians living in the occupied territories of the Occupied Palestinian Territories have deteriorated to unprecedented levels. Palestinian sources estimated that, at certain points of the Intifada, some 72% of Palestinian households were living under the national poverty line, while the UNDP (2002) estimated the percentage of Palestinian citizens living under the national poverty line at 60.8% at the end of 2001. At the end of 2003 the PCBS and World Bank (2004) estimated the poverty rate at 47%, dropping to 30.6% one year later (PCBS, 2005).

Several constraints are placed on the Palestinian development process which leads the UNDP (2002) to predict that the Mellenium Development Goal relating to poverty cannot be achieved under the current political situation. By all measures, these rates are worrying and require an active strategy on the part of the Palestinian Authority to reduce poverty levels and regain the losses incurred by the economy over the years of the Intifada.

A quick look at the structure of the Palestinian economy will reveal that the Agricultural Sector ranks third both in terms of employment and contribution to the GDP (PCBS). However, the agricultural potential of the Occupied Palestinian Territories is underutilised and the productivity of the sector lags behind that of other, more developed countries (World Bank, 1993). Agriculture has also served as a

'residual employer' thus absorbing excess labour force in other sectors, This explains increased agricultural employment during times of economic or political crises.

This section will look at the different factors surrounding and contributing to agricultural development in the Occupied Palestinian Territories. It will cover the human, natural and institutional factors contributing to, and the various constraints on, this process. Based on this discussion the following section will analyse the potential for socio-economic changes resulting from agricultural development and the foreseen impact on the poverty situation in the Occupied Palestinian Territories.

### **3.1 Human Factors**

Humans are the centre of any development process. They are both contributors and recipients of the results of such process. The possible contributions of Palestinians to the agricultural development process in the Occupied Palestinian Territories will be analysed. Under this heading, issues of human capital and access to resources will be investigated.

#### **3.1.1 Human Capital**

Human capital issues have been outlined as a prominent reason behind the low productivity levels of the Palestinian Agricultural sector. Much of literature on Palestinian agriculture points out to the old age of Palestinian farmers, their low educational aptitude and the lack of extension services as main constraints on the agricultural development process in the Occupied Palestinian Territories (PECDAR, 1995; UNCTAD, 1996). It is obvious that this erosion of the human resource base of

the agricultural sector is a direct effect of the Israeli policy which initially encouraged Palestinians to work as non-skilled labourers in the Israeli market. Tamari (1981) points out to the fact that the increased labour opportunities and land lease options lead to a decline in agricultural employment and a tendency to seek employment in Israel.

It is important to note that increased land expropriation and control over water resources have forced most of agricultural workers out of the agriculture workforce into other sectors of the economy (Sayigh, 1986)

However, a dominant characteristic of the Palestinian agricultural economy has always been the tendency for increased employment in the agricultural sector during times of increased conflict or economic recession in Israel, thus marking the agricultural sector as a residual employer in the Palestinian economy (PECDAR, 1995; World Bank, 1993).

Figure 3.1:  
Agricultural  
Employment in the  
West Bank and Gaza  
1970-1988.

Source: Statistical  
Abstract of Israel  
cited in World Bank  
(1993)

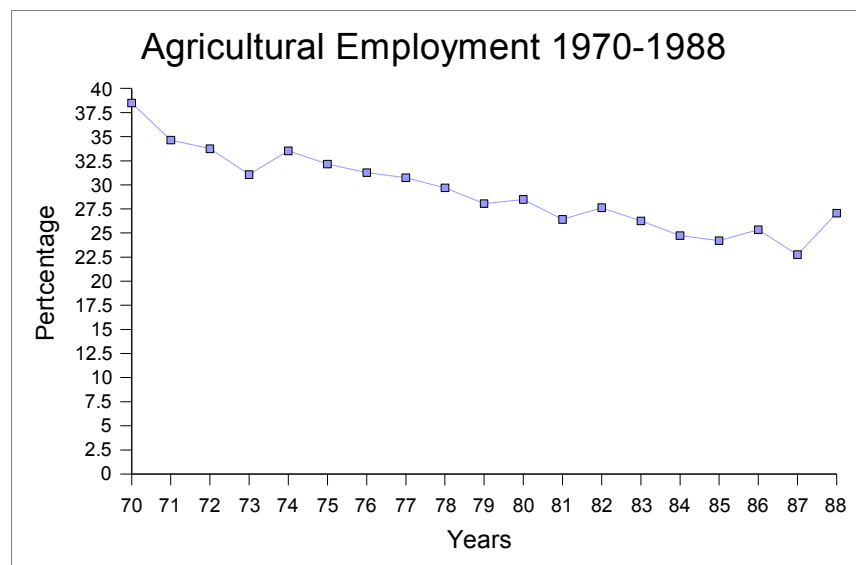
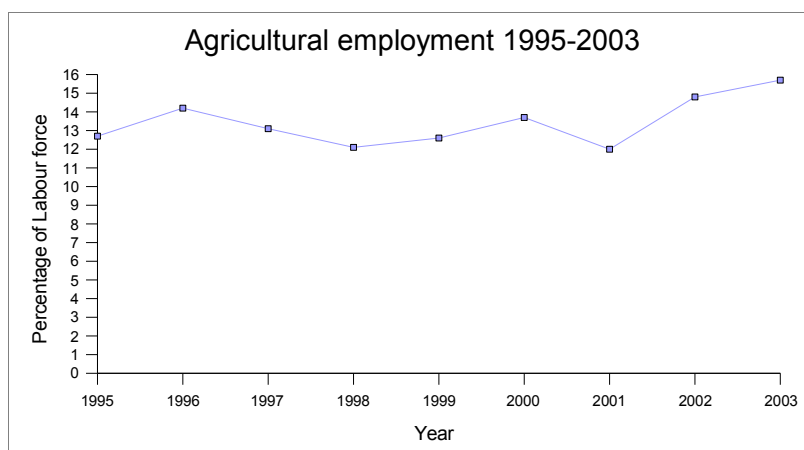


Figure 3.2:  
Agricultural  
Employment in the  
West Bank and Gaza  
1995-2003.

Source: PCBS



Figures 3.1 and 3.2 above provide a description of the changes in employment in the agricultural sector in the Occupied Palestinian Territories over the period 1970-2003, with some omissions. Over this period agricultural employment dropped from 38.5% in 1970 to 15.7% in 2003. However, over this period, changes in the absorption of the labour force in the agricultural sector are obvious. Since the start of the occupation until the last year for which data is available there was a downward trend percentage of agricultural employees to the labour force. The year 1988, which marks the first year of the Palestinian Intifada, shows a deviation from this trend when the percentage of individuals employed in agriculture rose almost 5% from the previous year. Unfortunately, data for the period 1989-1994 is not available but from the available data we can see that employment in agriculture dropped from 27% in 1988 to 12.7% in 1995. Although this can partly be tied to the large numbers of Palestinians who returned with the establishment of the Palestinian Authority, and thus the expansion of the workforce, the 'peace climate' and the increased employment opportunities in Israel led to this large drop.

### **3.1.2 Access to finance**

Palestinian farmers face a series of other constraints that inhibit the development of agriculture in a manner conducive of poverty reduction. Access to financial capital is an important agricultural development in general. The case of the Occupied Palestinian Territories clearly marks a situation where access to personal finance is extremely limited. Up until 1967 few institutions offered such loans, while after the Israeli occupation in 1967 all operating banks were closed down by a military order (World Bank, 1993:50). Financing of investment has largely depended on personal sources which meant that poor farmers would not be able to further develop their farm business.

Few Palestinian NGOs, especially the Palestinian Agricultural Relief Committees (PARC), Maan Development Centre and Union of Agricultural Works Committees have been active in supporting Palestinian farmers through both training and financing, however credit provided by these and other institutions was not enough to cover the demand (PECDAR, 1995).

As for international aid, most international donors view funding to the agricultural sector as less desirable due to high risks involved in agriculture. Awartani (1997) indicates that the total share of agriculture did not exceed 1% of donor support.

### **3.1.3 Gender issues**

It is a well documented fact that most of the world's poor are women. Female-headed households are more vulnerable to shocks than male headed households. For a development strategy to be effective in poverty reduction, it has to give sufficient analysis to the status of women.

PCBS (2002) statistics indicate that Palestinian females depend largely on agriculture for employment. Over 22% of sector employees are females, and in certain areas more than 50% of employed females work in agriculture.

Figure 3.3 Female employment in agriculture 1995- 2001.

Source: PCBS(2002)



Figure 3.4 Female Participation rate by district, 2001.

Source: PCBS(2002)

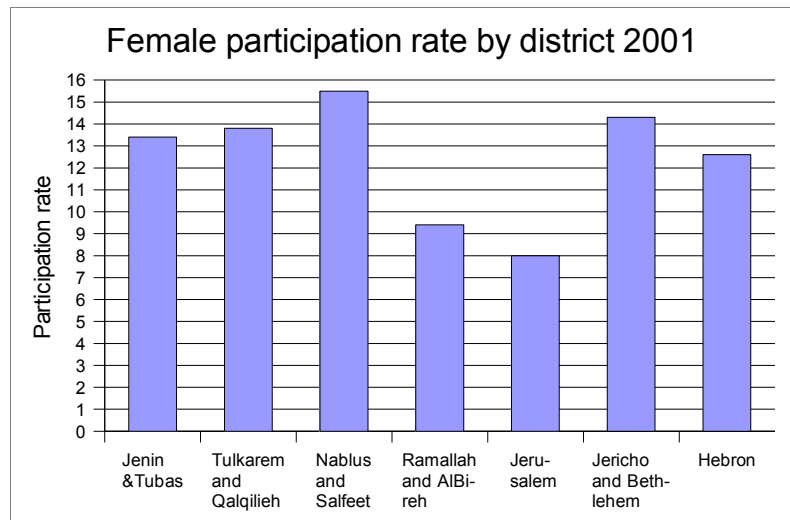




Figure 3.3 above shows that female employment in agriculture is twice the national average. It also indicates that there was a continuous rise in female employment in agriculture up until 2001 when it dropped suddenly by almost 8 percentage points in 2002. This could be linked with the Israeli invasion of West Bank cities in that year and the beginning of the construction work in the Apartheid Wall.

Figure 3.4, on the other hand, shows that female participation rate is larger in agriculture-dependent districts (like Nablus, Salfeet and Jericho) than it is in other, non-agricultural districts (like Ramallah and Jerusalem). In some of these areas, like Jenin and Tubas, more than half the employed females work in agriculture (PCBS, 2002: 75).

However, despite this large involvement of women in the agricultural sector, their access to natural resources, mainly land is limited. The Islamic Inheritance Law which is applied in the West Bank and Gaza allows males twice the share of their female sisters. Even this law is often ignored by males who take over their sisters shares in an inheritance, especially if they are married.

This fact leaves women unable to access land for agricultural production making most of the female employment in agriculture mentioned above in the form of family farming.

## **3.2 Natural Capital**

### **3.2.1 Land**

Land area and water resources are probably the two most significant natural constraints on the development of Palestinian agriculture. The area of the occupied Palestinian Territories is relatively small compromising 5,867 Km<sup>2</sup>, just over 36% of

which is suitable for agriculture (Tbeileh, 1997). However, there is a large potential for land reclamation

The occupied Palestinian territories are characterised by various climates which allow for diversification in agricultural production.

Five main climatic regions can be identified:

- Coastal region of the Gaza strip which is characterised by medium rainfall and a semi-arid Mediterranean climate. This region is mostly suitable for fruit trees, particularly citrus and vegetables.
- Semi coastal plains of north and north-western West Bank. With high rainfall and fertile soil it is suitable for field crops.
- Central highlands extending from Jenin in the north to Hebron in the south. With high rainfall it enjoys diversified production, but olives are the prevailing crops.
- Eastern slopes, with low rainfall it is described as semi-arid to desert, and it is mainly used for grazing.
- The Jordan Valley, despite low rainfall levels it characterised by fertile land. Using irrigated agriculture this region produces off season vegetables and semi-tropical fruits.

(Abu Arafah et al., 1996)

Each of these areas allow for different crops to be planted at different times of the year, thus giving the Occupied Palestinian Territories the ability to compete in international markets.

The land tenure system of the Occupied Palestinian Territories is based on private ownership of land. Most of Palestinian households living in rural areas do own land. This fact makes family farming the most dominant agricultural production model in the Occupied Palestinian Territories. This is also supported by the fact mentioned earlier relating to higher female participation in the labour force in the agriculture dependent regions of the West Bank. The only reason this is true is the fact that they work on family farms.

This land tenure system, although it ensures a certain level of equity in the distribution of land, suffers from many disadvantages that threaten the viability of agriculture in certain areas. The most important of these disadvantages is that the law does not put a minimum on land division by inheritance which renders parcels of land to be unproductive. A second issue relates to the distribution of land over female inheritors. Albeit the inferior share of women in the Islamic Inheritance Law applied in Occupied Palestinian Territories, female inheritors are often denied this share. Women farmers work on family farms and hardly, if ever, own their farms.

The most pressing problem regarding land remains the Israeli practices of land confiscation, building and expanding settlements and the creation of military zones.

### **3.2.2 Water**

Water shortage is a dominant characteristic of the Middle East in general. The Occupied Palestinian Territories are no exception. Three main sources of water exist: Surface water (permanent rivers and lake or seasonal water runoffs and springs); ground water from three main aquifers in the West Bank, and one in Gaza Strip; and, rain water.

Although water shortage in itself is a problem for agricultural development in the Occupied Palestinian Territories, it is further accentuated by two main factors: Israeli exploitation of Palestinian water resources and lack of suitable waste water management systems.

Palestinians use around 15-20% of the annually available water, the rest is used by Israelis and Israeli settlers in the West Bank. Almost 70% of water use is agriculture. Although Palestinians use a very small percentage of their own water resources, the future development of the agricultural sector depends largely on efficient water use and re-use systems (World Bank, 1993; Tbeileh, 1997).

### **3.3 Institutional Factors**

It is evident that no development process can occur without the existence proper institutions that can drive forward such process. In this section we will identify the roles that have been played by governmental institutions, both local and national. We will also discuss the availability of markets, local and international, and the constraints faced by Palestinian farmers in marketing their produce.

#### **3.3.1 Government**

it is important to note in this field the a Palestinian national government has only been functioning for a little more than a decade. Prior to that the Occupied Palestinian Territories were subject to direct Israeli military rule which lasted for more than 27 years. Although this military rule still continues to disrupt the normal lives of Palestinians, the presence of a national government for the first time can help set and achieve development goals for the Palestinian people.

The Israeli Civil Administration which ran the every day details of the Occupied Palestinian Territories did very little in terms of planning for the development of these areas. As a matter of fact many authors agree that the Israeli military rule was a case of deliberate de-development of these territories (Ali, 1998; Roy, 1999). As a matter of fact, Ali(1998:19) cites the following words by the then Defence Minister, later 'peace champion', Yitzhak Rabin in 1986:

“ There will be no development in the Occupied Territories initiated by the Israeli government, and no permits will be given for expanding agriculture or industry which may compete with the State of Israel.”

This policy was implemented carefully throughout the years of the occupation. With regards to agriculture, it is evident that the Israeli Civil Administration did not sufficiently equip or staff its Agriculture Department. The World Bank (1993) report indicates that the total number of Agriculture Department employees fell from 550 in 1977 to 141 in 1989. Most of the Department's budget was spent on salaries and other current expenditure. This led to deteriorating extension research services which in turn reflected on the development of the sector.

Israeli policies on water use reduced the percentage of irrigated land in the West Bank from 27% in 1967 to 12% in 1992 (Ali, 1998). Increased land area was continuously confiscated for building settlements or closed off as military areas, thus reducing the areas of available agricultural land.

With the establishment of the Palestinian National Authority, agriculture was transferred to its jurisdiction. The PNA was not capable of developing the sector and

very little attention has been given to it. As Awartani (1997:209) points out, the first Palestinian cabinet did not include a minister for agriculture, the agriculture portfolio was given to another minister with no time or experience of the issues involved. The ministry's budget didn't exceed 1.3% of the PNA budget, and continued to be in the form of wages and current expenditure with combined constituted 97%, leaving only 3% for capital expenditure (Awartani, 1997).

Meanwhile, Israeli land confiscation and water exploitation continued. Naqib (2003) points out that by the end of 1996 Israel has confiscated 68% of the West Bank and 40% of the Gaza Strip. Confiscation continued well after that, and Although Israel has recently relinquished the settlements of the Gaza Strip as a result of the resistance, more and more land is currently being confiscated in the West Bank to build the Apartheid Wall.

As for local governments, the system of municipal or local council did not exist in the period of the occupation except in the larger cities where agriculture did not prevail. With the advent of the PNA local councils were set up by the Local Governance Ministry. Such councils were very ineffective and their budgets only covered minor expenses. Starting December 2004, a series of local council elections were held in the Occupied Palestinian Territories. Despite minor comments, the elections were largely seen as free and fair by the local and international observers. Five rounds of elections have been held by the final round, expected in 2006, all villages, towns and cities would have elected new councils. It is very early to evaluate the achievements of these councils. However, it is expected that the periodic elections will encourage council members to work on projects for the benefit of the residents of their respective areas, agricultural development should have a high place on their agenda.

### **3.3.2 Markets**

The existence of functioning and accessible markets is largely important to ensure the viability of agriculture, its future development and contribution to poverty reduction. Palestinian agricultural markets are usually found in the urban centres with smaller outlets available in villages. The small size of the occupied territories makes urban markets accessible to even the remotest villages.

The occupied territories have historically been used by Israel as a market for its products in general and agriculture was not an exception. Sayigh (1986) indicates that the Occupied Palestinian Territories are the second largest importer from Israel, just after the United States. Over 90% of Palestinian imports came from Israel.

Another market of prime importance that Israel has deformed since the occupation is the market for financial services. All banks operating in the Occupied Palestinian Territories were closed down by an Israeli military order at the beginning of the occupation. For a whole year no banks operated in the territories. Then Israeli Banks operated from branches in the major cities (Sayigh, 1986). This could only serve to weaken the Palestinian economy by limiting the potential for investments in the productive sectors, which in anyway faced a host of other, bureaucratic obstacles.

Israel also tried to restrict Palestinians' access to regional and international markets. Through increasing the costs of transport it tried to make Palestinian agricultural products less competitive in the face of Israeli products.

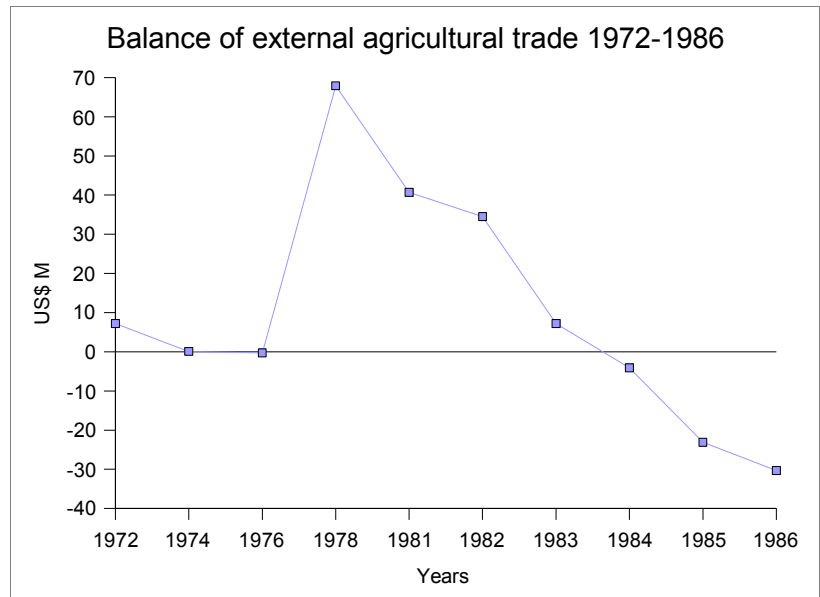
Agricultural products could only be exported through Israeli parastatal firms such as Agrexco and the Citrus Marketing Board. Both are accused to discriminate against Palestinian farmers. Shehada (1988) notes:

"Indeed, Israel totally controls the export of goods from the territories by requiring that they be channeled exclusively through Israel's own export marketing board, Agrexco, which sells the produce at profits accruing to Israel and under an Israeli brand name."

Initially Palestinian agriculture was doing well in terms of external trade. The agricultural trade balance stood at a maximum of \$ 67.9M in 1978, less than a decade later it dropped to a deficit of \$30.3 M in 1986.

Figure A.5: Balance of external agricultural trade 1972-1986. (US \$M)

Source: PECNDAR (1995)





As Figure 3.5 above shows, external agricultural trade has been taking a downward trend since 1978. One cannot forget that the Israeli policy of dumping the large amounts of subsidised Israeli agricultural produce in Palestinian markets has contributed to this deficit in particular and to the deterioration of the status of the Palestinian farmers whose subsidised products had to compete with the subsidised Israeli products (see Asadi, 1990; Naqib, 2003)

### **3.4 Constraints Box: The Conflict**

Any development process faces many constraints. These can be related to the international economy or to local issues particular to the country in question. The major constraint on the development of the Occupied Palestinian Territories is the conflict with Israel. The effects of this conflict are either results of a deliberate Israeli policy to maintain the underdevelopment and dependency of the Palestinian economy or direct losses as a result of military activity which is by and large Israeli military activity.

It is a difficult task to categorise economic losses of the Palestinian economy as being a result of policies or military activity, because in many cases the military attacks on certain resources are part of a deliberate policy of depleting or conquering existing Palestinian resources.

The largest disruption to normal life in the Palestinian territories recently has been the construction of the Apartheid Wall. This wall will annex 10.1% of the West Bank area including East Jerusalem (OCHA, 2005). Many Palestinian towns and villages will be closed off by the wall with only one gate linking them to other Palestinian

Bantustans. Such gates have opening times for one hour in the morning and one hour in the afternoon, making leaving the village for health or other emergencies impossible. Residents of such areas are required to obtain permits from the Israeli authorities in order to live in their houses (OCHA, 2005). Many other Palestinians live on one side of the wall while their land lies on the other side, or it has been confiscated to build the wall. These cannot access their land unless they have a permit. Such applications are often rejected on 'security grounds' or if the Israeli side thinks the Palestinian farmer cannot prove ownership of this land.

Water constitutes another significant resource which was largely affected by Israeli policy. Figures 3.6 and 3.7 provide graphical representations of the extent of Israeli exploitation of the regions water resources.

Figure 3.6: Distribution of Groundwater in the Jordan Basin

Source: PENGON, 2004

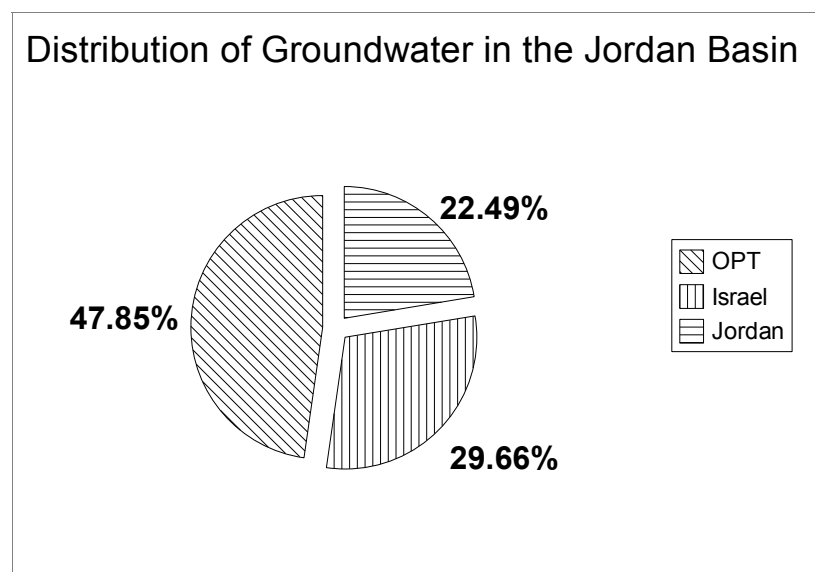
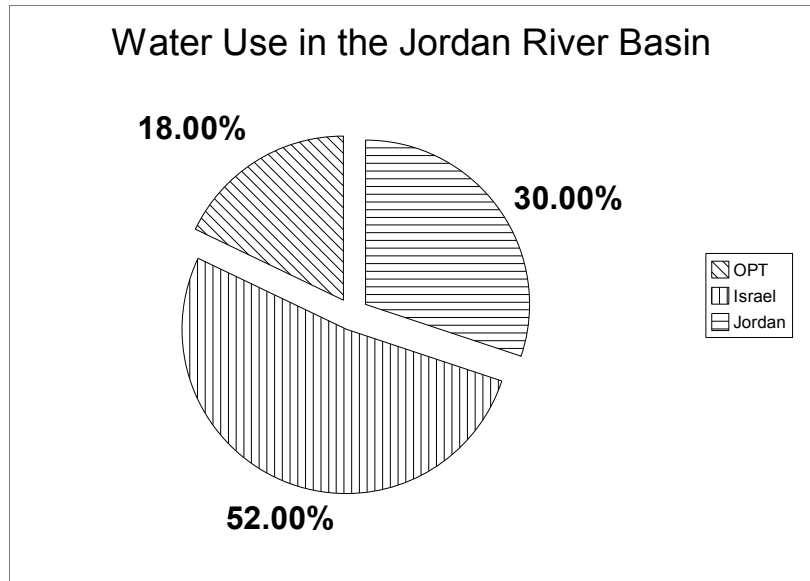


Figure 3.7: Water Use in the Jordan Basin

Source: PENGON, 2004



It is evident from these two figures that while Israel has 'legal access' to less water resources than the Occupied Palestinian Territories it uses more than the territories and Jordan combined.

Israel did not allow Palestinians to drill more wells to access water from aquifers. It restricted water level pumped out to 10% less than the levels of 1972. Although the total irrigated area of the West Bank and Gaza slightly increased from 190,000 donums in 1967 to 211,500 donums in 1990 (World Bank, 1993), one has only to remember the number of Israeli settlements established on these areas to understand the loss of Palestinian irrigated land to Israeli settlers. Abu Arafah et al (1996) estimate the total irrigated area at 120,700 donums, less than two thirds the irrigated area 30 years earlier. With the construction of the Wall Israel will control the north western area of the West Bank which has the easiest access to the northern aquifer.

Five years since the start of the Intifada, the Agricultural sector stands to be the largest loser as a result of Israel's attacks (UNDP 2002). Moreover, Nasr (2003) estimates Palestinian agricultural losses in the period September 2000- December, 2002 at USD 823 M. He also states the following direct losses to the sector as on end of September, 2002.

- 50000 dunoms bulldozed
- 9415 dunoms irrigation destroyed
- 179 wells destroyed
- 725 thousand trees uprooted

These are only some of the main documented direct economic effects of the latest 5 years of the conflict. Needless to say that the exact effects due to the loss of life, human capital, social capital are immeasurable.

Several authors have emphasised the viability of the agricultural sector of the Palestinian Economy (Asadi, 1990; Awartani, 1997; Tbeileh, 1997). However the sector is need of serious investments to increase its productivity, help it grow in the future and, above all, help in the fight for poverty reduction. This asserted by Tbeileh (1997) who identify 12 different field in which investment is necessary to ensure the proper development of the sector.

The Palestinian Participatory Poverty Assessment report mentioned several reasons behind poverty suggested by the farmers themselves: lack of investments in agricultural infrastructure; dependence on Israeli inputs; Israeli destruction/expropriation of their natural resource base; lack of finance services (particularly micro-credit and micro-insurance for agricultural crops which protects against the risks involved in agriculture); and lack of irrigation water and dependence on rain-fed agriculture (Istanbuli, 2002)

There are other issues of significance that have been identified during the process of this study which will also be discussed here. This section will try to suggest specific policy options for the development of the sector in a manner conducive of poverty reduction.

#### **4.1 Irrigation**

Smith (2004) argues in favour of irrigated agriculture as a tool to combat poverty. He proposes four inter-related mechanisms through which he believes irrigated agriculture has the potential to reduce poverty:

- (1) Irrigated agriculture can raise income levels for poor farmers. Where irrigated agriculture is used farmers can avoid the risks of dry season, increasing yield quality and quantity, and enable two or even three crops per year. Other positive effects of irrigation include protecting against land degradation (through salinisation). Irrigated agriculture also ensure longer employment for farm labourers.
- (2) Increased agricultural output will lead to economic growth. It is widely accepted that agricultural growth is the largest contributor to poverty reduction due to the facts that this growth is usually shared by the poor who live in rural areas (DfID, 2003).
- (3) Irrigation has the potential to increase opportunities for rural livelihood diversification. By yielding higher output, it will be less risky for the rural poor to engage in non-farm activities, thus acting as a leverage out of poverty.
- (4) Multiple uses of water supplied by irrigation infrastructure help in raising the living standards of the poor rural households. In many developing countries, running water is not readily available in many rural areas. Village members would usually have to depend on one source of water which might require extensive travelling to acquire water supplies. The presence of an irrigation

infrastructure makes it easier to connect rural households to a running, clean water network.

'In assessing the first three of these, it is important to recognize the synergy, or complementarity, between use of irrigation and other innovations, particularly improved seed and fertilizer technology.' (Smith, 2004:245)

Almost one third of the occupied Palestinian territories land area is agriculturally viable, composing a total of 1.98 Million dunoms, a further 1.5-2.0 million dunoms have traditionally been used as grazing land (PECDAR, 1995:15).

While the area currently under irrigation is 205 thousand dunoms, only 95 thousand of which in the West Bank, the total area suitable for irrigation in the West Bank is five times this figure. Due to the fact that irrigation increases the productivity of land, this underutilisation of land capacity should be overcome in order to increase output and create more jobs.

Annual average precipitation in the occupied territories is 2870 million cubic meters of which just over a quarter (27%) charges ground aquifers. The total annually replaceable water resources stand at 812 million cubic meters for both regions of the Occupied Palestinian Territories. The total water annual water consumption is 220 million cubic meters (PECDAR, 1995). However, three times this amount is annually consumed by Israel, thus endangering the sustainability of the ground water and its quality. In certain areas, like Gaza, the salinity levels in ground water due to over pumping has reached levels rendering the quality of water non-consumable for

humans. If over pumping continues, the salinity of groundwater in the Gaza aquifer will reach levels under which it will not be possible to use at all.

Israeli authorities have started to impose production limits on individual wells since 1973. These limits are still at the same levels imposed since then, despite the increased population size.

It is obvious that the current water situation is unsustainable. By and large, this is due to Israeli practices which over exploit the existing water resources. It is also counter productive in terms of poverty reduction, as most of the water abstracted is actually used by Israelis and a small percentage is allowed for Palestinians. However, there exists three main projects for enhancing the use of available water resources That Palestinian National Authority, and its local government councils should actively work on to ensure the sustainability of the water situation and the efficient use of these resources:

1. Enhanced water management system. While 27% of annual precipitation recharges groundwater aquifers, 67% is lost to evaporation, while a further 5% is lost in surface run-off. It is imperative that the evaporation rate is quite high and some measures should be taken to reduce this rate in order to gain an increase in water resources.

A possible suggestion in this field would be the building of wells to collect water. This method has been traditionally used by Palestinian farmers and Palestinians in general. However, this method has gradually lost importance due to the establishment of a running water infrastructure that provides for



almost three quarters of Palestinian population (73.4%) according to PCBS 1997 census.

Palestinian statistics lacks significant figures on the use of rain water wells in irrigation. The PCBS website mentions that 2.5% of Palestinian farmers used such wells in irrigation in 2005, however, this figure is doubtful due to the large no response/missing observations rate for that particular question (74.6%).

2. Waste water management system. The occupied Palestinian Territories do not have an effective waste water management system. Waste water is usually dumped with little treatment. This causes health hazards to communities living nearby these areas. It is also a major source of pollution. An efficient waste water management system can help in reducing these health and pollution hazards and also provide much needed water resources which can be used for agricultural production. De-salination of sea water is also another option for the Gaza strip. Depending on the capacity of the system that would be employed such project, if run at an optimal scale, can provide both agricultural and fresh water for communities living in the Gaza Strip.
3. Enhanced irrigation system. In many agricultural communities traditional open channel water are used in irrigation. Such method is very inefficient especially in field crops. Alternative methods must be encouraged by the Palestinian National Authority and adopted by Palestinian farmers in order to increase the efficiency of water use.

## **4.2 Land**

Land is the second constraining factor in Palestinian agriculture. The small size of the occupied territories, and the large areas confiscated by Israel make it imperative that land conservation and reclamation should be placed high on the agenda of the concerned authorities.

Land degradation can be a direct result of poverty but stopping it can lead to poverty reduction (Barbier, 1997). Antle and Diagana (2003:1178) also emphasised that 'resource poor farmers play a role in human induced natural resource degradation through the use of unsustainable agricultural methods.' In such cases the short run economic advantages of exploiting agricultural land makes these farmers participate in activities that contribute to the long run land degradation to achieve these economic advantages, especially if survival is at stake. Barbier (1997) also notes that 'overpriced agricultural land leads to exploiting frontier or marginal land for short term gains.' which causes further degradation for grazing or forest lands with marginal agricultural potential.

Several policy suggestions can be made in this field. The prime aim of these policies should be to (i) increase the economic returns of existing land areas as opposed to frontier or marginal ones; (ii) improve the access of poorer rural households to credit and land markets; and (iii) alleviate any remaining policy biases in these markets that stand in favour of better off farmers and individuals.

In our particular case, two main policy options arise:

1. land reclamation. This policy option refers to both reclaiming non-agricultural land and utilising underutilised agricultural land. The total cultivated area of the Occupied Palestinian Territories is 1.8 million dunoms. The total agricultural land area of the Occupied Palestinian Territories is estimated at 2.16 (Tbeileh, 1997). This leaves a total area of 316 thousand dunoms suitable of cultivation at little extra cost. Land reclamation, on the other hand can be a costly process, although it can lead to high returns on certain lands, it is inefficient in others and thus should be carefully planned and implemented.
2. land reform. As mentioned in the previous section, certain parcels of land have undergone division so many times, that they have become economically unproductive. The UNCTAD (1996) report suggests that the PNA should attempt to re-parcel such lands into economic units and redistribute them on owners. A future Land Law should also include articles that forbid agricultural land from being divided into non-economic units.

Moreover, it is imperative that extension and training services aimed at increasing the productivity of already cultivated land are necessary.

### **4.3 access to markets**

Farmers need to sell their products in order to earn the money through which they sustain their livelihoods. The presence of functioning and efficient markets is a necessary condition for this process to be feasible for farmers. Two generic types markets exist which requires different, albeit not contradictory, sets of policies.

#### **4.3.1 national markets**

Local agricultural markets exist in all Palestinian urban centres. However, these markets stand in urgent need for various infrastructural development and improvement. There is also very little supervision on agricultural imports especially from Israel. Several authors regarded Palestinian markets as an easily accessible dumping ground for subsidised Israeli agricultural produce (Asadi, 1990; Naqib, 2003).

In order to ensure Palestinian farmers benefit from existing markets the Palestinian Authority and its relevant institutions should engage in the development of such markets and increase available market area and infrastructure such as transport and storage facilities (World Bank, 1993).

Moreover, the relevant authorities should supervise the imports of agricultural produce. This is particularly important in case of Israeli products which are continuously dumped into Palestinian markets in a manner that is harmful for Palestinian farmers.

#### **4.3.2 international markets**

Prior to 1967, the agricultural exports of the West Bank amounted to one third of all Jordanian exports (World Bank, 1993). However, several restriction have been placed on exports from the Occupied Palestinian Territories since the occupation up until this very day. A major obstacle in terms of international trade is the lack of a national marketing agency for Palestinian agricultural produce.

The Palestinian National Authority should establish a firm concerned with the marketing of Palestinian agricultural products in international markets. Due to the

large amount of resources required for establishing such a firm, the purpose would best be served by a parastatal firm. This structure would ensure the benefit of the farmers (who should be represented on its board) and will avoid farmers exploitation which would occur if a private monopoly took over this task.

#### **4.4 Agricultural Subsidies**

Barbier (1997) notes that subsidies help the wealthier households, instead government intervention should be focused on providing credit and facilitating access to inputs. However, in certain situations agricultural subsidies might be necessary to give local produce an advantage to compete with the already subsidised Israeli produce. Alternatively, both tariff and non-tariff barriers can be placed on imported produce for the same purpose.

#### **4.5 extension services and training**

In defining agricultural extension services Van den Ban and Hawkins (cited in Feder et al, 1998:3) 'arrive at a concept of extension that seems to synthesize diverse perspectives into five goals — transferring knowledge from researchers to farmers; advising farmers in their decision making; educating farmers to be able to make similar decisions in future; enabling farmers to clarify their own goals and possibilities and to realize them; and stimulating desirable agricultural developments (rural guidance). They note that stimulating desirable agricultural development is the most common goal of extension directors.'

This set of services requires intensive investment in human resources and research and development in order to provide extension services of quality.

This is by far the most pressing intervention needed by the Palestinian Authority. The status of extension services has been negatively described by all the major writings on the Palestinian agriculture (World Bank, 1993; PECNDAR, 1995; Abu Arafah et al, 1996; UNCTAD, 1996).

Research labs and stations which were functioning before 1967 faced huge cut downs by the Israeli Civil Administration since the mid-seventies. Stations were closed and research activity came to a virtual standstill. Access to Israeli research was also substantially reduced.

Palestinian NGO's were established around that period and provided some alternative. Three Palestinian universities established faculties for agricultural sciences. Despite, the dedication of the individuals in these organisation their resources were too limited to leave the desired impact or to close the gap which should have been filled by government intervention (PECNDAR, 1995).

Palestinian farmers are approaching the land and water limits imposed upon them by the Israeli occupation regime. Thus, research, training and other extension services are necessary to increase the productivity of Palestinian agriculture. This is also particularly important in the case of livestock raising.

#### **4.6 finance**

As any other economic sector, agriculture requires financial investments. Access to finance has been seen as a critical factor in enabling people to transform their production and employment activities and to exit poverty (Burgess and Pande, 2003). Access to credit is needed to finance investments which are, in turn, necessary to

ensure the continuous growth of a business. In the case poor rural farmers who have no financial capital to finance their investments, and no access to the formal banking sector, micro-credit becomes the primary option. Credit obtained can help in purchasing inputs and supporting households prior to selling the crops.

As discussed earlier this sector is largely lost in Palestine. Micro-credit institutions should be established, encouraged and assisted in delivering services to the poor. However, the system could be faced with some opposition due to the traditional conceptualisation of bank loans as usurious and therefore religiously unacceptable. In this regard the Sudanese experience of establishing an 'Islamic' micro credit system could be highly useful and applicable to the rural areas of the occupied Palestinian territories (see Elhiraika and Ahmed, 1998).

#### **4.7 gender**

It is a generally accepted fact that women in the rural areas of developing countries face unjust treatment in terms of access to land and productive resources. The status of women in Palestine has been described earlier on in this report. Although they are legally entitled to hold land and other assets they are often stripped of this right by social arrangements that renders them as subordinates to their male counter parts, both as daughters and spouses.

Palestinian Central Bureau of Statistics figures for 2005 show that although female composed 22.2% of the Agricultural labour force, they only owned 4.5% of the agricultural holdings.

It is necessary in this regard to empower more women to become actively involved in agriculture. Moreover, the implementation of the Inheritance Law should be overseen in order to ensure that females have access to their land entitlements and can actually practice this right. It is probably very hard to speculate any changes to the inheritance law at this stage due to the fact that it is derived from the Islamic Sharia, and is administered entirely by religious and not civil courts (such idea would seem wilder in light of Hamas' recent landslide victory in the latest Parliamentary elections).

These are sector specific options suggested for the development of the agricultural sector. It is evident from our study of the Palestinian case that to ensure that desired impact of these activities are achieved, Palestinians should be able to exercise sovereignty over their own resources and borders. Palestinian farmers should have unrestricted access to their land and water resources which is currently hindered by a series of Israeli practices, starting from military areas, settlements and most recently the construction of the Apartheid Wall. Israeli exploitation of the available resources renders them unsustainable even for the Israelis themselves. The apparent oblivious attitude for the environmental, land and water concerns of the Israel endangers the sustainability of the whole region as is currently exploiting the River Jordan water system which is a shared water resource for Lebanon, Syria, Jordan and the occupied Palestinian territories.

The suggested policies can be very effective in reducing poverty in the Occupied Palestinian Territories if implemented with a strong political will. Most of these policies are easily implementable by the Palestinian National Authority without any obstacles from Israel and can make a contribution to poverty reduction efforts.



On a political level the Palestinian National Authority should seek to practice its sovereignty, control its borders and protect its resources and citizens for the optimum results.

### 5.1 Scope

This paper attempted to research the status of agricultural development in occupied Palestinian Territories. It also aimed to investigate the elements of an agricultural development plan that are required to reduce poverty in these territories. The scope of the research centred around the West Bank and the Gaza Strip which were occupied by Israel in 1967. This scope was not arbitrarily set, nor is it a reflection of a belief in ethnic segregation through the Two-States model which is widely accepted and promoted in mainstream politics and academia.

The choice of borders is merely a reflection of the development priorities for the regions occupied by Israel in 1967 which are different to those of the areas on which Israel was established in 1948.

The paper devises a theoretical approach to agricultural development which covers human, institutional and natural factors contributing to this process. This model, although draws extensively on the sustainable livelihoods approach terminology, conceptualises the same factors in a different manner, one which is more compatible of the case study. The model also allows for a thorough investigation of exogenous factors through the 'constraints box' tool.

Although still in a basic format this model can be developed and utilised to study other cases. Future developments to the model are still necessary to ensure it applicability.

## **5.2 Findings and policy implications**

Through extensive desk research of available literature, building on previous knowledge of the Palestinian economy and using the relevant statistics from Israeli, Palestinian and international sources, this paper was able to outline the following stylised facts about the status of agricultural development in the Occupied Palestinian Territories:

1. *Palestinian agricultural labour force is characterised by old age, low educational attainment and lack of specific agricultural training.* PCBS statistics for 2001 indicate that 65.7% of Palestinians employed in agriculture have 0 years of schooling, while only 2.4% have received more than 13 years of schooling. For the 2005 survey 91% of those employed in agriculture have indicated that they have not had any agricultural training what so ever. These facts are Detrimental to the productivity and efficiency of the agricultural sector.
2. *Agriculture as a residual employer in the Palestinian economy.* Most of the surveyed literature on the Palestinian agricultural economy has indicated the status of this sector as a residual employer. Statistics both Israeli and Palestinian show that employment in the sector increases at time of conflict or economic recession. It also show that the large part of the Palestinian labour

force dependent on employment in Israel resorts to agricultural employment during times of closure. This fact emphasises the great employment and production potential that the agricultural sector holds.

3. *Lack of finance sources.* The literature also points out that there is a lack of credit facilities for those working in the field. The high risk involved in agriculture drives away both international donors and commercial banks. This highlights the need for a development bank or micro-finance service providers to meet the existing demand for credit in the sector. This is necessary to drive the development of the sector in a manner coupled with poverty reduction.
4. *Agriculture is the prime employer of females.* In certain areas most women are employed in the agricultural sector. This emphasises the poverty reduction potential of the sector as females are globally seen to constitute most of the world's poor.
5. *Land tenure reforms are necessary.* Both in terms of land division structure which in many cases renders certain land parcels unproductive, and in terms of women tenure who inherit half the share of a male counterpart, and are still being denied their rights. In order to achieve poverty reduction such injustices should end since they make women more vulnerable to shocks and makes it easier for them to fall in the poverty trap.
6. *Land is scarce.* Idiotic as it might seem, this fact carries a special meaning in the occupied Palestinian territories. Increased land confiscations and closure has rendered much of the agricultural land inaccessible to Palestinian farmer.

7. *Water shortage.* It is no secret that water shortages are the most pressing problem in the Middle East. However, the situation in Palestine marks a special case as Palestinian groundwater annual recharge exceeds by three times their annual usage. However, Israeli control over their water resources makes them vulnerable to reaching unsustainable levels.
8. *Irresponsible governance.* Irresponsible governance has characterised the occupied Palestinian territories since the occupation and continued with the arrival of the Palestinian National Authority. This is also detrimental to poverty reduction goals as the lack of planning on the part of the PNA and the deliberate policies to impose underdevelopment by the Israelis have ruined the Palestinian economy.
9. *Limited access to market.* Palestinian markets were used as a dumping ground for Israeli produce, Palestinian exports to Israel and the rest of the world faced and still face mountain logistic and bureaucratic restrictions that have hindered the sector's proper development and helped deform the Palestinian economy and ensure its dependency on the Israeli economy.
10. *The conflict hinders economic development.* It has been the Israeli policy of choice to hinder the development of an independent Palestinian economy. Dependency was imposed and Palestinian resources were utilised to serve the purpose of developing the Israeli economy. Israel stands guilty of deliberately inflict direct damage to the Palestinian economy in general and the agricultural sector in particular through confiscations, bulldozing land,

uprooting tree, denying access to land and water and a Maynard of other policy that together helped shape the deformation of the Palestinian economy.

A series of Policy implications have resulted from these findings.

1. *More sustainable water use.* Palestinians are obliged to live despite Israeli harassment. This implies overcoming the Israeli policies using ingenious methods. Waste water management systems and rain water collection are suggested strategy options for the water sector.
2. *Land conservation.* Protecting agricultural land from degradation, land reforms and land reclamation are suggested to increase the resource base of the Palestinian agricultural sector.
3. *Market access and infrastructure.* Improved market infrastructure and agricultural marketing parastatal firm are possible options for marketing produce both locally and in international markets.
4. *Agricultural subsidies,* if necessary.
5. *Human resource development.* Increased research and extension services are seen as very important activities for the development of the sector's productivity.
6. *Finance.* Micro-finance facilities are suggested as possible tools to increase investment in the agricultural sector and reduce risk.
7. *Gender friendly development.* Attention to gender disparities are necessary in order to ensure equal gains from the development process.

The study concludes by emphasising the need for the Palestinian people to exercise its sovereignty over its resources. However, even under the current conditions, many of the suggested policy options are applicable and can yield good results provided the political will to implement them.

- Abu Arafah, A.; Shqueir, A.; Istanbuli, D.; Al-Jafari, M.; Qadous, N. 1996. *Palestinian Agriculture Towards 2000: Potentials and Future Policies*. Society for Austro-Arab Relations: Jerusalem.
- Al-Naqib, F. 2003. *Towards a Palestinian Development Vision*. Palestinian Economic Policy Research Institute: Ramallah. (Arabic)
- Ali, N. 1998. *Economic Growth and Development Under Conditions of Stress: The Agricultural Economy of the Occupied Palestinian Territories and Israeli Occupation*. Birzeit University Development Studies Programme: Ramallah.
- Antle, J. and Diagana, B. 2003. Creating Incentives for the Adoption of Sustainable Agricultural Practices in Developing Countries: the Role of Soil Carbon Sequestration. *American Journal of Agricultural Economics*. 85 (5):1178-1184.
- Asadi, F. 1990. How Viable Will the Agricultural Economy Be in the New State of Palestine? *GeoJournal* 21(4): 375-383.
- Auty, R. 1997. Natural Resource Endowment, the State and Development Strategy. *Journal of International Development*. 9(4): 651-663.
- Awartani, H. (ed.)1997. *Prospects for Investment in the West Bank Northern Governerates*. Centre for Palestine Research and Studies: Nablus.(Arabic)
- Awartani, H. 1997. Managing Agricultural Development: Toward a New Organisational Framework. In Awartani, H. (ed.)1997. *Prospects for Investment in the West Bank Northern Governerates*. Centre for Palestine Research and Studies: Nablus. pp. 204-211. (Arabic)
- Barbier, E. 1997. The Economic Determinants of Land Degradation in Developing Countries. *Philosophical Transcripts*. 352: 891-899.
- Bebbington, A. 1999. Capitals and Capabilities: A Framework for Analyzing Peasant Viability, Rural Livelihoods and Poverty. *World Development*. 27(12): 2021-2044.
- Bebbington, A. and Perreault, T. 1999. Social Capital, Development, and Access to Resources in Highland Ecuador. *Economic Geography*. 75(4): 395-418.



- Bird, K. 2004. *A Framework to Analyse Linkages Between Trade Policy, Poverty Reduction and Sustainable Development*. Overseas Development Institute: UK.
- Burgess, R. and Pande, R. 2003. *Do Rural Banks Matter? Evidence From the Indian Social Banking Experiment*. London School of Economics: London.
- DfID. 2003. *Agriculture and Poverty Reduction: Unlocking the Potential*. DfID Policy Paper.
- DfID, 2004a. *Making Agricultural Markets Work for the Poor*. DfID: UK.
- DfID. 2004b. *Official Development Assistance to Agriculture*. DfID: UK.
- DfID, 2004c. *Agricultural Trade and Poverty Reduction: Opportunity or Threat? DfID: UK*.
- DfID. 2004d. *Land reform, agriculture and poverty reduction*. DfID Policy Division: UK.
- Echeverría, R. 1998. *Strategic Elements for the Reduction of Rural Poverty in Latin America and the Caribbean*. Inter-American Development Bank: Washington, D.C.
- Elhiraika, A. and Ahmed, S. 1998. Agricultural Credit Under Economic Liberalization and Islamization in Sudan. *AERC Research Paper 79*. African Economic Research Consortium: Nairobi
- Feder, G; Willett, A. and Zijp, W. 1998. *Agricultural Extension — Generic Challenges and Some Ingredients for Solutions*. World Bank: Washington, D.C.
- Istanbuli, D. 2002. Rural Poverty: Palestinian Participatory Poverty Assessment Project. Ministry of Planning and International Cooperation and United Nations Development Programme: Ramallah.
- Jacoby, H. 2000. Access to Markets and the Benefits of Rural Roads. *The Economic Journal*. 110: 713-737.
- Mellor, J. 1999. *Faster, More Equitable Growth – The Relation Between Growth in Agriculture and Poverty Reduction*. Abt Associates Inc. : Cambridge, MA., USA.
- Naqib, F. 2003. Economic Aspects of the Israeli Palestinian Conflict- The Collapse of the Oslo Accord. *Journal of International Development*. 15: 499-512.

- Nasr, M. 2003. *Enhancing the Capacity of the Palestinian Economy*. Palestinian Economic Policy Research Institute: Ramallah. (Arabic)
- OCHA. 2005. *The Humanitarian Impact of the West Bank Barrier on Palestinian Communities*. OCHA: Jerusalem.
- PCBS. 1999. *Labour Force Survey: Main Findings, (July-September, 1999) Round*. PCBS: Ramallah.
- PCBS. 2002. *Labour Force Survey: Annual Report, 2001*. PCBS: Ramallah.
- PCBS. 2004. *Deep Palestinian Poverty in the Midst of Economic Crisis*. PCBS and IBRD: Ramallah.
- PCBS. 2005a. *MDGs Indicators in Palestine*. PCBS: Ramallah.
- PCBS. 2005b. *Statistical Abstract of Palestine 06*. PCBS: Ramallah.
- PECDAR. 1995. *Agriculture Institutional and Policy Study*. PECDAR: Palestine.
- PENGON. 2003. *The Wall in Palestine: Facts, Testimonies, Analysis and Call to Action*. PENGON: Jerusalem.
- Rahman, A. and Westly, J. 2001. The Challenge of Ending Rural Poverty. *Development Policy Review*. 19(4):553-562.
- Roy, S. 1999. De-development Revisited: Palestinian Economy and Society Since Oslo. *Journal of Palestine Studies*. 28(3): 64-82.
- Sahliyah, E. 1982. West Bank Industrial and Agricultural Development: The Basic Problems. *Journal of Palestine Studies*. 11(2): 55-69.
- Sayigh, Y. 1986. The Palestinian Economy under Occupation: Dependency and Pauperization. *Journal of Palestine Studies*. 15(4): 46-67.
- Shehadeh, R. 1988. Occupier's Law and the Uprising. *Journal of Palestine Studies*. 17(3): 24-37.
- Smith, L. 2004. Assessment of the Contribution of Irrigation to Poverty Reduction and Sustainable Livelihoods. *Water Resources Development*. 20(2):243-257.
- Tamari, S. 1981. Building Other People's Homes: The Palestinian Peasant's Household and Work in Israel. *Journal of Palestine Studies*. 11(1):31-66.
- Tbeileh, A. 1997. The Agricultural Sector in Palestine: Obstacles and Potential. In Awartani, H. (ed.) 1997. *Prospects for Investment in the West Bank*

*Northern Governerates*. Centre for Palestine Research and Studies:  
Nablus. pp. 193-203. (Arabic)

UNCTAD. 1996. *Prospects for Sustained Development of the Palestinian Economy: Strategies and Policies for Reconstruction and Development*. United Nations Publications: Geneva.

UNDP. 2002. *Mellenium Development Goals: A Progress Report, 2002, Occupied Palestinian Territories*. UNDP: Jerusalem. (Arabic)

World Bank. 1993. *Developing The Occupied Territories, an Investment in Peace: Agriculture*. Volume 4. World Bank: Washington.