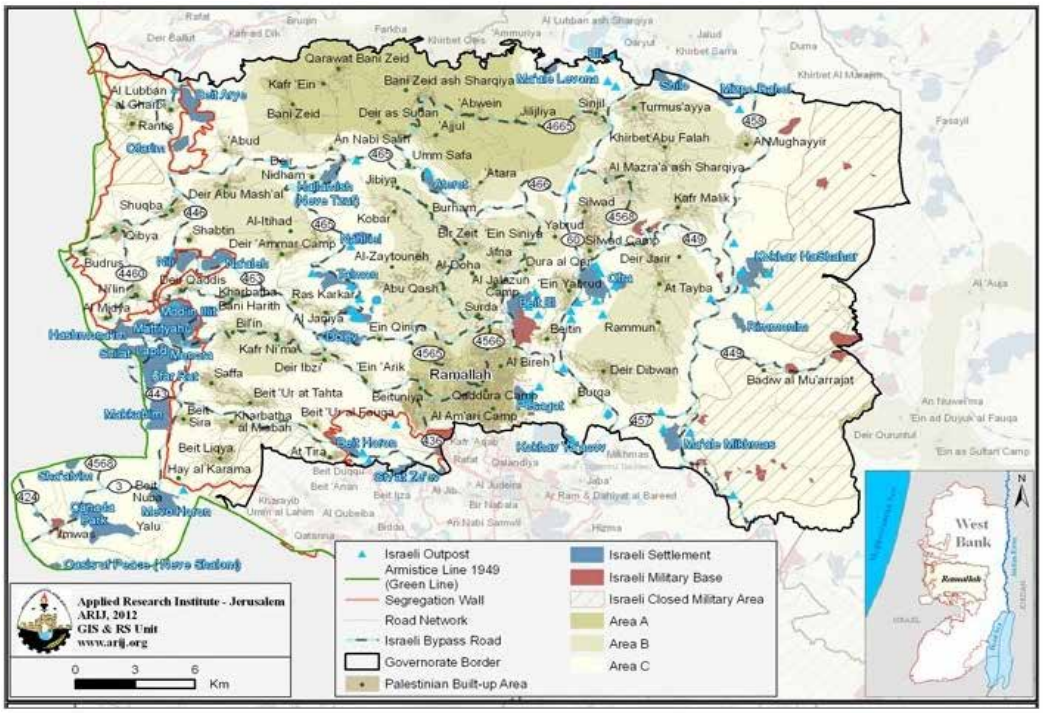
Locality Profiles and Needs Assessment in the Ramallah & Al Bireh Governorate



ARIJ welcomes any comments or suggestions regarding the material published herein and reserves all copyrights for this publication. This publication is available on the project's homepage:

http://proxy.arij.org/vprofile/ramallah

and ARIJ homepage:

http://www.arij.org

2014

Acknowledgments

ARIJ hereby expresses its deep gratitude to the Spanish Agency for International Cooperation for Development (AECID) for their funding of this project.

ARIJ is grateful to the Palestinian officials in the ministries, municipalities, joint services councils, village committees and councils, the Palestinian Central Bureau of Statistics (PCBS) and civil society organizations for their assistance and cooperation with the project team members during the data collection process.

Editors

Jad Isaac

Roubina Ghattas ***Nader Hrimat***

Contributors

Iyad Khalifeh

Elia Khalilieh

Ayman Abu Zahra

Juliette Bannoura

Enas Bannourah

Nadine Sahouri

Hamza Halaybeh

Flora Al-Qassis

Ronal El Zughayyar

Anas Al Sayeh

Poppy Hardee

Issa Zboun

Jane Hilal

Suhail Khalilieh

Table Of Contents

PART ONE
Introduction

Locality Profiles and Needs Assessment in Ramallah & Al Bireh Governorate

This study comes as a result of a comprehensive analysis of all localities in Ramallah & Al Bireh Governorate. It aims at depicting the overall living conditions in the region along with presenting plans to assist in developing the local populations' welfare and livelihoods. This has been accomplished through the 'Village Profile and Needs Assessment in Jerusalem, Ramallah and Jericho / Al Aghwar', a project funded by the Spanish Agency for International Cooperation for Development (AECID).

1.1. Project Description and Objectives:

The 'Village Profile and Needs Assessment in Jerusalem, Ramallah and Jericho / al Aghwar' was designed to study, investigate, analyze and document the socio-economic conditions in each of the aforementioned regions. On the basis of this investigation, resultant programs and activities necessary to mitigate the impact of the current insecurity of these conditions were formulated and presented in this integrated report. In undertaking this, there has been a particular focus on water, environment, and agricultural issues in the region.

The project's objectives were to survey, analyze and document the available natural, human, socioeconomic and environmental resources in Ramallah, along with their existing limitations and the need for the development of rural and marginalized areas in the region. In addition, the project aims at preparing strategic developmental programs and activities to mitigate the impact of the current political, social, and economic instability; the main focus being on the agricultural sector, given its size and importance to human welfare in Ramallah. Examples of analysis conducted in each respective location includes measuring the impact of the Israeli occupation and settlement construction/ expansion in Palestinian communities, the efficiency of local water services/management, the status of agricultural production/marketing, food security levels, household educational level etc.

1.2. Project Activities:

1.2.1. Data Collection:

Demographic profiling: a consideration of border demarcations

During the methodological design of the project, the selection of regions and localities from which data would be retrieved was an essential consideration. All localities included within Ramallah and Al Bireh Governorate according to various set administrative boundaries were selected to be targeted for the study. There are three different historical administrative boundaries for the Palestinian territory:

i. The borders drawn by the British Government in 1922 during the 'Mandate Period.'
ii. The physica classifications adopted by the Palestinian National Authority (PNA) in 1994.
iii. The 'Integrated Physical Classification System' developed by the Palestinian Ministry of Planning, the Ministry of Local Government, the Palestinian Central Bureau of Statistics (PCBS), and the Central Election Commission (CEC).

In all profiled localities the 'Integrated Physical Classification System' (IPCS) was chosen for boundary demarcation and subsequent data collection. This was done so on the grounds that these delineations are comparatively recent and are used in national data collection projects by bodies such as the PCBS, and are deemed the most suitable for a surveying project and research purposes reflective of the current Palestinian context.

In terms of land coverage, Ramallah & Al Bireh Governorate covers 855,587 dunums of land. Approximately 46,519 dunums of these are classified as Palestinian built-up areas, whilst the remaining 34,157 dunums are Israeli settlements (ARIJ – GIS Unit, 2011b). According to the Palestinian IPCS, Ramallah & Al Bireh Governorate has been divided into 75 localities, which are identified under 73 main administrative boundaries. These boundaries are further classified into three main administrative regions: those run by Municipal Councils, Village Councils, and regions under the authority of refugee camps/project committees. See Table 1 and Map 1 for a presentation of the different administrative boundaries by location and council.

Table 1: Name of surveyed localities by type, population number and administrative body

Locality	Population	Type	Administrative body
Abu Qash	1404	Rural	Village Council
Al Itihad	6803	Urban	Municipality
Al Bireh	38,202	Urban	Municipality
Al Janiya	1163	Rural	Village Council
Al Zaytouneh	6190	Rural	Municipality
At Tayba	1,452	Rural	Municipality
At Tira	1358	Rural	Village Council
Al Lubban al Gharbi	1476	Rural	Village Council
Al Midya	1301	Rural	Village Council
Al Mazra'a ash Sharqiya	4495	Urban	Municipality
Al Mughayyir	2368	Rural	Village Council
An Nabi Salih	534	Rural	Village Council
Umm Lasafa	612	Rural	Projects Committee
Budrus	1399	Rural	Village Council
Badiw al Mu'arrajat	753	Rural	No Local Council
Burqa	2090	Rural	Village Council
Burham	616	Rural	Village Council
Bi'lin	1701	Rural	Village Council
Bani Zaid	5515	Urban	Municipality
Bani Zaid ash Sharqiya	5083	Urban	Municipality
Beit Sira	2749	Rural	Village Council
Beit 'Ur at Tahta	4372	Urban	Village Council
Beit 'Ur al Fouqa	864	Rural	Village Council
Beit Liqya	7,710	Urban	Municipality
Beit Nuba	249	Rural	Projects Committee
Beituniya	19,761	Urban	Municipality
Beitin	2143	Rural	Village Council
Birzeit	4,529	Urban	Municipality
Turmos'ayya	3736	Rural	Municipality
Jifna	1716	Rural	Village Council
Jaljilya	741	Rural	Village Council
Jibya	148	Rural	Village Council
Khirbet abu Falah	3996	Rural	Village Council

Locality	Population	Type	Administrative body
Kharbatha Bani Harith	2846	Rural	Village Council
Kharbatha al Misbah	5211	Rural	Village Council
Dura al Qar'	2897	Rural	Village Council
Deir as Sudan	1991	Rural	Village Council
Deir abu Mash'al	3522	Rural	Village Council
Deir 'Ibzi'	2069	Rural	Village Council
Deir Jarir	3986	Rural	Village Council
Deir Dibwan	5252	Urban	Municipality
Deir Qaddis	1942	Rural	Village Council
Deir Nizam	879	Rural	Village Council
Ras Karkar	1663	Rural	Village Council
Ramallah	27,460	Urban	Municipality
Rammun	2626	Rural	Village Council
Rantis	2534	Rural	Village Council
Silwad	6123	Urban	Municipality
Sinjil	5236	Urban	Municipality
Shabtin	844	Rural	Village Council
Shuqba	4497	Rural	Village Council
Surda	1031	Rural	Village Council
Saffa	3802	Rural	Village Council
Aabood	2084	Rural	Village Council
Abwein	3119	Rural	Municipality
Ajjul	1237	Rural	Village Council
Attara	2270	Rural	Municipality
Ein Sinya	711	Rural	Village Council
Ein 'Arik	1567	Rural	Village Council
Ein Qinya	812	Rural	Village Council
Ein Yabrud	2999	Rural	Village Council
Qibya	4901	Rural	Village Council
Qarawat Bani Zeid	2915	Rural	Village Council
Kafr 'Ein	1743	Rural	Village Council
Kafr Malik	2787	Rural	Village Council
Kafr Ni'mah	3750	Rural	Village Council
Kobar	3677	Rural	Village Council
Al Am'ari Camp	5014	Camp	Camp Services Committee
Al Jalazon Camp	7813	Camp	Camp Services Committee
Deir Ammar Camp	1834	Camp	Camp Services Committee
Silwad Camp	382	Camp	Camp Services Committee
Qaddura Camp	1208	Camp	Camp Services Committee
Ni'lin	4,573	Urban	Municipality
Yabrud	644	Rural	Village Council

Source: PCBS, 2009e.

1.2.2 Data Analysis

The methodological approach of the village profiling project is centered upon community participation, with a focus on the inclusion of marginalized persons and groups in data analysis. Therefore, data collection involved the development of a community questionnaire by village profiling staff, which was subsequently filled by locality officials on behalf of numerous different groups (women, youth, agricultural workers, housekeepers etc.) in the Governorate localities. This was carried out under the supervision of the project specialists.

The data provided in the questionnaire dealt with profiling the needs of different localities through asking questions relating to economic, cultural, social, and health issues. In addition to this, data from the Palestinian Central Bureau of Statistics (PCBS), the Ministry of Agriculture (MoA), the Ministry of Health (MoH) and the Ministry of Education and Higher Education (MOHE) and other related organizations has been analyzed and collated in one village profile. This includes data concerning; demography, history, education, health, economy, natural resources, agriculture, geopolitical conditions, infrastructure, local institutions, and services.

All information taken from the PCBS refers to the Governorate of 'Ramallah & Al Bireh', whereas other data sources may pertain only to Ramallah boundaries. In addition, ARIJ's GIS (Geographic Information System) and Remote Sensing Unit developed explanatory maps for each locality in the Governorate. Each profile contains 3 maps: a location, information, and a land use/land cover map.

Seventy-three locality profiles were developed, which includes all localities in the Ramallah & Al Bireh Governorate. Further to this, there is a final project presentation to be produced, which will summarize and present the finding of all village profiling efforts in Ramallah. In addition, each profile contains a list of each locality's developmental needs and priorities. This report contains integrated information about Ramallah & Al Bireh Governorate, and needs for developmental project proposals (formulated as a response to the collected data) at a Governorate level. The completed profiles of all communities with their fact sheets and their needs for development matrixes are available online at (http://proxy.arij.org/vprofile/Ramallah).

Map 1: Localities' administrative boundaries

Source: ARIJ - GIS Unit, 2011a

1.2.3 Participatory Rapid Appraisal (PRA) Workshops

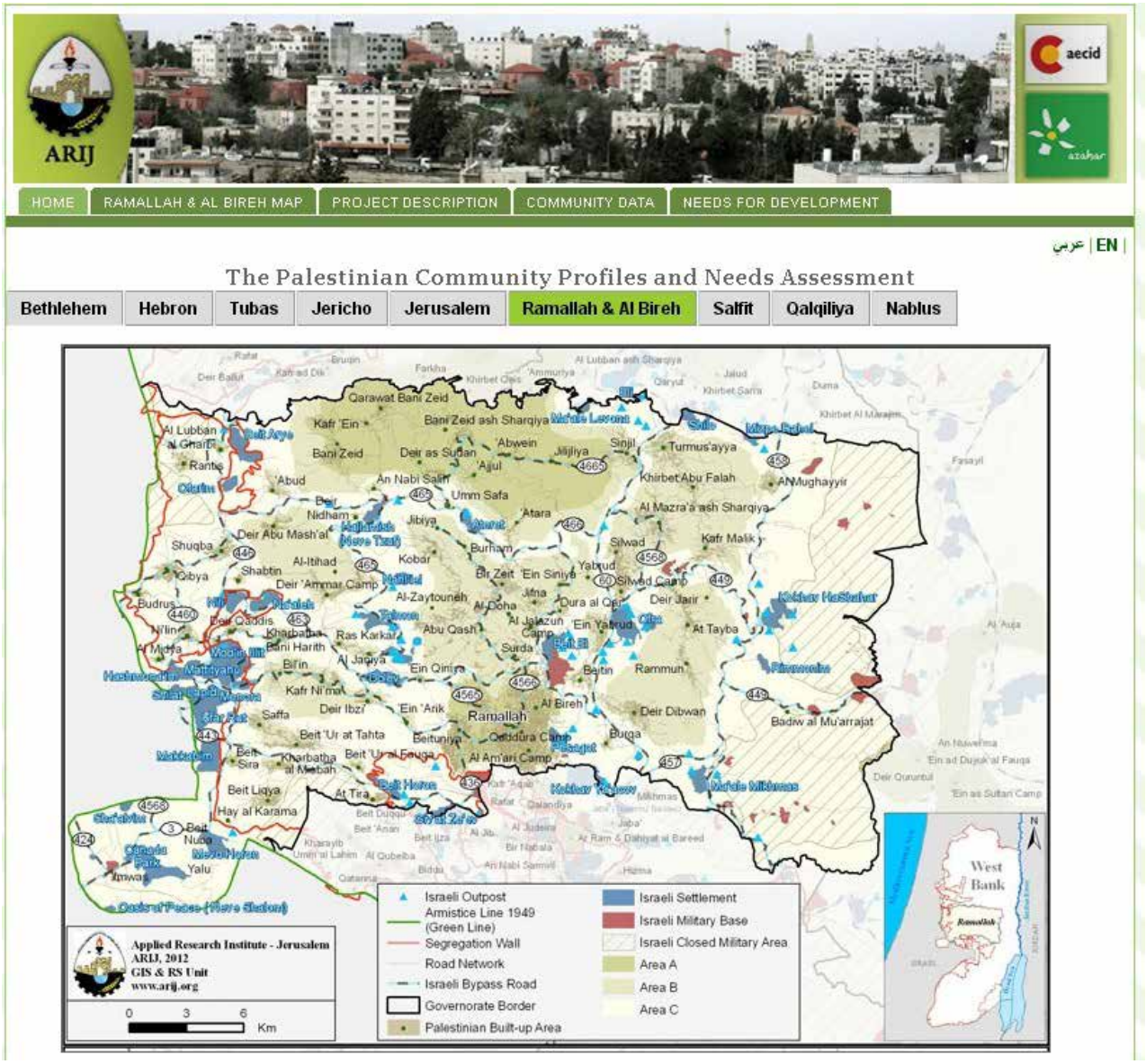
Many meetings, interviews and focus groups were conducted with farmers, local authorities and active institutions in the area in order to conduct a collective analysis, upon which all resultant development plans have been based.

The aim of the Participatory Rapid Appraisal (PRA) approach was to learn from the communities and the key persons/institutions working within them regarding their knowledge, attitudes and practices concerning agriculture and the management of available natural resources. This was carried out with the focus of enabling local people to assess these issues, and allow them to make their own plans to address them.

Seventy one PRAs took place in the villages' councils and municipalities, in addition to four PRA workshops at the Joint Service Council level (table 1). The 71 PRAs were conducted (one for each administrative locality) along with a Governorate level meeting to gain feedback from an authority perspective, involving the preparation of a needs assessment and development planning proposal in response to information gathered from previous workshops and meetings. A final workshop is conducted at the end of Ramallah village profiling. The collected data was documented and analyzed, and several developmental plans and projects were formulated. As a result 73 village profiles were developed and subsequently translated into both Arabic and English.

1.2.4 Internet Database

ARIJ's Computer and Information Technology (IT) unit developed an online resource for Ramallah & Al Bireh Governorate locality profiles in Arabic and English. All data has been posted on the internet in a well-organized and comprehensive database, which is easy to navigate and accessible to all. The profiles, maps, and fact sheets, needs for development for every locality as well as the integrated proposed project profiles for every locality can be found at the following website (http://proxy.arij.org/vprofile/Ramallah)



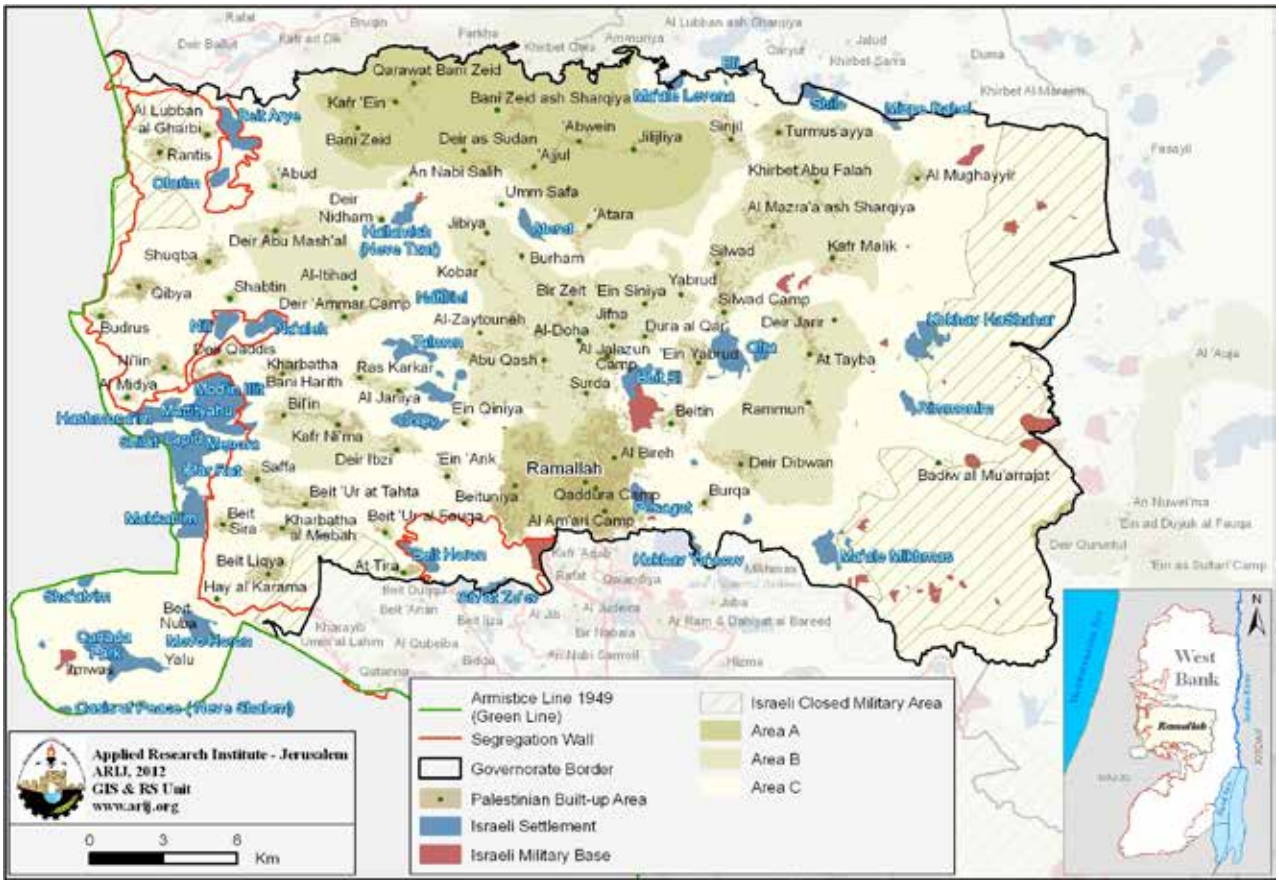
1.3 Location and Physical Characteristics

Ramallah & Al Bireh Governorate is located along the middle of the West Bank. It is bordered by Nablus & Salfit Governorates to the north, Jericho to the east, Jerusalem to the south, and the Armistice Line (the Green line 1949) to the west. As a region, Ramallah covers a total land area of 855,587dunums (855.587 km2), distinguished into eighteen major land use classes. These include Palestinian built up areas, Israeli settlements, closed military areas, military bases, open spaces, forests and construction sites (ARIJ – GIS Unit, 2011b) (See Map 2).

There are 73 geographical localities in Ramallah Governorate and 68 administrative areas. Some localities are run by village councils (49), by project committees (2) and others by municipalities (18). There are additionally four refugee camps in the area, run by camp committees, and one small area not under any official administration. It is noted that Palestinian built-up areas constitute 5.44 % of the total area of the Governorate.

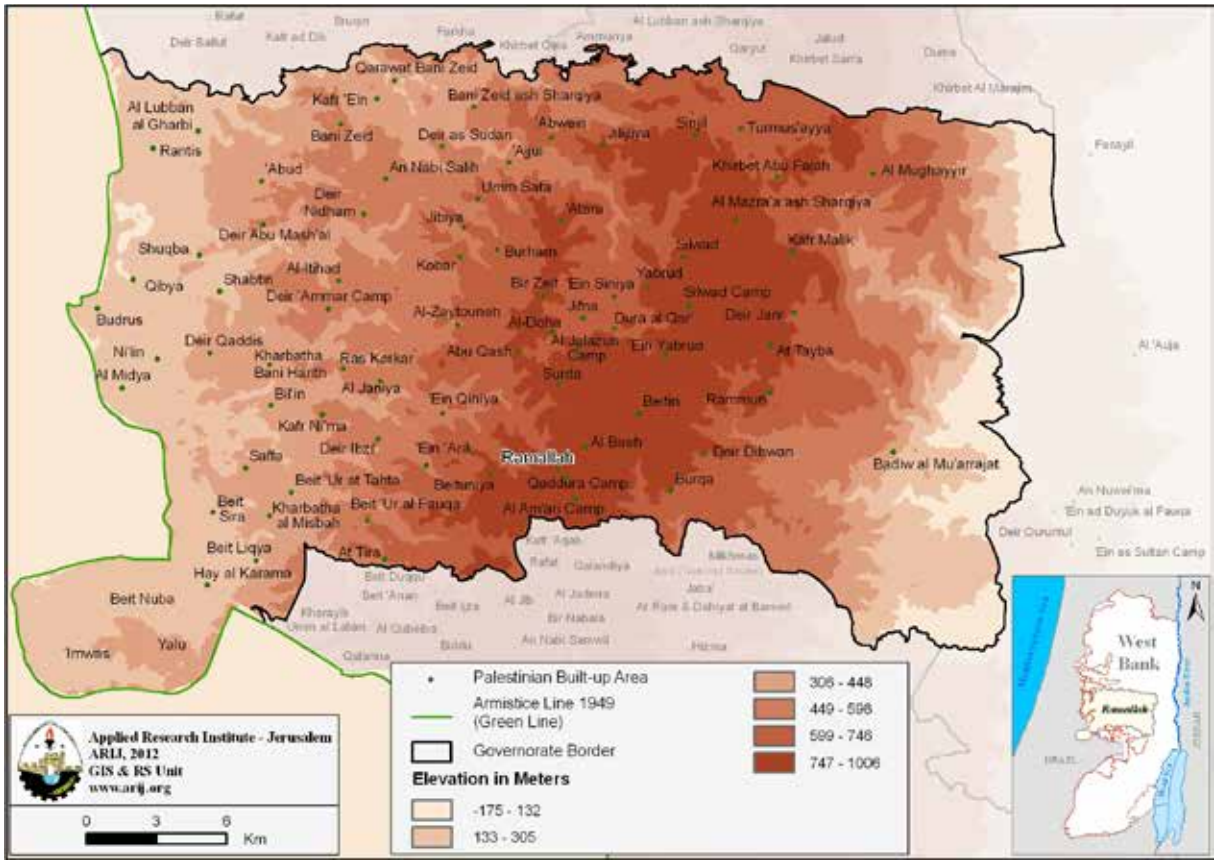
Ramallah & Al Bireh Governorate is further characterized by great a variation in its topography and altitude, being dominated by the topography of the Jordan Rift Valley. It has an elevation varying between 219m above sea level in the west, and 937m above sea level toward the west and northwest. (ARI – GIS Unit, 2011c) (See Map 3).

Map 2: Location and borders of Ramallah & Al Bireh Governorate



Source: ARIJ - GIS Unit, 2011a.

Map 3: Topography of the Ramallah & Al Bireh Governorate

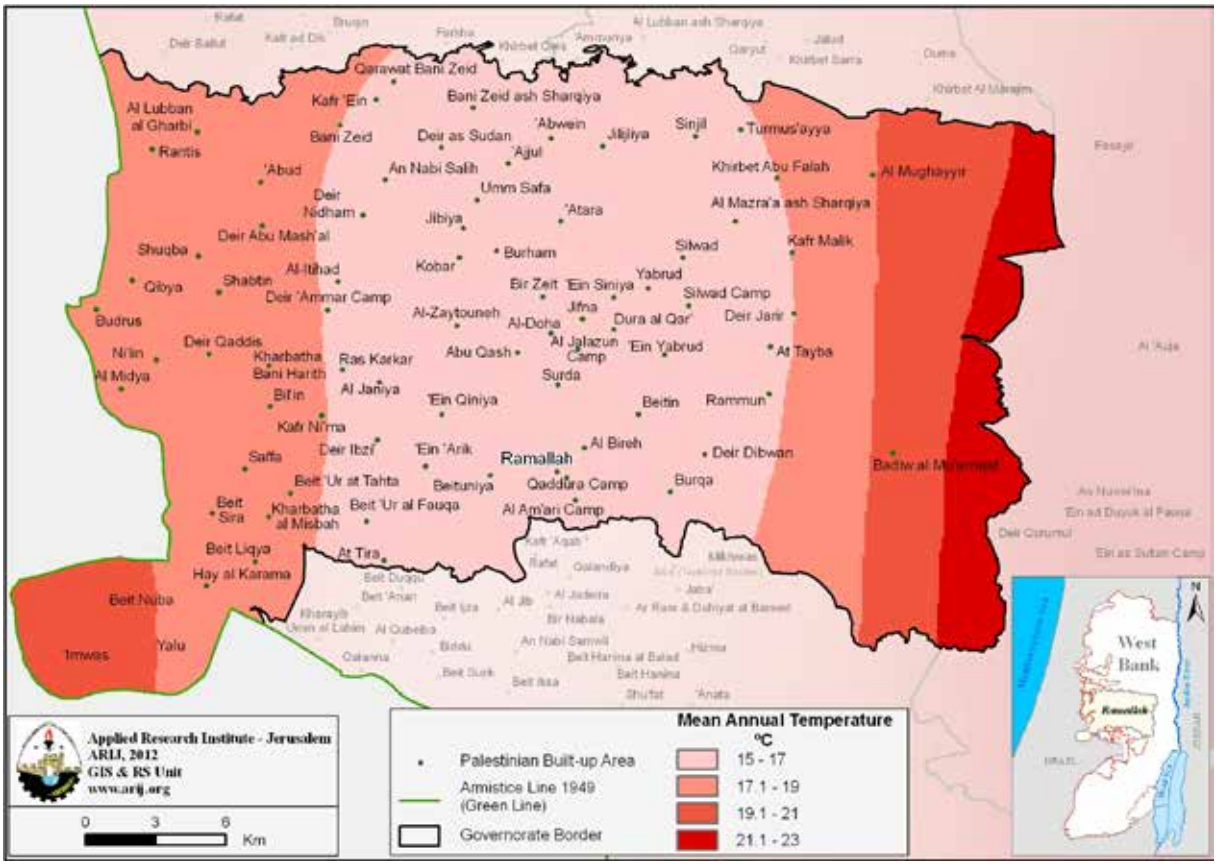


Source: ARIJ - GIS Unit, 2011a.

Ramallah & Al Bireh Governorate's climate is determined as hot and dry in the summer, with the presence of mild winters. The mean average temperature across the region is 19 0C, with temperatures, each annum ranging on average between 15 0C in and 17 0C (ARIJ - GIS Unit, 2011a) (See map 4). Furthermore, the region's continuous warm weather and alluvial soil makes the area good for agricultural production, one of the contributing factors to its success in having the third largest area of agricultural lands amongst West Bank Governorates.

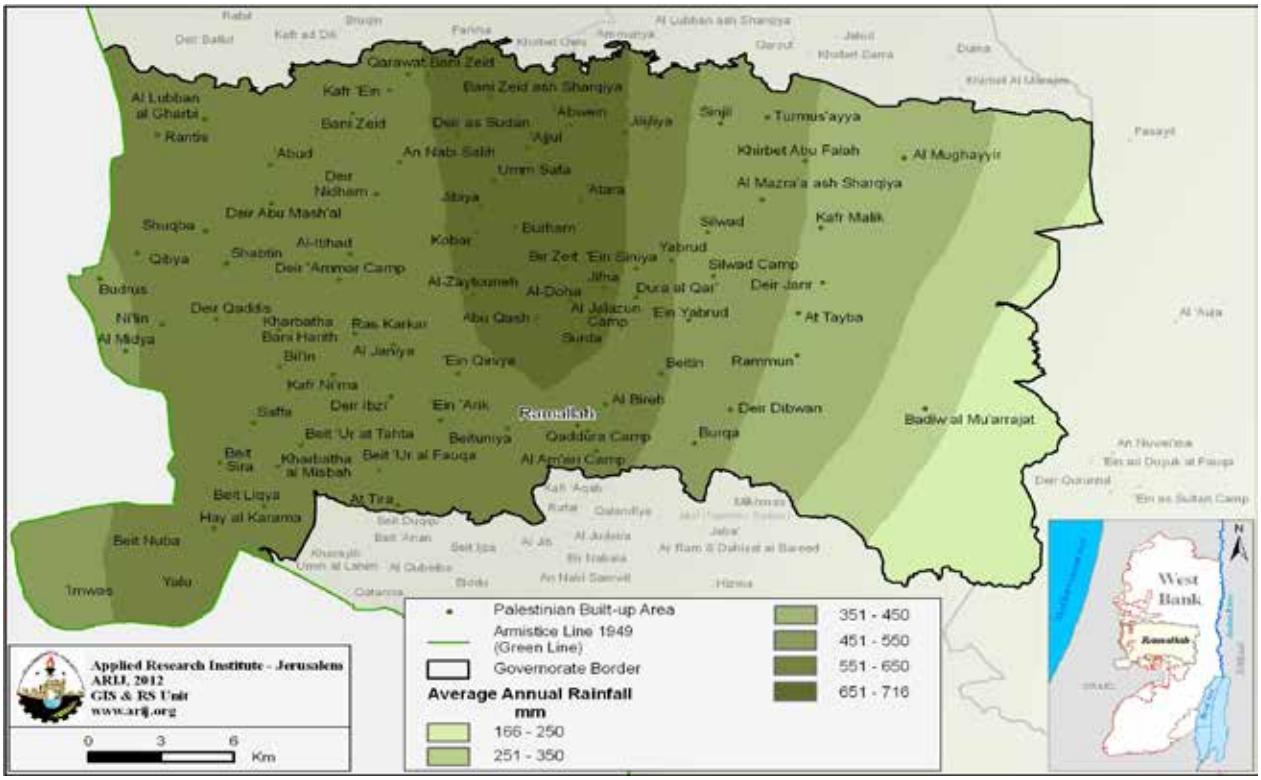
The climate of the Ramallah & Al Bireh Governorate ranges from semi-humid to semi-dry with an increase in aridity towards eastern locations. Summers in Ramallah & Al Bireh Governorate are hot and semi-dry, while the quantity of mean rainfall varies from year to year. The mean annual rainfall registered for 2012 was 570.6mm, forming 107% of historical average rainfall (http://www.pmd.ps/ar/am6ar.php). However, in the year 2011, the yearly rainfall was substantially lower with an average of 405.7mm forming only 65% of historical average rainfall (http://www.pmd.ps/ar/am6ar.php). Given the general water scarcity existing during past years since several years, the effect of drought is still affecting the ground waters' level causing disruption for cultivation processes and agro commodities production, which all affect food consumption and food intake patterns at household level.

Map 4: Temperature in the Ramallah & Al Bireh Governorate



Source: ARIJ - GIS Unit, 2011a.

Map 5: Rainfall in the Ramallah & Al Bireh Governorate



Source: ARIJ - GIS Unit, 2011a.

PART TWO: Location, Physical Characteristics & Socio-Economic Conditions in Ramallah & Al Bireh Governorate

2.1 Population

The total population of Ramallah & Al Bireh Governorate in 2007 was 279,730 people, representing approximately 12% of the total population of the West Bank[1].
Table 3 (below) shows the distribution of the population by sex and type of region (urban, rural or camp).

Table 3: Population in Ramallah & Al Bireh Governorate by area type and gender disaggregation, 2007

Location	Male	Female	Total
Urban Area	72,748	72,366	**145,114**
Rural Area	59,804	58,561	**118,365**
Camp Area	8,275	7,976	**16,251**
Total Area	**140,827**	**138,903**	**279,730**

Source: PCBS, 2007/8.

According to the PCBS's classification[2] for the types of the Palestinian localities in their 2007 statistical census, 51.87% of Ramallah & Al Bireh Governorate's population live in urban areas, 42.31% in rural areas, and 5.81% inhabit refugee camps (See Table 3). Ramallah & Al Bireh Governorate consists of 73 administrative districts, with 18 Municipalities. The major districts in terms of population size are Al Bireh (38,202 persons), Ramallah (27,460) and Beituniya (19,761), all of which are classified as 'Urban Areas'.

Table 4 compares the population of the Ramallah & Al Bireh Governorate between 1997 and 2007.

Table 4: Total Population of the Ramallah & Al Bireh Governorate in 1997 and 2007

Population of Ramallah & Al Bireh Governorate	Years	
	1997	2007
Male	106,988	140,827
Female	106,594	138,903
Household	34,653	52,834
Housing Units	46,691	66,704
Total Population	**213,582**	**279,730**

Source: PCBS, 2009a

The total population of the Ramallah & Al Bireh Governorate is estimated to have grown to 279,730 in 2007, representing approximately a 31% increase since the 1997 census. This demonstrates an average annual growth rate of 3.1%.

In 1997, refugees constituted an estimated 26.95% of Ramallah & Al Bireh Governorate's population.

1 Includes population counted during the period 1-16/12/2007 and uncounted population estimates according to a post enumeration survey.

2 *An urban area is any locality whose population amounts to 10,000 persons or more. This applies to the entire Governorates' center regardless of their size. Additionally, it refers to all localities whose population varies from 4,000 to 9,999 persons- provided they have at least four of the following elements: a public electricity network, a public water network, a post office, a health center with a full-time physician and a school offering a general secondary education certificate.

*A rural area is any locality whose population is less than 4,000 persons or whose population varies from 4,000 to 9.999 persons lacks four of the aforementioned elements.

*A refugee camp is any locality referred to as a refugee camp and administrated by the United Nations Relief and Work Agency for Palestinian Refugee in the Near East (UNRWA).

By 2007, refugee density in the Governorate is thought to have slightly increased to 27.7%[3] (See Table 5).

Table 5: Total refugees' population in the Ramallah & Al Bireh Governorate, 2007

Governorate / Region	Total	Refugee Status		
		Not Stated	Not-refugee	Refugee
Ramallah & Al Bireh	**262,563**	6,922	178,830	76,811
West Bank	**2,279,969**	55,351	1,600,551	624,067

PCBS. 2009. Census Final Results – Summary- (Population, Buildings, Housing, Establishments)- Ramallah & Al Bireh Governorate . Ramallah – Palestine.

In addition, the average household size across the Governorate was recorded at 5.2 members, in comparison with 5.8 for the whole Palestinian Territory. Table 6 (below) provides updated data regarding housing conditions in Ramallah & Al Bireh Governorate:

Table 6: Selected indicators for housing conditions in Ramallah & Al Bireh Governorate, 2007

Housing Indicators	
Average Household Size	**5.3**
Average of Rooms in housing Units	**2.39**
Average of Housing Density	**1.3**

PCBS. 2009. Census Final Results – Summary- (Population, Buildings, Housing, Establishments)- Ramallah & Al Bireh Governorate . Ramallah – Palestine.

The 2007 PCBS Census further shows that 38.12% of the population in Ramallah & Al Bireh Governorate were less than 15 years of age, 55.44% were between the ages 15 - 64 years, 3.89% were 65 years of age or older, and 2.55% did not state their age.

Table 7 presents the population in the Governorate by age and by area.

Table 7: Age Statistics for Ramallah & Al Bireh Governorate

Governorate	Age Group,2007				
	Sex	0 - 14	15 – 64	+ 65	Not Stated
Ramallah & Al Bireh	**M**	51,047	73,658	4,040	3,485
	F	49,031	71,900	6,182	3,220

PCBS. 2009. Census Final Results – Summary- (Population, Buildings, Housing, Establishments)- Ramallah & Al Bireh Governorate . Ramallah – Palestine.

2.2 Labor Force

In terms of the economy, Ramallah & Al Bireh Governorate registered an unemployment rate of 16.3% in 2013 compared with an average of 18.6 % for the entire West Bank. The labour force was recorded as forming approximately 43.8% of the population. The average daily wage in 2013 was 102.3 NIS (around $29.4 at the time of publication). This is higher than the average daily wage for the West Bank, which is calculated at 88.9 NIS (PCBS 2014a) (See Table 8).

3 http://www.unrwa.org/userfiles/2010012035949.pdf

Table 8: Labor force participation rate, unemployment rate and average daily wage in NIS for wage employees in the Ramallah & Al Bireh Governorate, 2013

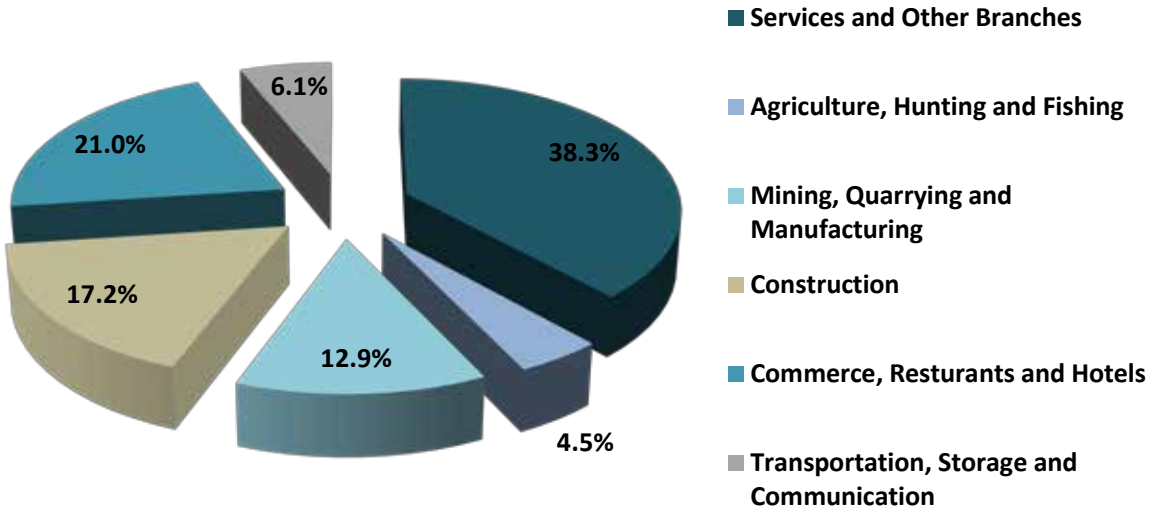
Governorate	Labor Force Participation Rate	Unemployment Rate	Average Daily Wage in NIS for Wage Employees
Ramallah & Al Bireh	43.8	16.3	102.3*

**The workers in Israel and Settlements are not included.*

Source: PCBS, Labor Force Annual Survey, 2014.

The PCBS's annual report of their labor force survey conducted for 2013 showed that the 'services and other branches' sector ranked first in the number of working persons in Ramallah (38.3%) followed by the 'commerce, restaurants and hotels sector with 21%. This was followed by the construction' sector with 17.2%, and 'mining, quarrying and manufacturing' ranked fourth at 12.9%. The 'transportation, storage and communication activities' sector ranked fifth with 6.1%, and 'agriculture, hunting and fishing' came sixth with 4.5%, as listed in Table 8 (PCBS, 2014). Ramallah & Al Bireh Governorate has the highest percentage of formally registered employed persons working in the services sector in the entire West Bank (See Figure 1 and Table 9).

Figure 1: Labor force activity for the Ramallah & Al Bireh Governorate (% amongst employed persons)



Source: PCBS, 2014.

Table 9: Percentage distribution of employed persons from the Ramallah & Al Bireh Governorate by economic activity, 2013

Economic Activity	Governorate (%)	
	Ramallah	West Bank
Agriculture, hunting and fishing	4.5	11.5
Mining, quarrying and manufacturing	12.9	15.1
Construction	17.2	19.3
Commerce, restaurants and hotels	21.0	19.8
Transportation, storage and communication	6.1	5.6
Services and other branches	38.3	28.7
Total	**100**	**100**

Source: PCBS, Labour Force Survey, 2014

According to the distribution of employed persons by employment sector during the first quarter of 2014, the private sector has the biggest share of employed persons in Ramallah & Al Bireh Governorate followed by the public sector, whilst 12.3% of the labor force works in Israel and Israeli settlements (See Table 10).

Table 10: Percentage distribution of employed persons aged 15 years and above in the Ramallah & Al Bireh Governorate by sector (ILO Standards), January - March, 2014

Governorate	Sector (%)				Total
	Public Sector	Private Sector	Other Sectors	Israel and Settlements	
Ramallah	19.5	65.6	2.6	12.3	**100**
West Bank	15.9	65.7	1.8	16.6	**100**

Source: PCBS, Labour Force Survey (January - March, 2014) Round (Q1/2014)

It is worth noting that Ramallah & Al Bireh Governorate has the lowest rate of people working in Israel and its settlements (9.8% of the labor force), compared to a rate of 15.5% across the West Bank. Ramallah & Al Bireh Governorate has the highest rate of people working in the same Governorate (88.6%) in the Palestinian Territory, compared to 75.3% in the West Bank as a whole.

Table 11: Percentage distribution of employed persons aged 15 years and over in the Ramallah & Al Bireh Governorate by place of work (ILO Standards), April- June, 2013

Governorate	Percentage of employment	Place of work (%)			
		Israel and settlements	Same Governorate	Other Governorate	Total
Ramallah & Al Bireh	86	9.8	88.6	1.6	**100**
West Bank	83.2	15.5	75.3	9.2	**100**

Source: PCBS, PCBS, Labour Force Survey (April-June, 2013) Round (Q2/2013)

The 2007 PCBS census results for Ramallah & Al Bireh showed that 67.5% of the population fell within the working age group 10 years and above[4] . Of the 188,775 people within this group, approximately 35.6% were economically active; 19.2% female and 80.8% male. Consequently, 64% were not economically active[5] (outside of the labor force); representing

67.2% females and 32.8% males. The largest groups within the non-economically active population were students and housekeepers, constituting 52.1% and 34%,respectively. Table 12 shows the labor force statistics in the Governorate (as of 2007).

4 This includes students, not only labour force participants. Across the whole of the oPt, in 2010, just 4.8% of 10-17 year olds were registered as 'in the labour force'- making under-age workers a very small percentage of formal labour force activity in the country.
5 Including students

Table 12: Ramallah & Al Bireh Governorate population (10 years and above) by sex and employment status, 2007

SEX	Economically Active				Not Economically Active						Un-known	Total
	Emp-loyed	Curr-ently Unem-ployed	Unem-ployed (Never wor-ked)	Total	Stud-ents	House keeping	Unable to work	Another source of income / retire	Other	Total		
M	48,407	3,618	2,331	**54,356**	30,853	114	5,385	1,580	1,680	**39,612**	516	**94,484**
F	11,331	609	958	**12,898**	32,062	40,936	6,159	524	1,450	**81,131**	262	**94,291**
T	59,738	4,227	3,289	**67,254**	62,915	41,050	11,544	2,104	3,130	**120,743**	778	**188,775**

Source: PCBS, Census Final Results – Summary (Population, Buildings, Housing, Establishments) Ramallh & Al-Bireh Governorate

2.3 Educational Status

According to the 2009 PCBS census, 5.8% of Ramallah Governorate residents were illiterate. Women comprised a greater percentage (79.8%) of the illiterate population than their male counterparts (20.2%). Of the literate population, 12.5% could read and write but had no formal education qualifications, 23.5% had completed elementary education, 27.02% had preparatory educations, and 16.5% had completed their secondary education. 7.95% had achieved a bachelors' degree, and 0.2% had a Ph.D or other higher qualification. Table 13 shows the education status in Ramallah & Al Bireh Governorate by sex and educational attainment in 2010.

Table 13: Population (10 years of age and above) in the Ramallah & Al Bireh Governorate by sex and educational attainment, 2007

SEX	Illite-rate	Can read & write	Elem-entary	Prepa-ratory	Secon-dary	Asso-ciate Dipl-oma	Bach-elor	Higher Dipl-oma	Master	Ph.D	Un-known	Total
Male	2,224	11,455	23,473	26,970	16,106	3,776	7,922	210	1650	525	173	**94,484**
Female	8,815	12,114	20,940	24,050	15,046	5,020	7,081	111	815	100	199	**94,292**
Total Rama-llah & Al Bireh Governorate	11,039	23,569	44,413	51,020	31,152	8,796	15,003	321	2465	625	372	**188,775**

Source: PCBS, Census Final Results – Summary (Population, Buildings, Housing, Establishments) Ramallah & Al-Bireh Governorate

Ramallah & Al Bireh Governorate has just one educational directorate, with the governmental sector having the biggest share of schools there (forming approximately 74.4% of the total number of educational institutes).

The private sector also controls 51 schools, all of which are co-educational (See table 14).

Table 14: Distribution of schools in the Ramallah & Al Bireh Governorate by supervising authority and gender, 2013/2014

Supervising authority in Salfit Governorate	Male	Female	Co-education	Total
Government	63	66	54	**183**
UNRWA	4	6	2	**12**
Private	5	2	44	**51**
Grand total	72	74	100	**246**

Source: MOEHE, 2014.

The Palestinian population is a youthful one; as of 2011 60.5% of the West Bank's population was classified as under 24 years of age, with this rising to 62.4% across the entire Palestinian territory and this holds true for Ramallah[6] . Amongst the students in the Governorate, 71.6% attend governmental schools, whilst 19.5% attend private schools and 8% UNRWA run schools. There is no big difference between the participation of females and males in the educational system; males constitute 49.72 %, whilst females constitute 50.28 % of students in Ramallah & Al Bireh Governorate (MOHE, 2014) (See Table 15).

Table 15: Distribution of students in Ramallah & Al Bireh Governorate by supervising authority and gender, 2012/2013

Supervising authority	Male	Female	Total
Government	28,326	30,173	58,499
UNRWA	2,896	3,695	6,591
Private	9,425	7,170	16,595
Grand Total	**40,647**	**41,038**	**81,685**

Source: MOHE, 2014.

There is a shortage of classrooms in Ramallah & Al Bireh Governorate, and many schools operate on a two-shift system. In terms of class size, in the governmental sector there are on average 26.5 students per class, whereas in UNRWA-run schools there are 33.2 students per class and in the private sector there are 21.5 (MOHE, 2014) (See Table 16).

Table 16: Distribution of classes in Ramallah & Al Bireh Governorate by supervising authority

Supervising authority in Ramallah & Al Bireh Governorate	Male	Female	Co-education	Total
Government	884	935	392	**2,211**
UNRWA	80	111	9	**200**
Private	111	106	552	**769**
Total	**1,075**	**1,152**	**953**	**3,180**

Source: MOHE, 2014.

2.4 Health Status

As of 2013 there were 71 health care centers registered in Ramallah & Al Bireh Governorate; 76 % of are run by the governmental sector (See Table 17).

Table 17: Distribution of public health care centers in Ramallah & Al Bireh Governorate, 2013

Providers					Population per Centre
MoH	NGOs	UNRWA	PMMS	Total	
54	9	6	2	71	4.699

Source: MOH-PHIC, Annual Health Report, Palestine- 2014.

There is also one governmentally-run general hospital, which holds 185 patient beds (MOH-PHIC, 2013). However, most of these are located in Ramallah city, and people from small and distant villages in the Governorate face great difficulties in reaching these health facilities.

6 Source: Report by the Palestinian Central Bureau of Statistics; Palestinians at the end of 2011.

Table 18: Hospitals in Ramallah & Al Bireh Governorate by location, supervising authority and number of beds, 2013

Hospital Name	Location	Supervising Authority	No of Beds
GENERAL HOSPITALS			
Palestine Medical Complex	Ramallah	MoH	185
Red Crescent/ Ramallah	Ramallah	NGO	36
Khaled Tarifi	Ramallah	Private	14
Arab Care Medical Services	Ramallah	Private	37
SPECIALISED HOSPITALS			
Al Razi (Opthalmic)	Ramallah	Private	10
REHABILITATION HOSPITALS (Centre)			
Abu Raya	Ramallah	NGO	27
MATERNITY HOSPITALS			
Walid El Nather	Ramallah	Private	10
Al Mustaqbal	Ramallah	Private	30
Total beds in Ramallah & Al Bireh Governorate			**340**

Source: MOH-PHIC, Annual Health Report, Palestine- 2014.

As for practicing medical staff in the Governorate, data is only available for the governmental sector. Table 19 shows the numbers of health care staff (2013) in the one Ministry of Health (MoH) run hospital.

Table 19: Number of health care staff in Ramallah & Al Bireh Governorate's public health care centers, 2013

Health care specialization	Number of health care staff
General physician	46
Specialist physician	9
Dentist	8
Pharmacist	5
Nurse	100
Midwife	8
Paramedic	56
Administration	68
Total	**300**

Source: MOH-PHIC, Annual Health Report, Palestine- 2014.

Statistics in 2013 showed that the Infant Mortality Rate (IMR) in Ramallah & Al Bireh Governorate is 0.67%, one of the lowest in the West Bank and much less than the average IMR in the West Bank, which in 2013 was recorded at 0.93% (See Table 20).

Table 20: Infant mortality rate in Ramallah & Al Bireh Governorate 2013

Live Births	Infant Deaths					Infant Mortality Rate
	Male	%	Female	%	Total	
5,856	22	3.86	17	2.98	39	0.67

Source: MOH-PHIC, Annual Health Report, Palestine- 2014.

The final results of the PCBS's Population, Housing and Establishment Census of 2007 showed that the number of persons in Ramallah & Al Bireh Governorate who have at least one disability was 11,955. See Table 21 for the number of people with special needs, disaggregated into type of difficulty.

Table 21: Number of people with special needs in Ramallah & Al Bireh Governorate by type of difficulty, 2007

Sex	Type of Difficulty					Total with Disability*	Not Stated
	Communication	Cognition	Moving	Hearing	Visual		
Male	855	911	1,967	1,628	3,022	5,788	3,657
Female	776	861	2,431	1,821	3,576	6,167	3,382
Total	1,661	1,772	4,398	3,449	6,598	11,955	7,039

**Includes at least one disability/difficulty*
Source: PCBS. 2009. 'Population, Housing and establishment, Census -2007, Final Results.

2.5 Poverty and Food Insecurity in Ramallah

To understand the causes behind deteriorating livelihood conditions in Ramallah, various economic, demographic, agricultural, nutritional, health, environmental, and food-security issues should be considered. The basic causes of food insecurity translate into underlying and immediate causes of poverty and food scarcity at the household level. In Ramallah and Al Bireh Governorate these causes include negative systemic effects on food trade/market supplies, insufficient economic access to food, artificially high prices, few opportunities to secure employment and higher incomes, limited agricultural lands (small acreage available at household level), and expensive water resources.

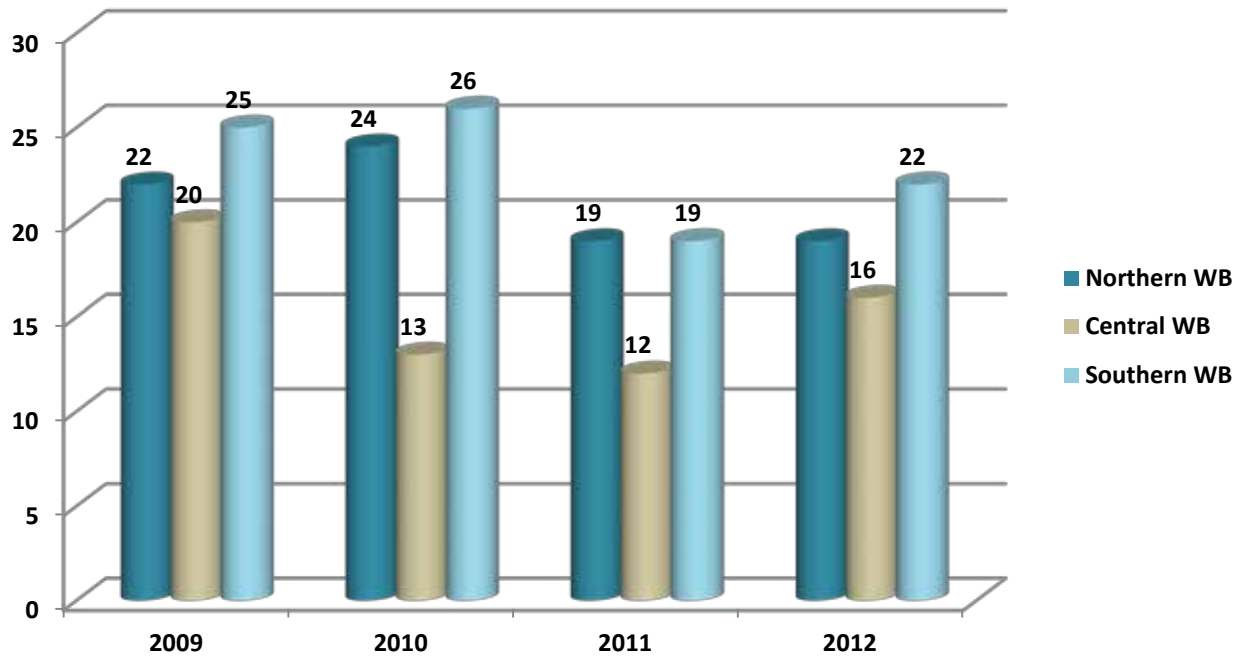
A number of quantitative studies have been carried out in Palestine in order to determine the levels of food insecurity, its effects and associated causes across the country. However, to date there is limited data on food insecurity, disaggregated at the locality level. FAO, WPF and PSCBS conducted a socio-economic and food security survey (SEFSec), in order to gauge changes in the living conditions of Palestinian households by monitoring socio-economic and food security indicators. The survey collects data related to a number of food security indicators, including food acquisition, dietary diversity, household food insecurity Access Scale, income and consumption/expenditure patterns and coping mechanisms. This survey does not cover specific localities but it is disaggregated into regions (north, south, east and west of the West Bank).

The results of the 2012 survey depict a harsh situation. Overall, 34% of Palestinian households' approximately 1.57 million individuals' were found to be food insecure in 2012. This level is 7% points higher than in the 2011 figures, this represents an almost complete reversal of the progressive improvements in food security reported since 2009. The surge in food insecurity mainly reflects the deterioration of socio-economic conditions in both the West Bank and Gaza Strip, resulting from the combination of sustained economic constraints and of the shock generated by the PA fiscal crisis in late 2012 (FAO/ UNRWA/ WFP/ PCBS, 2012).

The central West Bank (including Jerusalem, Ramallah, and Jericho Governorates) continues to show the lowest levels of food insecurity with a 16% level, compared to 19% and 22% in the north/south West Bank respectively. However, these levels of insecurity levels in the central West Bank show an increase by 4% points from the year 2011. This is accompanied by a lower rate of improvement as the productive capacity of the private sector remains stifled due to the restrictions on movement and access. Recent growth stimulated by the donor-funded public sector is therefore unsustainable (FAO/ UNRWA/ WFP/ PCBS, 2012).

However, calculating food insecurity levels for the three Governorates together hides differences in economic performance between the Governorates. Ramallah Governorate is experiencing good economic growth thanks to the construction, trade and consumer services, which represent the main sectors of economic growth. However, Jerusalem Governorate has a more complex economic situation due to the annexation of a large part of the Governorate.

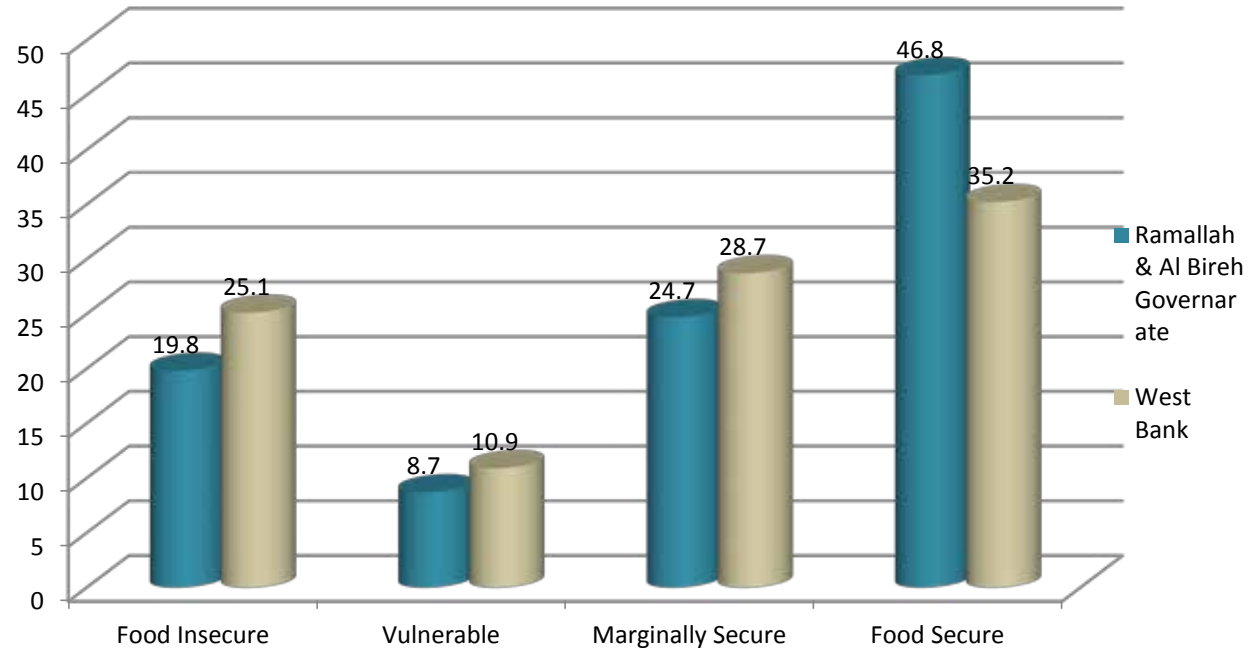
Figure 2: Food insecurity in the West Bank by geographic region, 2011



Source: SEFsec survey, 2009, 2010, 2011, 2012

Up to 20% of Ramallah Governorate's households were found to be food-insecure during 2009, in comparison to 25% across the West Bank (WFP/FAO/PCBS, 2010). This figure represents nearly 47,274 food-insecure people, whilst a further 9% are vulnerable to food insecurity. In addition, 26% are marginally secure with 47% of the Governorate being classified as 'food secure' (See Figure 3). Food-insecure households in Ramallah & Al Bireh Governorate are unable to secure sufficient income to meet their essential food and non-food requirements mainly due to the lack of income-earning possibilities. This status causes families to decrease their intake of food items in terms of both quality and quantity.

Figure 3: Food security levels in Ramallah & Al Bireh Governorate, 2009



Source: WFP/FAO/PCBS, 2010

The current geo-political restrictions, significant increase in food prices, shrinking incomes and high unemployment rates have jeopardized household economies and led to heavy indebtedness and changes in eating habits. Previously self-reliant families are progressively falling into the poverty trap and are unable to escape from their situation in the absence of job opportunities.

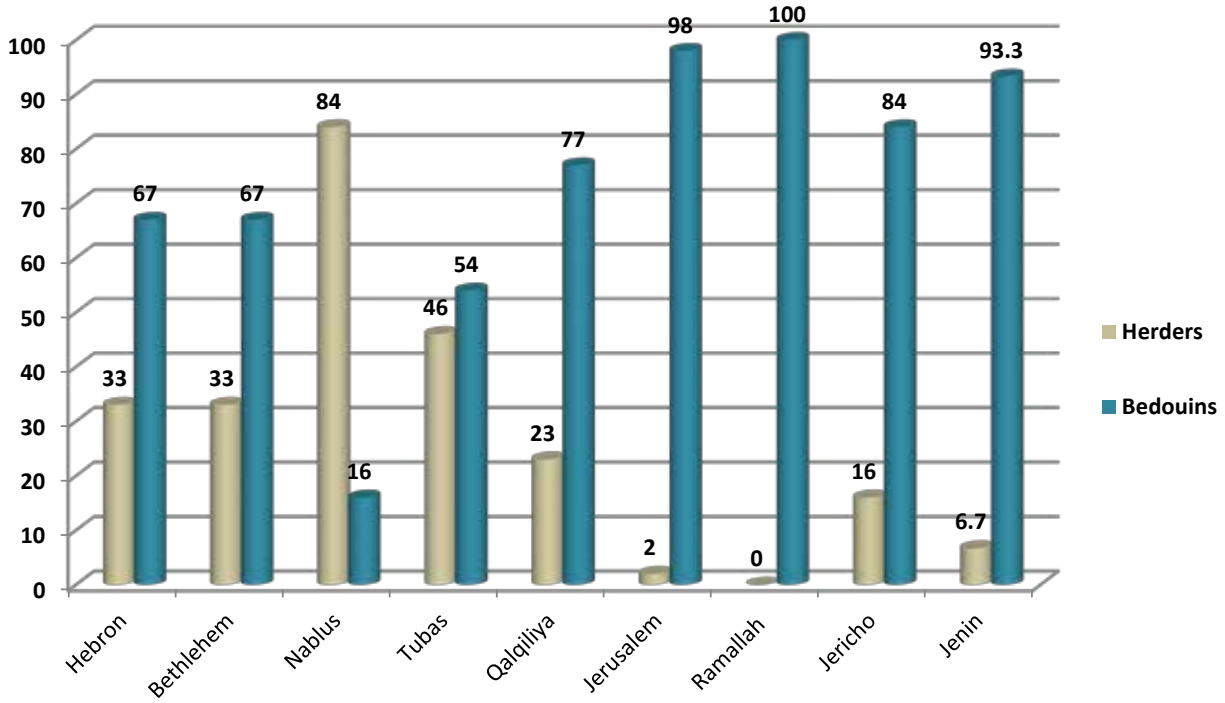
72.7% of labour force are wage employees and 4.9% of the Ramallah population are unpaid family members (i.e. housewives). The labour force participation rate in Ramallah is 45.3%, in comparison to 45.5% across the West Bank (PCBS, 2012).

According to the World Food Program (WFP in 2009, the Ramallah wealth index quintiles show that the poorest quintile comprised 8.2% of the total population in Ramallah, and the percentage of households with poor food consumption rates in Ramallah & Al Bireh Governorate reached 8.1% in 2009, in comparison to 10.2% across the West Bank for the same year (WFP/ARIJ, 2010).

Significant numbers of those affected most severely by food insecurity are Bedouin or 'herding communities' in Area C regions of Ramallah & Al Bireh Governorate. A recent UNRWA/UNICEF report stated that, 'As territorial fragmentation continues in the West Bank, herding communities living in Area C face increasing movement restrictions, limiting their access to rangeland and natural water resources. The Israeli occupation, expansion of illegal settlements, and displacement of Palestinian communities over the past decade, combined with drought, have forced Bedouin and herding communities in Area C to rely on bought fodder and tanked water, which is unsustainable.' The report continues to claim that, 'Livelihoods are under threat and families are struggling to meet their dietary needs' (UNRWA/UNICEF, 2010). Herders and Bedouins are more likely to be food insecure than other communities due to the vulnerability of their main sources of food and income to the prevailing conflict and economic-related shocks in the oPt (FAO/ UNRWA/ WFP/ PCBS, 2012).

Given the large number of Bedouin and nomadic communities existing in Ramallah and particularly in Area C regions, food insecurity represents a significant problem facing local Palestinian citizens in this area. Figure 4 shows the percentage of Bedouin and Palestinian herders at Governorate level, illustrating how Ramallah compares to other West Bank regions.

Figure 4: Bedouins and Palestinian herders by Governorate level (%)



Source: UNRWA/UNICEF, 2010

Food insecurity among Area C households dropped from 24% in 2011 to 20% in 2012. Over the last two quarters of 2012, the PCBS labour force survey for the West Bank shows employment growth in jobs in Israel and settlements of an estimated 6,500 people. Following labour force trends, the SEFSec data indicates that the share of Area C heads of households employed in Israel grew from 15 to 25% between 2011 and 2012. Employment in Israel and settlements for Areas A/B heads of households is lower than Area C, at only 8%. Food insecurity is decreasing in Area C, as household heads are accessing employment in Israel and settlements (FAO/ UNRWA/ WFP/ PCBS, 2012).

The recurrence or persistence of shocks and erosion of coping capacities push these households from transitory to chronic food insecurity or towards more severe levels of food insecurity. The erosion of livelihoods has forced food-insecure families to negative coping mechanisms such as reductions in the quantity of food consumed and gradual shifts in diets (from vegetables and animal products to low-cost and high-carbohydrate items).

The combination of decreased incomes and increased food prices has forced poorer households to change their food consumption patterns. Up to 38.8% of Ramallah & Al Bireh Governorate residents reduced their food expenditures as a main coping strategy against food insecurity, forcing these families to buy fewer food items and to substitute normal foods with cheaper/less desirable items (PCBS/WFP/FAO, 2009). The strategy of food reduction, mainly regarding the quantity of meat purchased/consumed, was adopted by 42.1% of Ramallah & Al Bireh Governorate. Many households (19%) in Ramallah & Al Bireh chose to consume less food as a coping strategy against food shortages and rising food prices (PCBS/WFP/FAO, 2009).

Even if such coping mechanisms are reversible (e.g. switching to less preferred but cheaper food, decreasing the amount of food consumed, forgoing health or education expenditures, and purchasing food on credit), they can have a permanent cost on lives and livelihoods; through poorer health and nutritional status. In addition, many Palestinians must rely upon international or national assistance

in terms of food security solutions, as humanitarian assistance is a proven crucial complement to household coping strategies. This intervention, however, does not always increase Palestinians' ability to produce and implement their own methods for combating food scarcity/rising food prices and develop a level of permanent or long-lasting food security. It was found that 31.5% of families in Ramallah & Al Bireh Governorates received some form of livelihoods assistance in 2009 and of these families, 41.2% received aid in the form of food (WPF/FAO/PCBS, 2009).

It is further noted that according to a food security response plan and monitoring framework carried out by UN Appeal (2012), future food assistance will be based on need, targeting the food insecure population and those vulnerable to food insecurity in the oPt, particularly in the Gaza Strip, Area C, Seam Zone and East Jerusalem, where interventions will focus primarily on areas with food insecurity and high vulnerability levels.

Young persons and children represent the sectors of society most adversely affected by malnutrition. Poor environmental conditions may increase infections and contribute to environmental deficiencies in micronutrients. Additional factors include unemployment, the poor economic situation, and food insecurity changes in household food consumption patterns, with reduced quantities of animal products, vegetables, and fruits. This contributes to a decrease in the amount of minerals and vitamins ingested. The effects of malnutrition on individuals can result in micronutrient deficiencies in young children, which are known to delay growth. In this regard, Iron deficiency anaemia[7] affected approximately 36.7% of children under 3 years old and 34% of pregnant women (tested in their first antenatal appointment) in Ramallah & Al Bireh Governorate in the first quarter of 2013, compared to 40.7% and 27.2 % in the West Bank (MoH, 2014).

7 Anaemia is a condition in which haemoglobin is less than normal; the recommended dietary allowances of iron are 15mg a day for women and 10mg for men.

PART THREE:
Agricultural & Environmental Status in Ramallah & Al Bireh Governorate

3.1 Land Use/ Land Cover

The Palestinian agricultural sector serves a population of approximately 3.8 million people (PCBS, 2009a), acting as an important economic base and as the main source of food for many Palestinians. During the past eleven years, the agricultural sector in the occupied Palestinian territory has proven to be the sector most capable of dealing with emergencies resulting from Israeli measures / artifacts carried out against Palestinians since occupation and mainly after the first and second Palestinian Intifada (2000, 2004). Economic shocks from the Intifada, such as rising unemployment, restrictions in economic and labor markets and freedom of movement resulted in a widespread increase in both 'poverty' and 'deep poverty' levels in the region (Ajlumi, 2003). Other factors that contribute to the poor economy in addition to the continued expensive conflict with Israel which has drained Palestinian resources, inefficient management of economy by Palestinians, the high dependence of the economy on international assistance; thus yielding a false economy. Agricultural practices have helped to remedy the adverse effects of these problems, aiding Palestinians to grow their own food and avoid falling into deeper poverty or suffering from increased food insecurity.

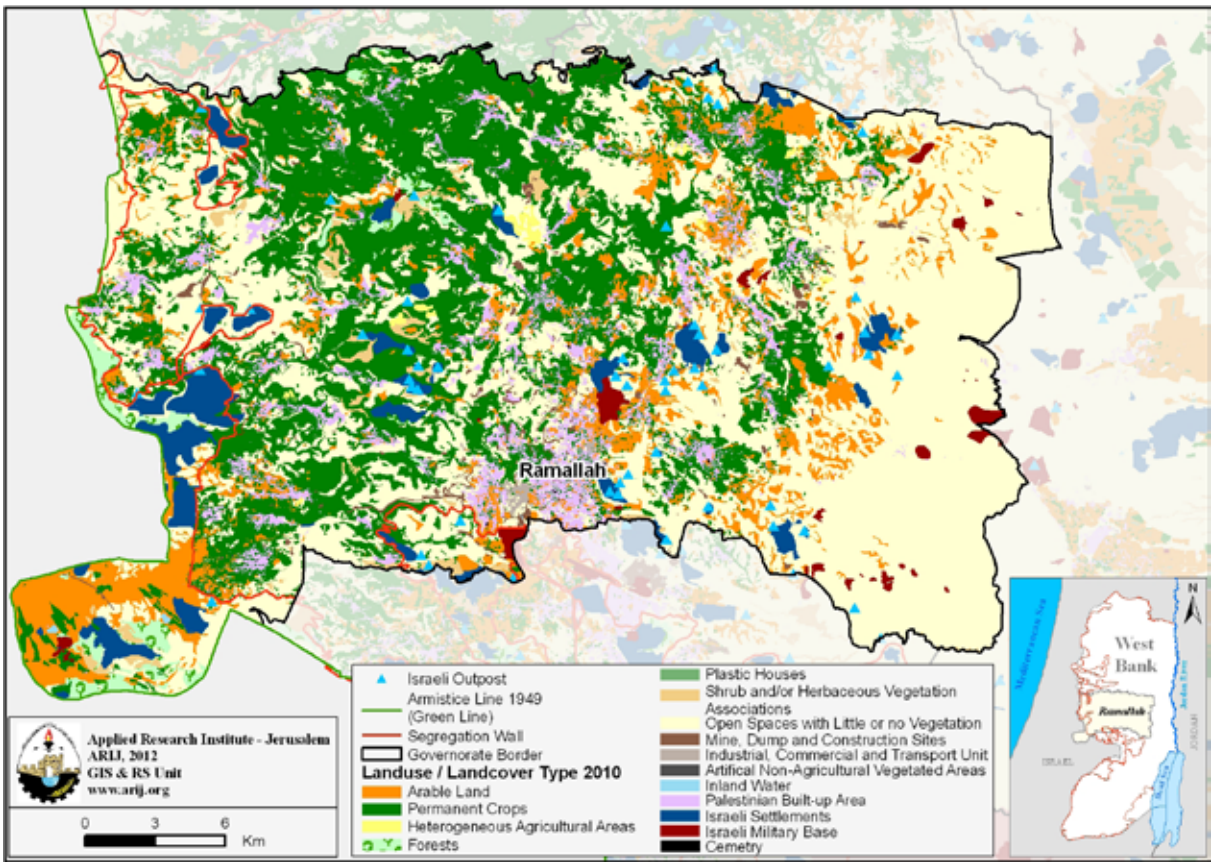
The PCBS and Ministry of Agriculture (MoA) conducted a survey in 2011 which calculated the total area of agricultural lands in the oPt as 1,207,061 dunums, of which 1,105,146 are in the West Bank and 101,915 in the Gaza Strip. The type of survey undertaken was mainly based on a definition for the size of agricultural holdings which recorded physical agricultural areas, but not seasonal ones[8] . Compared to 2008 when the total agricultural area for the oPt was registered at 1.854 million dunums, this research shows a decrease of 646,939 dunums of agricultural lands. However, ARIJ's GIS Unit's analysis of agricultural areas in 2010 showed that the West Bank's total agricultural area was 2,150,800 dunums (ARIJ, 2011a). This difference in these results is due to the fact that PCBS and MoA surveyed the 'actual' agricultural lands (according to the physical area classification), whilst dismissing the fragmented and small agricultural lands that are dominant in urban areas and in areas where springs are located. ARIJ's survey discovered a high percentage of such small and fragmented lands (family cultivations) across the oPt. This means an additional 1,045,654 dunums of small land holdings could be added to the PCBS and MoA's official 2010 agriculture survey.

As of 2013, In Ramallah & Al Bireh Governorate, 4.5% of the total labor force (male and female) work in agriculture, in comparison to the average across the West Bank at 11.5% (PCBS, 2014). Nevertheless, agriculture is an important industry in Ramallah, given its role in providing food solutions for many needy families and communities living in the Governorate. The total area of the Ramallah & Al Bireh Governorate is estimated at 855,587 dunums with nearly 342,207 dunums of agricultural land, of which 250,118 dunums are permanent crops, 89104 are seasonal crops, and 76 are classified as 'protected agriculture' (ARIJ- GIS Unit, 2008) (See Table 22 and Map 6).The Palestinian National Authority (PNA) and key international players recognize the importance the agricultural sector plays in supporting both the Palestinian economy and individual livelihoods, and have formulated a 'National Development Plan for 2011-2013[9] ' for the agricultural sector. The agricultural sector has been defined as the 'agriculture and rural development sector', with allocated budgets (of total development expenditures) for 2011, 2012 and 2013 of US $34.2, $60.7, and $83.0 million, respectively.

8 The survey only registered land < half a dunum as agricultural holding for 'irrigated lands' and those with an area equal to one dunum < are considered to be a 'rain-fed' holding).

9 Its stated vision is towards 'Establishing the State and Building our Future'

Map 6: Land use / Land cover in the Ramallah & Al Bireh Governorate and Segregation Wall Route, 2010



Source: ARIJ - GIS Unit, 2011a.

Table 22: Land use/ Land cover in the Ramallah & Al Bireh Governorate, 2010

Type of Land Use/ Land Coverage	Area Dunums*
Agricultural land	342,207
Artificial non-agricultural vegetated areas	132
Forests	13,390
Industrial, commercial and transport units	2,269
Inland water	249
Mine, dump and construction sites	7,420
Open spaces with little or no vegetation	386,395
Shrub and/or herbaceous vegetation associations	13,007
Cemetery	191
Israeli military bases	7,356
Israeli outposts	332
Israeli settlements	34,157
Palestinian built-up areas	46,519
Wall zone	1,963
Total	**855,587**

**Dunum = 1,000 m2 = 0.1 Hectare*

Source: ARIJ – GIS Unit, 2011a.

In terms of adequate irrigation supply for crop production and other agricultural activities, Ramallah suffers severe problems in the availability of needed irrigation methods and technologies. Table 23 below details the number of plant and mixed holdings in the Governorate, by their main source(s) of irrigation.

Table 23: Number of plant and mixed holdings in Ramallah & Al Bireh Governorate by main source of irrigation, 2010

Main Source of Irrigation	Number of plant and mixed holdings
Rainfed	8,961
Artesian wells	43
Streams and valleys	-
Dug well	1
Tanks, ponds and collective well	38
Springs	18
Public network	106
Tanks	20
Other sources	-
Not stated	41
More than 1 source of irrigation	658
Total	**9,887**

Source: PCBS, Agricultural Census, 2010. Final Results.

The PCBS's 2010 Agricultural Survey shows that the total number of agricultural holders in Ramallah & Al Bireh Governorate reached 10,692. Table 24 shows the types of agricultural holding by purpose.

Table 24: Number of agricultural holdings in Ramallah & Al Bireh Governorate by main purpose of production, type of holding 2009/2010

Main Purpose of Production and Type of Holding									
Not Stated			For Sale			For Household Consumption			Total
Mixed	Plant	Animal	Mixed	Plant	Animal	Mixed	Plant	Animal	
1	13	7	242	276	255	827	8,528	394	**10,543**

Source: PCBS, 2011 'Agricultural Census; 2009/10'

As shown above, the majority of agricultural holdings are used for household consumption (92.47%), with just 7.33% being used for commercial production. Agriculture therefore plays a larger role in food security than in economic opportunity for Ramallah & Al Bireh Governorate communities.

The size of agricultural holdings in Ramallah & Al Bireh Governorate also provides an interesting perspective on the state of the agricultural sector and its relationship with food security in the region. Data provided by the PCBS shows that the majority of agricultural holdings in Ramallah are small in size, indicating a household or small community cooperative level of production (See Table 25). This further demonstrates that many individuals and families in Ramallah rely on obtaining food from self or local community level agricultural production.

Table 25: Area of agricultural holdings in Ramallah & Al Bireh Governorate, 2010

Area Group of Holding (in Dunums)	Units of Agricultural Holdings
Up to 2.99	3,411
3 – 5.99	2,489
6 – 9.99	1,677
10 – 19.99	1,567
20 – 29.99	613
30 – 39.99	268
40 – 49.99	144
50 – 59.99	113
60 – 69.99	65
70 – 79.99	42
80 +	154
Total	**10,543**
Average holding size	**10.78**

Source: PCBS, 2011 'Agricultural Census; 2009/10'

3.2 Agricultural activities

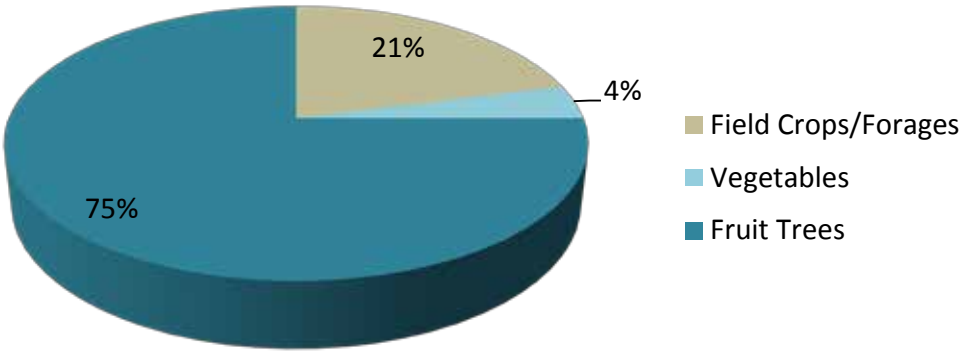
Agriculture is one of the most important sectors of the Palestinian economy and is an integral part of Palestinian history, culture, and identity. Agriculture has become a symbol of the Palestinian people's struggle to protect their lands from confiscation. It is the sector that hosts refugee laborers from other sectors during times of political conflict and economic crisis. Ramallah Governorate contributes just 5% of the oPt's total agricultural value for the year 2007/2008 (PCBS, 2009).

The type of agriculture practiced in Ramallah and Al Bireh Governorate varies according to region, but in general, it can be divided into two groups; i) plant (both rain-fed and irrigated), and ii) livestock production.

3.2.1 Plant Production

The total cultivated area of plant production in the oPt is categorized by the PCBS into 3 divisions: 'Fruit Trees', 'Vegetables', and 'Field Crops/ Forages'. According to the PCBS, for the agricultural year 2007/8 the total cultivated area for plant production in Ramallah & Al Bireh Governorate was recorded at 214,393 dunums (45,809 of Field Crops/Forages, 7,447 of Vegetables and 161,137 of Fruit Trees).

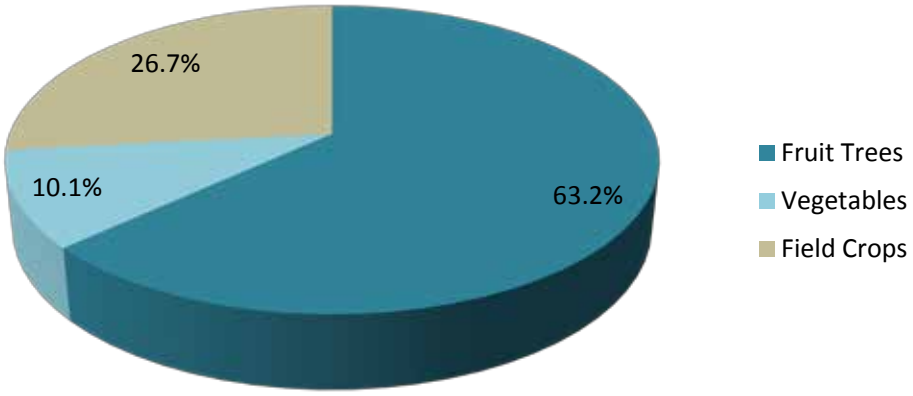
Figure 5: Plant production statistics- Ramallah & Al Bireh Governorate 2007/2008



Source: PCBS, 2009

Fruit Tree production makes up the majority of plant cultivation in Ramallah & Al Bireh; constituting 75% of the Governorate's plant production area. In comparison with recorded nation-wide results for the agricultural year 2007/8, fruit trees constituted 63.2% of the cultivated area of the Palestinian Territory, while vegetables and field crops comprised 10.1% and 26.7% of cultivated areas, respectively.

Figure 6: Distribution of cultivated area in the Palestinian Territory 2007/2008



Source: PCBS, 2009

The PCBS's 'Agricultural Census' for 2009/10 recorded the total area of plant production in the Governorate had declined by to 69.27% to 65,883.06 dunums compared to 2007/8. This represents an 85.55% decrease areas available for field crop/forage cultivation, a 74.15% decrease in vegetable areas and 64.41% decrease in fruit tree areas. There is a worrying decrease in the amount of land available for plant production, which should be addressed by a number of parties in order to preserve the agricultural heritage of Arab communities and the vital role agriculture plays in families' livelihoods and food security.

In terms of methods used for plant production in the Governorate, as of 2007/8 the overwhelming majority of cultivated areas were irrigated with rain water (97.58%). Plant production totaled 32,879 tons, creating a total value added of US $ 30,400,000 to the Palestinian economy. Compared to the agricultural year 2007/8 with 1999/2000, there has been an increase of approximately 12.54% of the total planted area, a 37.67% increase in total production, and a 27.79% increase in total production value. (http://www.pcbs.gov.ps/pcbs/Portals/_PCBS/Downloads/Book%20468.pdf p.77).

Changes in cultivated land area for plant production (Time Series)

The value added[10] total of agriculture production in Ramallah & Al Bireh Governorate stood at US$43,512,000 for 2007/8, representing 4.97% of the Palestinian Territory's agricultural sector's value added total during the same year.
(http://www.pcbs.gov.ps/Portals/_pcbs/Agriculture/tab22.htm).

As previously noted, , agriculture in Ramallah & Al Bireh Governorate is mainly dependent on rain-fed irrigation systems (97.58%), which requires good water availability, efficient water systems, and competent water management plans. These conditions are vulnerable to any deterioration in the joint Israeli/Palestinian water control relationship (Israeli control over quantity and Palestinian responsibility for management/distribution) or in funding arrangements. Currently, irrigated agriculture covers approximately 12% of cultivated lands in the oPt and uses approximately two-thirds of Palestinian water resources, whilst contributing a gross output of an estimated US $500 million annually. To sustain this viable sector, copping plans and strategies should be developed to mitigate the impact of both negative Israeli and Palestinian water authority policy (encourage good governance in both parties involved in water management) and develop funding plans for better water systems, in terms of effective supply and distribution.

Fruit Tree Production

During 2007/2008's agricultural season, the total cultivated area of fruit trees in Ramallah & Al Bireh Governorate was recorded at 161,137 dunums, of which 2.6% were un-bearing. 99.9% of the areas cultivated with fruit trees used rain-fed water with their total value of production for the year 2007/8 reaching US $ 19, 959, 000; constituting 9.35% of the total revenue produced from fruit trees production across the West Bank and 7.56% of the Palestinian territory's production's. In terms of all agricultural production in Ramallah (livestock, vegetables), the annual revenue generated from fruit tree production constituted 65.65% of all production (for the year 2007/8).

Compared to the agricultural year 1997/1998, one notices a 0.9% increase in the total area of land being used for the cultivation of fruit trees[11] . In addition, the total quantity of fruit being produced from cultivations in Ramallah is almost exactly the same from the year 1997/19998 (increase of 4,494 tons). Furthermore, there has been a decrease in the value of fruit tree production in Ramallah; from an annual total of US $ 22,937,000 in 1997/1998 to US $ 19,959,000 by 07/08. This represents a decrease of 13%.

The total production of fruit trees for the year 2007/8 reached 18,469 tons. Olive, grape and fig production constituted the overwhelming majority of fruit tree cultivation in the Governorate at 78.13%, 9.1% and 6.94%, respectively (see Table 26). The rest of the production was made up by a range of small quantities of various other fruits including aloe, plum, and hard almond.

10 For the preparation of this report, value-added is calculated on the basis of agricultural year, which extends from 01/10/2007 until 30/09/2008 (PCBS,2009f)

11 From 16,453 dunums in 1999/2000 to 19,795 dunums in 2007/2008

Table 26: Area, yield and production of fruit trees in Ramallah & Al Bireh Governorate by crop and type, 2007/2008

Crop	Bearing				Unbearing		Total Area	Production
	Rain-fed		Irrigated		Rainfed Area	Irrigated Area		
	Area	Yield	Area	Yield				
Olive	144,296	100	-	-	3,134	-	147,430	14,340
Fig	3,662	350	-	-	202	-	3,864	1,282
Hard Almond	3,448	40	-	-	-	-	3,448	138
Grape	2,722	617	-	-	227	-	2,949	1,679
Plum	1,295	250	-	-	106	-	1,401	324
Soft Almond	613	35	-	-	89	63	765	21
Aloe	430	1,000	-	-	33	-	463	430
Apple	142	200	-	-	146	-	288	28
Apricot	167	110	-	-	116	-	283	18
Pomegranate	85	500	11	500	3	5	104	48
Lemon	-	-	41	1,500	25	1	67	62
Cherry	17	200	-	-	38	-	55	3
Walnut	18	350	-	-	2	-	20	6
Total	**156,895**		**52**	**-**	**4,121**	**69**	**161,137**	**18,469**

Area: Dunum, Yield: Kg/Dunum, Production: metric ton

Source: PCBS 2009, Agricultural Statistics for 2007/8.

Vegetable Production

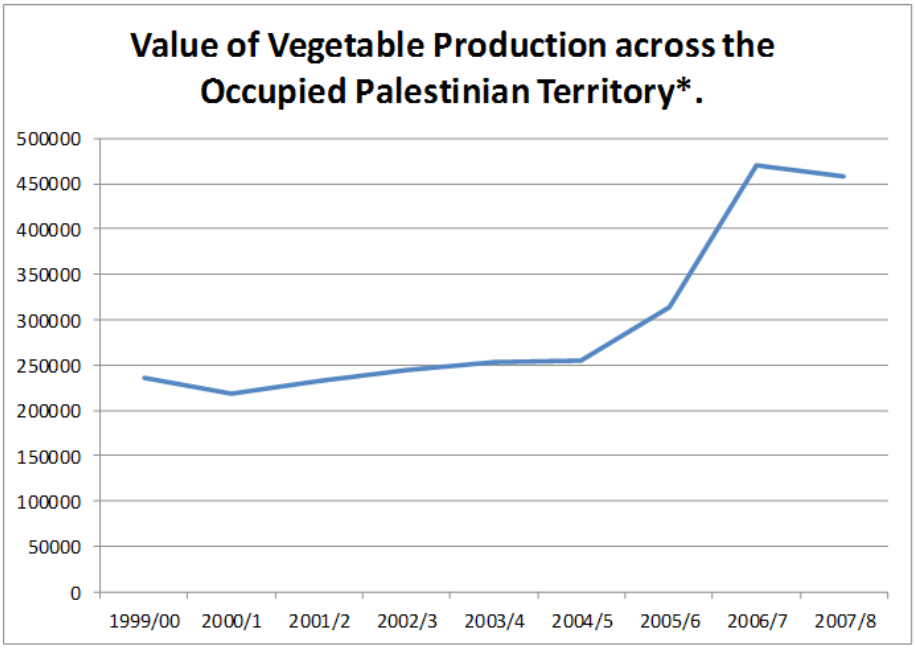
Results from the agricultural year 2007/2008 indicated that approximately 7,447 dunums of cultivated land were used for vegetable production in Ramallah. This comprises a mere 4% of the total area of cultivated lands for vegetable production in the Palestinian territory, and 22.5 % total area of cultivated lands for vegetable production in the West Bank. Of the cultivated areas used for vegetable production, 87.86% occurred on rain-fed lands, whilst just 12.14% were developed on irrigated areas. http://www.pcbs.gov.ps/Portals/_pcbs/Agriculture/tab2.htm

In addition, at Governorate level, vegetable production constitutes 1.06% of all vegetables produced. Indeed, the total production of vegetables, for the year 2007/8 reached 7,387 tons with a total value of US $ 5,782,000. This represents just 1.79% of the total vegetable production value across the whole Palestinian territory (equating to 1.25% of the West Bank).
http://www.pcbs.gov.ps/Portals/_pcbs/Agriculture/tab15.htm

Compared to the year 1997/1998, one can see an increase of 36% in the total area planted with vegetables, a large 146.8% increase[12] in total production, and (approximately) a 151.8% increase in the total production value. Governorate

12 Although it is noted that this percentage increase is relative to the small production quantities; from 442 tons in 1999/2000 to 766 in 2007/8.

Figure 7: A time-series demonstration of changes in vegetable production value in the Occupied Palestinian Territory



**Value in US $ 1000. Value of vegetables production does not include cut flowers.*

There are different vegetable crop types recorded to be cultivated in the Governorate; Squash, Tomatoes, Cucumber, Snake cucumbers, Broad Been, Okra, Green Onion. Tomatoes, Cucumbers and Squash are the vegetables with the highest production rate; comprising 23.73% 13.05% and 12.47% of the total vegetable production in the Governorate, respectively. Table 28 shows the vegetable production in Ramallah & Al Bireh Governorate.

Table 27: Area, yield and production of vegetables in Ramallah & Al Bireh Governorate by crop and type, 2007/2008

Crop	Produ-ction	Total area	Rainfed		Irrigated		Plastic House		French Tunnel		Surface Tunnel	
			Area	Yield	Area	Yield	Area	Yield	Area	Yield	Area	Yield
Tomato	1,753	1,155	955	400	147	5,000	53	12,000	-	-	-	-
Cucumber	964	135	-	-	82	4,000	53	12,000	-	-	-	-
Squash	921	1,616	1,540	450	76	3,000	-	-	-	-	-	-
Snake Cucumber	483	1,074	1,074	450	-	-	-	-	-	-	-	-
Cauliflower	473	224	185	1,500	39	5,000	-	-	-	-	-	-
Spinach	456	152	-	-	152	3,000	-	-	-	-	-	-
Green Onion	432	540	540	800	-	-	-	-	-	-	-	-
Broad Bean	392	783	783	500	-	-	-	-	-	-	-	-
Chick Peas (Green)	343	343	343	1,000	-	-	-	-	-	-	-	-

Crop	Produ-ction	Total area	Rainfed		Irrigated		Plastic House		French Tunnel		Surface Tunnel	
			Area	Yield	Area	Yield	Area	Yield	Area	Yield	Area	Yield
Eggplant	210	70	-	-	70	3,000	-	-	-	-	-	-
Hot Pepper	175	50	-	-	50	3,000	-	-	-	-	-	-
Parsley	162	54	-	-	54	3,000	-	-	-	-	-	-
Peas	139	355	329	400	26	300	-	-	-	-	-	-
Okra	104	546	546	190	-	-	-	-	-	-	-	-
Cowpea	74	248	248	300	-	-	-	-	-	-	-	-
Lettuce	24	8	-	-	8	3,000	-	-	-	-	-	-
Total	**7,387**	**7,447**	**6,543**		**789**		**115**		**-**		**-**	

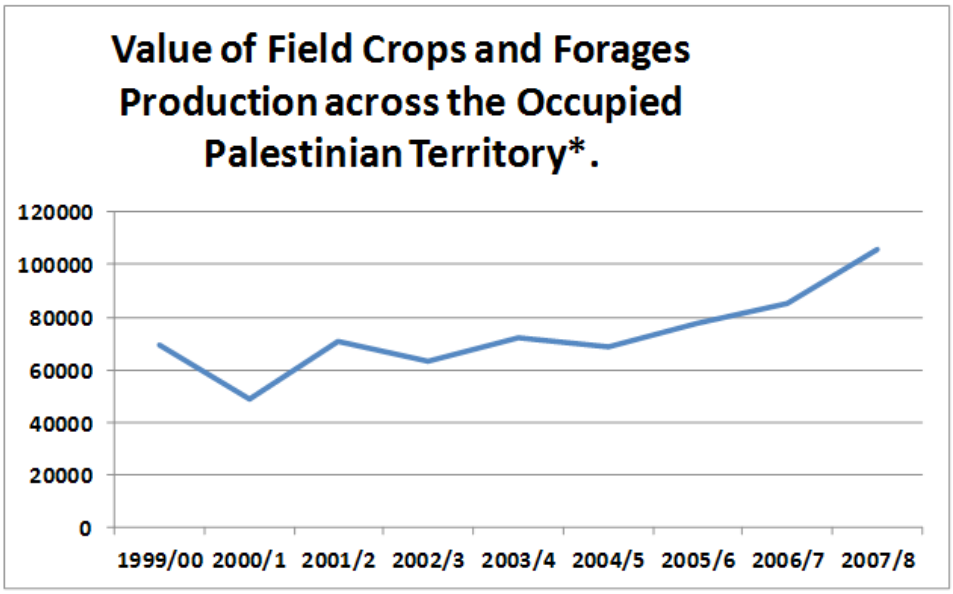
Area: Dunum, Yield: kg/dunum, Production: ton
http://www.pcbs.gov.ps/Portals/_PCBS/Downloads/book1620.pdf

Field Crops and Forages Production

In the 2007/2008 ago-production season, all of the land (100%) utilized for field crop/forages production used rain-fed technology. This is made possible by the adequate annual rainfall for such cultivation methods to be viable along with the needed rain fed agricultural technologies in place to support such production. The total estimated area of land used for field crop/forages production was 48,809 dunums, with a production quantity reaching 7,023 tons and a total value of US $ 4,659, 000. This production value forms approximately 6.6% of total field crop production value across the West Bank and 4.41% of total Palestinian production, for the same agricultural year (2007/8).

Compared to the year 1997/1998, there has been an increase of approximately 18.2% in the total area planted with field crops and forages, a 22.5% increase in production quantity, accompanied by 101.3% increase in production value of Field Crops in the region.

Figure 8: A time-series demonstration of changes in vegetable production value in the Occupied Palestinian Territory



**Value in US $ 1000.*

Wheat production, in the agricultural year 2007/8 constituted the large majority (53.78) of the total field crops and forages production of Ramallah. Barley was the crop classified with the second largest production, at 27% (See Table 28). In terms of nationwide field crop production rate, Ramallah's wheat cultivation in 2007/8 made up 11.87% of total wheat production across the Palestinian territory for the same year, with Barley contributing 19.34%.

Table 28: Area, yield and production of field crops and forages in Ramallah & Al Bireh Governorate by crop and type, 2007/2008

Crop	Rain fed		Irrigated		Total Area	Production
	Area	Yield	Area	Yield		
Wheat	22,220	170	-	-	22,220	3,777
Barley	13,455	140	-	-	13,455	1,884
Dry Onion	553	600	-	-	553	332
Dry Garlic	477	500	-	-	477	239
Potato	453	500	-	-	477	227
Sem	2,363	60	-	-	2,363	142
Vetch	1,905	60	-	-	1,905	114
Chick Pea	1,575	70	-	-	1,575	110
Broad Bean	1,583	60	-	-	1,583	95
Lentil	859	65	-	-	859	56
Thyme	37	30	-	-	37	37
Sesame	329	30	-	-	329	10
Total	**45,809**		**-**		**45,809**	**7,023**

Area: Dunum, Yield: Kg/Dunum, Production: metric tons
http://www.pcbs.gov.ps/Portals/_PCBS/Downloads/book1620.pdf p.121

3.2.2 Livestock Production

The total production of livestock in Ramallah & Al Bireh Governorate during the agricultural year 2007/2008 reached 4,745 tons of meat (red and white), 6,227 tons of milk, 127 million produced eggs and 15 tons of honey. http://www.pcbs.gov.ps/Portals/_pcbs/Agriculture/tab17.htm

The value of livestock production (Meat, Milk, Eggs, Honey and 'Others') in Ramallah & Al Bireh Governorate during the agricultural year 2007/2008 registered approximately US $ 37,627,000, having increased 19% compared to the year 1997/1998. The contributions of different sectors from the total livestock production value of the Ramallah & Al Bireh Governorate was as follows: 47.4% meat, 31.1% eggs, 18.6% milk, 0.5% honey and 2.43% in the 'other livestock' category. It is noted that there is no fish production in Ramallah.

Compared to the year 1997/1998, there was an increase of approximately 70.8% of the total production value of livestock. Over the same time period, the value of milk production (goats, sheep and cows) has increased by 46.6%, total egg production value has increased by 97.5% whilst honey has decreased by 46.9%.

Value Added calculations for Ramallah's livestock sector:

The PCBS recently added to their annual agricultural survey, a calculation of the value added to various agricultural sectors (livestock, plant, vegetables etc). Value added costs have been calculated for both 'intermediate consumption' and overall 'production'.

For the agricultural year 2007/8 the value added calculations for the livestock sector in Ramallah & Al Bireh Governorate were as follows:

i. Intermediate consumption= US $ 18,683,000
ii. Production value= US $ 37,627,000

Cattle Production

The total number of cattle in the Ramallah & Al Bireh Governorate during the agricultural year 2007/2008 was 278 heads, with a total value of production (meat & milk) of approximately US $979,000 Compared to 1997/1998, agro-production years there has been a 58.8% reduction in the total number of cattle farmed in Ramallah. In terms of Cattle's value, however, there has been a 14.9% increase in the value of cattle since 1997/1998 (PCBS, 2009f). Cattle production, when compared to other agricultural activities however is not a large industry in Ramallah, as it constitutes just 9.9% of livestock production's value across the Governorate and 1.1% of the total cattle production in Palestine.
Table 29 compares the total number and type of cattle farmed in Ramallah & Al Bireh Governorate and the whole Palestinian Territory.

Table 29: Number of cattle by strain, sex and age in the Ramallah & Al Bireh Governorate compared to the total in the Palestinian Territories, 2007/2008

Region	Local Cattle					Friesian Cattle					Grand Total
	Cows	Calves	Heifer	Bulls	Total	Cows	Calves	Heifer	Bulls	Total	
Ramallah & Al Bireh	18	2	6	1	27	185	17	43	6	251	278
Palestinian Territories	2,910	918	638	185	4,651	16,504	7,141	4,310	380	28,335	32,986

Source: PCBS. 2009. Agricultural Statistics for 2007/8.

Sheep and Goat Production

During the agricultural year 2007/2008 the total number of sheep and goats in Ramallah & Al Bireh Governorate reached 39,632 and 28,653 heads, respectively. During 2008, the total value of the production of sheep and goats combined (meat and milk) reached approximately US $16,691,000. Compared to 1997/1998, the value of meat has increased by 18.8% and the value of milk has increased by 48.1%.

See Table 30 for types and numbers of goats and sheep in the Ramallah & Al Bireh Governorate and in the Palestinian Territories.

Table 30: Number of sheep and goats in Ramallah & Al Bireh Governorate in compared to total heads across the Palestinian Territory, 2007/2008

Governorate	Goats			Sheep		
	Local	Other	Total	Local	Other	Total
Ramallah & Al Bireh	27,273	1,380	**28,653**	36,737	2,895	**39,632**
Palestinian Territories	274,888	47,194	**322,082**	453,554	235,345	**688,899**

Source: PCBS. 2009.'Agricultural Statistics for 2007/8.'p52

Between the years 2007/8 and 2010 the number of sheep and goats has decreased by 25.3% and 12.4%, respectively. The total number of sheep reached up 34,723 heads and the goats to 21,399 heads in the year 2010 (PCBS, 2011).

Poultry Production

The total number of poultry in Ramallah & Al Bireh Governorate during the agricultural year 2007/2008 was 2,277,000 birds (comprising of 531,000 Layers and 1,746,000 broilers); constituting 7.5% of the total poultry production in the Palestinian Territory. The total value of poultry production (meat & eggs) for the same year stood at approximately US $ 18,852,000. (PCBS. 2009.'Agricultural Statistics for 2007/8).

Compared to the agricultural year 1997/1998, the number of laying poultry has dramatically increased by 65.4%, with broiler bird production decreasing by 50.2%.
Table 31 compares the total number of layer and broiler birds in Ramallah & Al Bireh Governorate and the Palestinian Territories for the agricultural year 2007/8.

Table 31: Number of broilers and layers in the Ramallah & Al Bireh Governorate compared to the total in the Palestinian Territories, 2007/2008.

Governorate	Poultry numbers	
	Layers	Broilers
Ramallah	530,000	1,746,000
Palestinian Territory	2,695,000	27,682,000

Source: PCBS. 2009.

Beehive Production

The total number of beehives in Ramallah & Al Bireh Governorate reached 4,309 in 2007/08 (PCBS, 2009c). In 2010, however, the total of number of beehives was only 2,669 representing a 37.4% decrease since 2007/08.

During 2007/2008 the total production value of the beehive industry in Ramallah & Al Bireh reached approximately US $189,000, making up 6.6% of the total annual honey production value in the oPt (and 8.3% of the West Bank's production) (PCBS, 2009c) (see Table 32). The 2007/08 figures show a 1% increase in the number of beehives since 1998/1997, and an decrees of 47% in the total production value of beehives in Ramallah & Al Bireh Governorate (PCBS, 2002; PCBS, 2009c).

Table 32: Number of beehives in Ramallah & Al Bireh Governorate compared to total numbers across the Palestinian territory, 2007/08

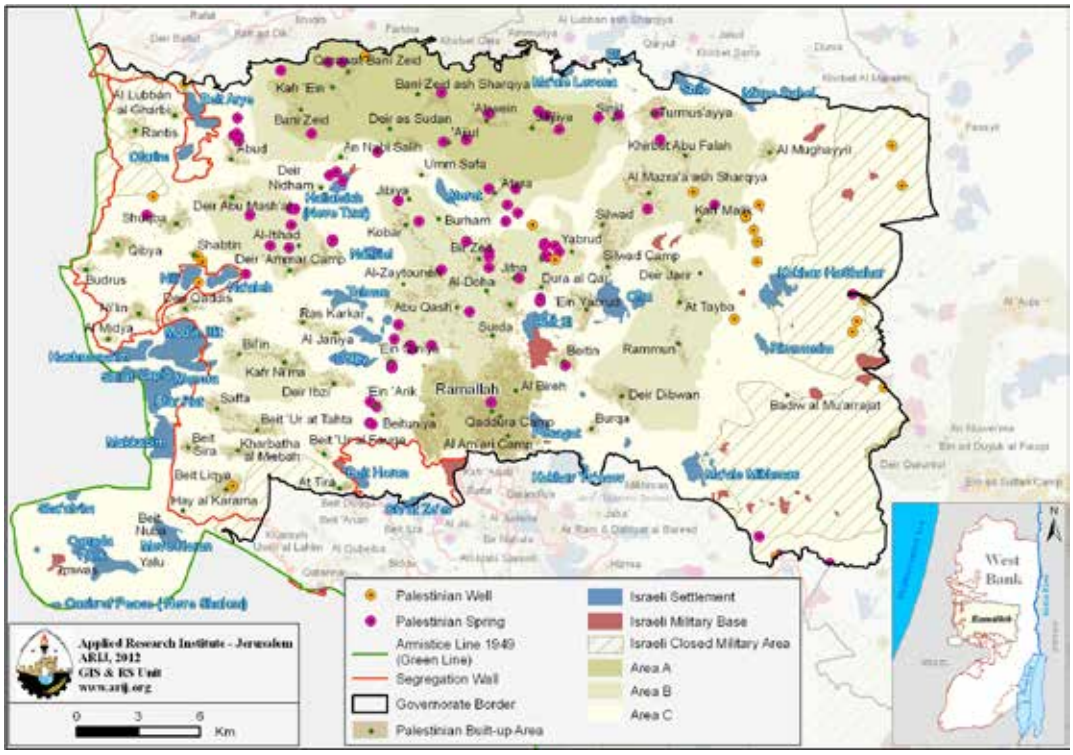
Region	Beehives		
	Modern	Traditional	Total
Ramallah & Al Bireh	4,082	227	4,309
Palestinian Territory	63,782	2,951	66,733

Source: PCBS, 2009c

3.3 Water Resources

The renewable water resources in Ramallah and Al-Bireh Governorate consist primarily of groundwater resources, all of which are located in the Eastern aquifer system. In 2010, around 3.6 MCM were produced from the Eastern Basin from Palestinian springs and wells located in Ramallah & Al-Bireh Governorate (PWA, 2012). The 31 major springs in the Governorate produced 0.7 MCM in 2010 (PWA, 2012). Two are utilized for domestic purposes, four are utilized for both domestic and agriculture purposes, and the remainder are used solely for agricultural activities (See map 7). Wells produced 2.9 MCM in 2010 and this water was used for domestic purposes in Ramallah & Al-Bireh Governorate (PWA, 2012).

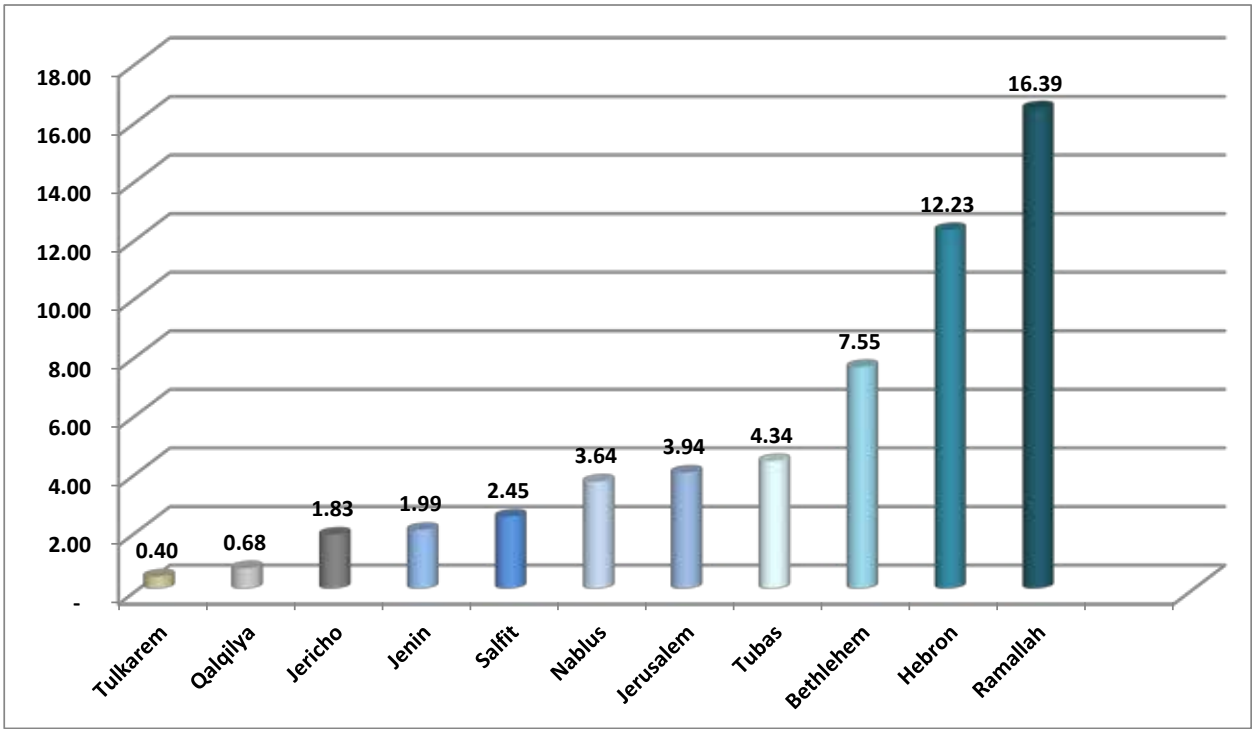
Map 7: Distribution of Ground Water Springs and Wells in Ramallah and Al-Bireh Governorate



Source: ARIJ - GIS Unit, 2011a.

Drinking water resources in the Ramallah & Al-Bireh Governorate are divided into two main sources: (1) local resources mainly from wells and springs, and (2) purchased resources from Mekorot, Israel's National Water Company. The quantity of water purchased from Mekorot in Ramallah & Al- Bireh Governorate for domestic use in 2010 was 16.4 MCM, which represents approximately 82% of the total water resources of the Governorate. This was set at a cost of 2.4 NIS/cubic meter (PWA, 2012).

Figure 10: Quantity of domestic water purchased from Mekorot in West Bank Governorates



Source: PWA, 2012

Figure 10 shows the quantity of water purchased from Mekorot by each West Bank Governorate. It can be seen that Ramallah and Al-Bireh Governorate has the highest purchase of water (30% of total purchases). This is a result of the high population density in this Governorate, due to the continuing migration from other Governorates (PWA, 2012).

In 2010 Ramallah and Al Bireh Governorate experienced a drought, which impacted the agricultural sector. In terms of domestic water availability, there was a water deficit as the domestic water supply did not meet the needed quantity of water. Table 33 (below) shows set of indicators related to the needed, available and consumed quantities and deficit of water in Ramallah and Al Bireh Governorate in 2010.

Table 33: Needed, available and consumed quantities and deficit in Ramallah and Al Bireh Governorate, 2010

Governorate	Actual Deficit	Water Consumed	Deficit	Water Supply for Domestic Sector	Needed Quantities of Water(1)
	MCM/year	MCM/year	MCM/year	MCM/year	MCM/year
Ramallah & Al-Bireh	16.5	16.2	0.3	11.9	4.6
(1) Needed quantity of water is calculated based on a water supply of 150 l/c.d					

Source: PWA, 2012.

Although the water losses in 2010 reached 4.3 MCM, representing 26.8% of the supplied water in Ramallah and Al-Bireh Governorate (PWA, 2012), the Governorate suffers from an actual deficit in domestic water supply, as the amount of consumed water was much less than the needed quantity.

The 'Jerusalem Water Undertaking' for Ramallah and Al Bireh Governorate is responsible for the majority of water supply services and administration/management for almost all of the 73 localities in the Governorate, with the exception of the 27 localities which have their water services controlled by the 'West Bank Water Department.' In 2010, the average per capita water consumption rate in Ramallah and Al-Bireh Governorate was 108 liter/capita/day, which was the second highest of the West Bank Governorates. This is also greater than the average per capita allocation in the West Bank, which is 73 liter/capita/day (PWA, 2012). However, the consumption rate varies from one locality to another in the Governorate; in some cases this rate is less than 28 liter/capita/day and therefore well below the World Health Organization's (WHO) recommendation of minimum consumption of 100 liter/capita/day.

The population of Ramallah and Al-Bireh Governorate is distributed over 73 localities. Three localities, with a combined population of 1,524, are not served by the water network (PWA, 2012). However, in some cases, the water network coverage in the served communities may not be complete (partial coverage). These un-served neighborhoods are dependent upon water tankers, rainwater collection systems, agricultural wells and springs (PWA, 2009). Rainwater collection systems are frequently used in the Governorate because the area receives a comparatively high amount of rainfall, reaching around 615 mm annually.

3.3.1 Waste Water

Practices for managing domestic wastewater in Ramallah and Al-Bireh Governorate are limited to the collection of wastewater by sewage networks and/or cesspits. Wastewater treatment facilities are restricted to a few localities in the Governorate.

In Ramallah & Al-Bireh Governorate 9 localities out of 73 (approximately 25% of the population) are connected to wastewater collection networks. However the condition of wastewater networks in many locations are aged and need of repair as they often cause frequent floods and leaks. Communities without connection to a wastewater network discharge their wastewater into cesspits without appropriate lining, which facilitates its infiltration into the soil and open channels (ARIJ – WERD, 2012). Vacuum tanks are rarely used due to the high cost of this type of service. In the case of Palestinian refugee camps in the Governorate (Kadora Camp, Deir Ammar Camp, Al Jalazun Camp, Silwad Camp and Al Am'ari Camp), three of the five camps are connected to sewage networks (ARIJ – WERD, 2012). In most of the connected refugee camps, the sewage network receives both rainwater and domestic wastewater so that, during the rainy season, the wastewater overflows into streets, agricultural land, and houses. Therefore, wastewater is almost uncontrolled, and this causes serious environmental problems and health risks.

Approximately 5.96 MCM of wastewater is generated annually in Ramallah & Al-Bireh Governorate (ARIJ – WERD, 2012). However, wastewater generation could be significantly higher than the figures reported herein as these figures were calculated based on the total volume of municipal freshwater minus the total volume of fresh water losses and the result was multiplied by 80%.

Sewage networks in Ramallah & Al-Bireh Governorate are supported by wastewater treatment plants, namely Ramallah WWTP and Al-Bireh WWTP. The wastewater treatment capacity in the Governorate is the highest across the West Bank Governorates. The volume of treated wastewater in 2010 for Ramallah and Al Bireh Governorate was approximately 2.64 MCM, which represents approximately 33.5% of the total wastewater generated in the Governorate (ARIJ – CENTA 2010). This number exceeds the total quantity of wastewater collected in the sewage network (2.14 MCM in 2010). The quantity of wastewater treated exceeded the quantity collected because these wastewater

treatment plants also received water to be treated from vacuum tankers. Al-Bireh WWTP also receives wastewater generated from Pesagot, the nearby Israeli settlement, which hosts around 1,572 Israeli settlers. This connection between the settlement and Al-Bireh WWTP was made without the approval of the PWA.
Al-Bireh wastewater treatment plant (WWTP) was constructed in 2000 and is located in Wadi Al-'Ein, 2 km south-east of Al-Bireh City. Currently Al-Bireh WWTP serves approximately 46,000 persons residing in Al-Bireh City, Qaddura Camp, Al Am'ari Camp and some neighborhoods of Ramallah city. It treats an average daily flow of 5,000 m3 of wastewater originating from domestic, commercial, and industrial sources. Al Bireh WWTP is currently operating well with a high BOD5 removal efficiency, which ranges between 95% and 97%. It was planned to reuse the treated wastewater from Al –Bireh Treatment plant for agricultural irrigation of fodder on the agricultural lands of Deir Debwan. However, this has never been accomplished due to the delayed approval of the Joint Water Committee (JWC) on the licensing of the reuse pipeline because it runs through Area C. Currently therefore, the effluent is diverted into a regulation tank and then disposed directly into Wadi Al-'Ein. A portion of the effluent is pumped into a special water tanker to be used for landscape irrigation in Al-Bireh City (Al-Bireh Municipality, 2010).

Ramallah WWTP receives the wastewater generated by approximately 22,000 persons from Ramallah City and some neighborhoods of Al-Bireh City, in addition to wastewater from the industrial zone and the discharge of vacuum trucks from Ramallah and Beituniya cities. The wastewater flow rate towards the treatment plant is approximately 2,200 m3/day. Currently, Ramallah WWTP is not operating well and does not meet the requirements for effluent discharge because it is hydraulically and organically overloaded and has been improperly operated and maintained due to lack of financial resources (Ramallah Municipality, 2010).

3.3.2 Solid Waste

Practices for managing solid waste in Ramallah and Al-Bireh Governorate include the collection of waste, its transportation to random dumpsites or sanitary landfills (either inside or outside the Governorate boundaries, depending which locality waste is produced in), and solid waste processing including plastic recycling and land filling.

Across the Governorate, the responsibility for solid waste collection is split between several authorities. The Joint Service Council for 'Service Planning and Development' (JCspd) assumes either full or joint control of 17 localities in Ramallah and Al-Bireh Governorate, whereas the Village Councils and Municipalities are responsible for solid waste management for 28 and 20 localities respectively. In addition, a private contractor serves two localities in the Governorate; Al Mughayyir village and Deir Abu Mash'al village.

UNRWA is responsible for managing solid waste in Deir Ammar, Al Jalazun, and Al Am'ari camps. In Kadora camp and Silwad camp, the responsible for managing solid waste belongs to Ramallah and Silwad Municipalities, respectively (ARIJ – WERD, 2012)

Official solid waste collection services cover almost all of the localities in the Governorate, with the exception of Deir Al Sudan and Abu Qash. Based on the solid waste generation rate[13] and population number, it is estimated that Ramallah and Al-Bireh Governorate produces approximately 236 tons of domestic solid waste daily, which equates to 86,000 tons annually (ARIJ – WERD, 2012). Approximately 59 tons of solid waste are collected and dumped daily in Ramallah dumping site,

13 Per capita solid waste generation rate for rural localities is 0.7kg/day and for refugee camps and urban localities is 1.05 kg/day

located in Betunya, whilst and estimated 38 tons are dumped in Al Bireh dumping site. In addition, 139 tons of solid waste are collected and dumped daily in open and uncontrolled dumping sites across the Governorate.

A plan has been developed to open a new sanitary landfill named 'Ramoun' to serve all the localities in Ramallah and Al-Bireh Governorate. The Joint Service Council for Solid Waste Management in the Governorate of Ramallah and Al Bireh is responsible for managing and operating the proposed landfill. The landfill will be constructed on lands belonging to the village of Ramoun situated to the north-east of Ramallah on an area of 170 dunums (RJSC, 2012). The total cost of the construction of the landfill is approximately 14 million euros, funded by the German government. The landfill will serve the entire Ramallah and Al-Bireh Governorate (approx. 285,000 people) and is expected to become operational in 2014 (RJSC, 2012). The landfill will facilitate the safe disposal of solid non-hazardous waste and reduce the need for unsafe dumping sites across the Ramallah and Al Bireh Governorate (RJSC, 2012).

The proposed Ramallah/Al Bireh landfill is part of the 'Palestinian National Solid Waste Management Strategy,' which seeks to implement three sanitary landfills in the West Bank. One will serve the northern regions and is located in Jenin Governorate, a second will serve the southern areas in the Bethlehem and Hebron regions, and the third will be located in the central part of the West Bank to serve the villages and towns of the Ramallah and Al Bireh Governorate. (RJSC, 2012)

3.4 Environmental Conditions

3.4.1 Water Crisis

Israeli occupation forces control ground water resources and prevent Palestinians from drilling new wells and water networks and/or developing existing water infrastructure. Moreover, the Israeli water company Mekorot has a significant role in controlling West Bank water resources, as it controls many deep wells located within Ramallah and Al-Bireh Governorate. Mekorot wells essentially serve the Israeli settlements with low water prices, whilst selling Palestinians their own water at higher prices. The quantity of water supplied to the illegal Israeli settlements in the West Bank is disproportionate when compared to the quantity supplied to the Palestinians. Israeli settlers' water consumption for household use is more than 400 liter/day, while the Palestinians in some localities do not consume more than 40 liter/day. (ARIJ –WERD 2012)It is further worth mentioning here that the reduced water flow in springs in the West Bank is a direct result of Israel's control over the groundwater and the groundwater wells, as it is common practice for Israeli occupation authorities to dig wells very near to Palestinian springs.

In recent years, water springs in the vicinity of Israeli settlements throughout the West Bank have become the targets of settler activities that eliminate or threaten Palestinian access to them. The inability to access or use springs has significantly undermined the livelihoods and security of Palestinians living in affected communities. Many farmers have been forced to either cease cultivating their land or face a reduction in productivity. This has further increased expenditure for herders and households who are forced to purchase water brought in through pipes and tankers. Many other springs and related water infrastructures utilized by Palestinians are also subject to malicious attacks and vandalism from settlers (ARIJ, 2012).

Water projects and infrastructure within Area C require an official permit from the Joint Water Committee (JWC) and the Israeli Civil Administration. This is a long, bureaucratic procedure, which

often results in permission being denied. Projects executed without prior approval are demolished by the Israeli military. Recently, there has been a significant increase in these demolitions. Between 2009 and 2011 the Israeli military demolished 173 water, sanitation, and hygiene structures, including; 57 rainwater collection cisterns, 40 community wells, irrigation equipment vital for food production, and at least 20 toilets and sinks. This has affected an estimated 14,937 people. Palestinian water structures that have been destroyed include storage and rainwater cisterns, wells, springs, water tanks, and agricultural ponds. Some of these structures were demolished under the pretext that they were constructed without obtaining the relevant Israeli permission, whilst many were demolished without reason. This aggressive policy aims at intentionally restricting, displacing, and eliminating Palestinians from specific areas of the West Bank for the strategic purpose of settlements and related infrastructural expansion (ARIJ, 2012).

3.4.2 Wastewater Management

The absence of a public sewage network in most of the localities in Ramallah and Al-Bireh Governorate means that most residents use cesspits for the disposal of wastewater, and/or discharge wastewater in streets and open areas. These actions cause environmental damage, health problems, and the spread of epidemics and diseases in the area. The use of cesspits pollutes the groundwater and springs, making the water inappropriate for human consumption. This is due to the fact that most cesspits are built without lining, to avoid the need for sewage tankers, which allows wastewater to seep into the ground and Since the occupation of the West Bank in 1967, Israel has neglected development projects for water and sanitation in the Palestinian Territory, although the Israeli authorities collect taxes from the Palestinians for the provision of such services. The proceeds of these taxes are mostly invested in the interests of the occupation authorities and settlers; the Israeli State has broken agreements related to the protection of the environment and sustainable use of natural resources throughout the Peace Process. Although the Palestinian Authority has drawn up plans and strategies related to wastewater treatment, Israel has deliberately impeded the implementation of such water and sanitation projects (ARIJ, 2010).

3.4.3 Solid Waste Management

The obstacles created by the Israeli authorities for local and national institutions in providing good solid waste management services such as refusing to grant licenses to establish landfills because the appropriate land is within Area C and under Israeli control, hinder the development of the solid waste sector. The lack of a sanitary landfill is a health hazard a source of pollution to the groundwater and soil through the leachate produced from the solid waste, and produces odors and distortion of the landscape.

The Israeli occupation additionally uses Palestinian lands in the West Bank for dumping solid waste generated by Israeli settlements.

PART FOUR:
Geo-Political Status in the Ramallah & Al Bireh Governorate

4.1 Ramallah Governorate and the Israeli occupation

Following the 1948 war, Israel was established on more than 78% of the total area of historic Palestine. In 1949, the armistice line (also known as the Green Line) was drawn along the boundary between land occupied by Israel and the remaining Palestinian land in the West Bank, which became under Jordanian control. Part of the occupied territory along Al Latrun northwest Jerusalem was under dispute and thus was considered as "no man's land". Parts of Beit Nuba, Beit Leqyia, Beit Sira, Budrus, Al Midya, Ni'lin, and Saffa villages's lands west of Ramallah Governorate, formed then 5.1% of the total Governorate area (43,872 dunums). According to the Oslo II Interim Agreement signed in September 1995 between the Palestinian Liberation Organization (PLO) and Israel, 96,456 dunums (96.456km²) of Ramallah Governorate lands were classified as Area A (under Palestinian control); while 209,224 dunums (209.224km²) were classified as Area B (under Palestinian civil administration but Israel continues to have overriding control on security); and the remaining 549,906 dunums (549.906km²) were classified as Area C (under full Israeli control).

Map 8: Ramallah's Governorate location in the Occupied Palestinian Territory.

Source: ARIJ - GIS Unit, 2011a.

4.2 Israeli Occupation Practices in Ramallah Governorate

During the past 46 years of Israeli occupation of Ramallah Governorate, 29 illegal Israeli settlements containing a total population 112,381 Israeli settlers have been established on an area of 34,157 dunums (34.157 km²) of Ramallah Governorate's land (ARIJ database, 2012) (See table 34).

Table 34: Israeli settlements in Ramallah Governorate

No.	Israeli Settlement	Date of Establishment	Area (dunum)	Population 2011
1	Ateret	1981	655	849
2	Beit Arye	1981	1474	Combined population with Ofarim
3	Beit Il	1977	2010	6120
4	Beit Horon	1977	1183	1139
5	Canada Park	1968	2576	n/a
6	Dolev	1983	1124	1282
7	Hallamish	1977	626	1173
8	Hashmona'im	1985	1136	2880
9	Kfar Rut	1977	814	279
10	Kokhav HaShahar	1977	1697	1881
11	Kokhav Ya'acov (Abir Ya'acov)	1984	282	6468
12	Lapid	1996	440	2706
13	Ma'ale Levona	1983	514	793
14	Ma'ale Mikhmas	1981	1287	1403
15	Makkabim	1982	1969	15582
16	Mattityahu	1980	645	1538
17	Menora	1998	682	2716
18	Mevo Horon	1969	1354	1929
19	Mizpe Rahel	1992	327	600
20	Modi'in Illit	1991	3907	52060
21	Na'aleh	1982	938	1094
22	Nahla'iel	1984	415	464
23	Nili	1981	761	942
24	Oasis of Peace	1970	157	266
25	Ofarim	1988	492	4341
26	Ofra	1975	2262	3543
27	Pesagot	1981	75	1806
28	Rimunim	1977	393	833
29	Roman Bathing House	n/a	75	n/a
30	Sha'alvim	n/a	267	1188
31	Shilat	1977	780	501
32	Shilo	1978	752	2407
33	Talmon	1989	2086	3073
	Total		**34157**	**121856**

Source: Geo-Informatics Department, ARIJ 2013

Between 1996 and 2012, Israeli settlers have established 51 illegal outposts on the outskirts of the aforementioned settlements. This is in order to expand the master plans of existing settlements or to lay the foundations for the establishment of new settlements at these locations (See Table 35).

Consecutive Israeli governments have worked to link established settlements with one another, and then with Israel, by creating a network of bypass roads throughout the West Bank that stretch 810km in length. 317km (39%) have been constructed in and around Ramallah governorate.

Table 35: Israeli outposts in Ramallah Governorate

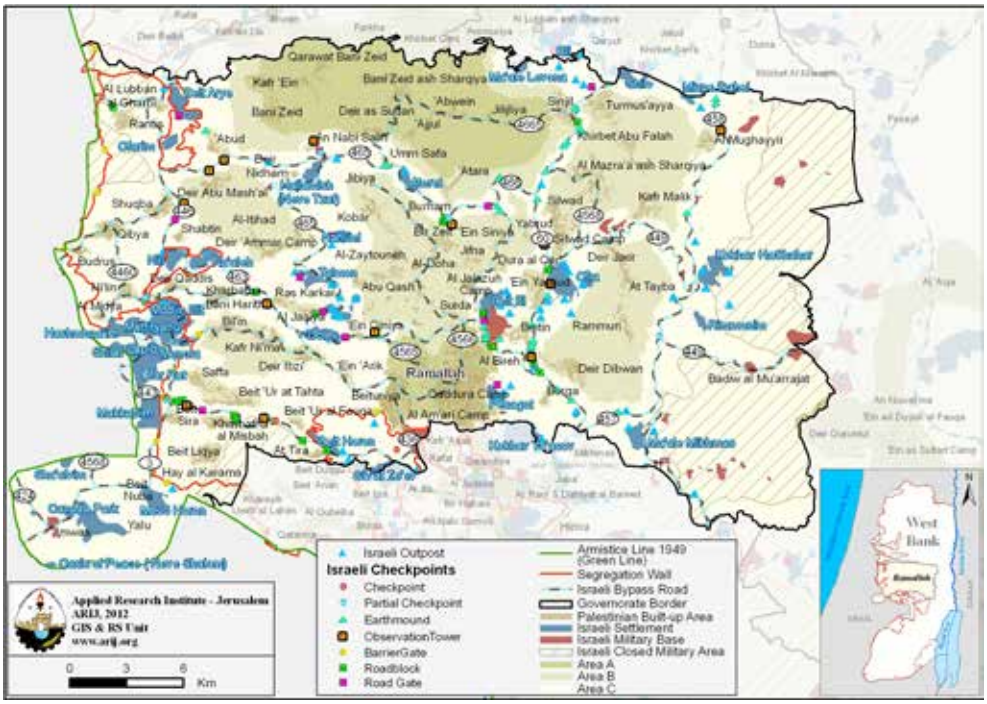
No.	Outpost Name	Establishment Date	Closest Mother settlement
1	South Eli	Feb 2001-Nov 2002	Eli
2	Eli South (Hill 792)	Feb 2001-Nov 2002	Eli
3	Eli South/Apiryon Hill/Haro'e	Jan 2002	Eli
4	Givat Harel	Jan 1998	
5	Elisha Preparatory (Zofit)	Jan 1999	
6	Ateret North	Feb 2001-Nov 2002	
7	Neve Yair	Jan 2001	
8	Nahleil Tel	Jan 2002	
9	North Modi'in Illit	2002-June 2003	
10	South Ofra	Jan 2001	
11	Ofra South	Dismantled by Ben Eliezer	
12	Beit Hagdud/ Eretz Law Institute	Jan 2004	
13	Tal Binyamin Synagogue	Jan 2002	
14	Ginot Arye	Jan 2001	
15	Hill 857/ Jabal Artis	Jan 2001	Beit Il
16	Harasha	Jan 1997	
17	Horesh Yaron	Jan 1997	Talmon
18	Mitzpe Shlomo South	Jan 2003	
19	West Rimmonim	June 2003-Jan 2004	
20	Mitzpe Shlomo/ Maale Shlomo	Jan 1999	
21	Mitzpe Kramim	Jan 2001	Kochav Hashahar
22	Ahavat Hayim	NA	
23	Mizpe Haai	Jan 2001	
24	Psagot South East	N/A	
25	Psagot East	Jan 2002	
26	North East Pesagot	Sept 2004-Sept 2005	
27	East Beit El	June 2003-Jan 2004	
28	Beit El East	Jan 2002	
29	Mitzpe Danny	Jan 1999	Ma'ale Mikhmas
30	North Maale Mikhmas	Jan 2003	
31	Far North Maale Mikhmas	2002-June 2003	
32	East Naaleh	Jan 2004-Aug 2004	
33	Nili Northeast	N/A	
34	East Beit Horon	Jan 2002	

No.	Outpost Name	Establishment Date	Closest Mother settlement
35	North Givat Zeev Construction	1996-Feb 2001	
36	Amona	Jan 1997	
37	Ofra North East	Jan 2004	
38	Ofra East	Feb 2001-Nov 2002	
39	British Police Station	Jan 2002	
40	Hashmonaim North	N/A	
41	Migron	Jan 2002	
42	North West Beit Arye	1996-Feb 2001	
43	Pool Hill Compound	N/A	
44	Caravan Compound	N/A	
45	School Compound/ East of Talmon A	N/A	
46	Nerya	N/A	
47	Asaf Hill/ T Junction	Jan 2002	Ofra
48	Mevo Horon Agricultural Farm	Jan 2002	Mevo Horon
49	Zayit Ra'anan	Jan 2001	Talmon
50	North Kokhav Hashahar	June 2003-Jan 2004	
51	South East Mitzpe Rahel	Before Nov 2002	

Source: Geo-Informatics Department, ARIJ 2013

During the Second (Al-Aqsa) Intifada, Israeli authorities stepped up their belligerent occupation-related activities in the Occupied Palestinian Territory, destroying Palestinian agriculture, confiscating land, demolishing Palestinian houses, expanding settlements, erecting outposts, expanding bypass roads, imposing severe restrictions on Palestinians' freedom of movement and the construction of the Segregation Zone. Table 36 indicates some of the Israeli violations in Ramallah Governorate.

Map 9: Geo-political status of Ramallah Governorate.



Source: ARIJ - GIS Unit, 2011a.

Table 36: Israeli violations in Ramallah Governorate during the years 2001-2012

Date	Land Confiscated (Dunum)	Uprooted Trees	Demolished Houses	Houses Threatened of Demolition
2001	12,758	9,420	5	24
2002	834	282	35	0
2003	4,655	64,398	28	30
2004	22,002	30	17	8
2005	10,383	1,607	2	6
2006	705	500	10	1
2007	500	0	1	0
2008	320	81	2	3
2009	179	635	0	4
2010	7,243	845	10	54
2011	1,315	435	8	1
2012	30	790	0	2
Total	**60,924**	**79,023**	**118**	**133**

Source: Urbanization Monitoring Department, ARIJ 2013

4.3 Ramallah and the Segregation Plan

The Segregation Wall in Ramallah Governorate extends along 89.4 kilometers, cutting through 19 Palestinian villages and towns and isolating huge tracts of land from those villages and towns. The Segregation Wall will end up encompassing 17 Israeli settlements (out of 32) onto the west side of the barrier. Table 37 shows the status of the Israeli Segregation Wall in Ramallah Governorate.

Table 37: Status of Israeli segregation wall in Ramallah Governorate

Status of the Segregation Wall in Ramallah Governorate (km)	
Existing sections	72.5
Planned sections	13.9
Under Construction	3.00
Total length	**89.4**

Source: Geo-Informatics Department, ARIJ 2013

Upon its completion, the Segregation Wall will isolate 99,250 dunums (99.3 km²) of Palestinian land in Ramallah Governorate and will disrupt life in 19 Palestinian villages. The residents of these disrupted villages will suffer from restricted movement and access to areas segregated by the Wall, which include their home and land. This will undoubtedly negatively impact upon their livelihoods as well as other vital social, health and educational services. The following table shows the land use/ land cover of the area isolated west of the Segregation Wall in Ramallah Governorate.

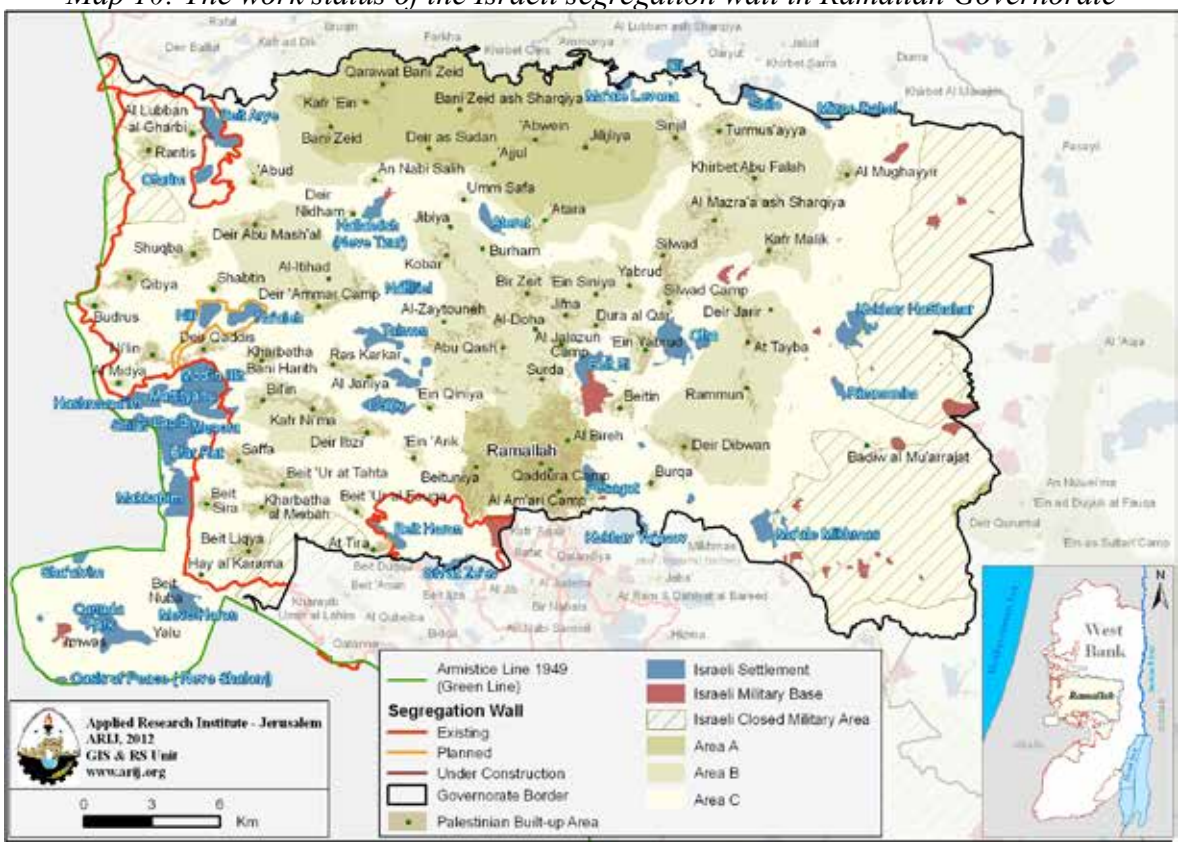
Table 38: Land Use/Land Cover of area isolated behind the Segregation Wall in Ramallah Governorate

Land Type	Area (Dunums)
Agricultural Lands	31697
Forests	13009
Others	736
Open Space	30672
Wall Zone	1237
Israeli Military Base	1413
Israeli Outpost	26
Israeli Settlements	20409
Palestinian Built-up Area	51
Total Area	**99,250**

Source: Geo-Informatics Department, ARIJ 2013

Entrance to isolated agricultural lands is restricted to those who are able to prove land ownership authenticated by the Israeli Civil Administration. Only those owners who have their names listed in the ownership deeds (usually the eldest of the families) receive permits. Furthermore, issuance of permits by the Israeli Civil Administration is on seasonal basis; hence, the owners will find it increasingly difficult to manage their cultivated lands on their own, especially since the permits do not include additional labor, resources and/ or equipment.

Map 10: The work status of the Israeli segregation wall in Ramallah Governorate



Source: ARIJ - GIS Unit, 2011a.

4.3.1 Main Impact of the Segregation Plan on Ramallah Governorate

The construction of the Segregation Wall has had a negative impact on the economic, social and environmental aspects of Palestinians' lives. The following is a summary of the main consequences.

Political Impact

- The Israeli Segregation Wall redraws the political boundary of Ramallah Governorate.
- The Segregation Wall redefines the demographic balance of the governorate with more than 12% of its area taken in toward Israel.
- The Segregation Wall is creating new demographic facts that will lead to forced migration among Palestinians who will lose their livelihoods.
- The Plan will sever the organic tie between Ramallah and other Palestinian Governorates.

Economic Impact

- The Segregation Plan causes severe damages to the Palestinian agricultural sector and to Palestinian farmers as a result of land confiscation and the constraints imposed on mobility and marketing.
- Israel maintains control over Palestinian trade and tourism.
- Increased unemployment leading to an increase in poverty levels.
- Rise in land prices and reduction of investment opportunities.

Social Impact

- Thousands of Palestinian citizens will be cut off from their main urban centers where most health, educational and social services are located.
- Harsh measures are imposed on Palestinian mobility and movement; transportation to and from segregated areas is extremely difficult.
- The Segregation Zone is severing social relations between Palestinian citizens living on either sides of the Wall.
- Increased urbanization pressure and population density.

Environmental impact

- Decrease of areas designated for landfills and wastewater treatment sites.
- Decrease of areas designated for natural reservations, forests, pastures, open spaces and recreation areas.
- Loss of open space which poses a threat to the sustainability of the urban and rural areas as well as a threat to further losses of natural resources and biodiversity.
- Loss of grazing area and increase in desertification.
- Distortion of wildlife cycle; different types of animals prevented from accessing their natural habitat particularly during migration seasons.
- Alteration of Palestinian natural landscape
- Many significant archeological and historical sites related to Palestinian cultural heritage will be cut off by the Wall.

International Legal Status of the Segregation Wall

In July 2004, the International Court of Justice (ICJ) passed an advisory opinion declaring that the Israeli Segregation Wall is illegal. The Court based its decision based on international laws, including the Fourth Geneva Convention, the Hague Regulations, various human rights treaties and United Nations Security Council resolutions.

> *"Recalling relevant United Nations resolutions affirming that actions taken by Israel, the occupying Power, to change the status and demographic composition of Occupied East Jerusalem have no legal validity and are null and void, Noting the agreements reached between the Government of Israel and the Palestine Liberation Organization in the context of the Middle East peace process."*

The Israeli Segregation Wall violates the right to freedom of movement, the right to work, the right to medical treatment, the right to education, the right to an adequate standard of living and access to holy places. The ICJ decision upholds the right to self-determination of the Palestinian people; the Segregation Wall disrupts the territorial integrity, unity and contiguity necessary for a future Palestinian state. "Self-defense" or a "state of necessity" cannot be used as justification for violating these right or other international legal principles. Therefore Israel must cease construction and all other states must refrain from supporting Israel in building the Wall.

Furthermore, the construction of the Segregation Wall is an explicit violation of all peace agreements signed between the Israelis and Palestinians and a breach of the Oslo Interim Agreement which states that: "Neither side shall initiate or take any step that will change the status of the West Bank and the Gaza Strip pending the outcome of the permanent status negotiations" (Article XXXI, clause 7).

4.4 Terminals in Ramallah Governorate

Checkpoints and terminals are another tool employed by Israel to control the lives of more than 2.6 million Palestinians living in the occupied West Bank. They restrict the movement of Palestinians to designated roads and through checkpoints and terminals controlled and operated by Israeli soldiers. This infrastructure of the occupation is often a source of abuse and human rights violations against Palestinians by Israeli soldiers; over the last years of the Second Intifada, 120 Palestinians were killed at checkpoints. Checkpoints reinforce an apartheid system in which Israelis can move freely but Palestinians cannot.

In September 2005, Israel established 11 border-crossing checkpoints and checkpoint terminals through which West Bank Palestinians holding valid Israeli-issued permits would be allowed to enter Israel. The border crossing checkpoints regulate the movement of Palestinians throughout the West Bank and most significantly to regulate the entry and exit of Palestinians to and from Jerusalem city. Analysis conducted by ARIJ showed that the number of border crossing checkpoints established in the West Bank exceeded that declared by Israel in 2005 and are identified today as: Al Jalameh (Galbuo') – Jenin; East Barta'a (Rehan) – Jenin; Eyal (Qalqilyia DCO)- Qalqilyia; Sha'ar Efrayim (Irtah Gate) - Tulkarem; 'Atarot (Qalandiya) - Jerusalem; Shu'fat refugee camp - Jerusalem; Haziteim (Mount of Olives)–Jerusalem; Rachel-Gilo 300-Bethlehem; Tarqumiya–Hebron; Har Homa Mazmurua – Bethlehem; Bazaq crossing- north of the Jordan Valley, near Mehola settlement; Betuniya–Ramallah; Ras Abu Sbeitan- Az Zayem in Jerusalem; and Eliyahu crossing (HaPerot Junction). The transport of agricultural goods, animals and animal products destined for the West Bank is done only via the "back-to-back" crossings such as Gilboa-Jalameh -

Jenin; Sha'ar Efraim (Irtah Gate)-Tulkarem; Betuniya-Ramallah; Har Homa Mazmuria–Bethlehem; and Tarqumiya-Hebron.

Israeli military orders issued after September 2005 revealed that an additional seven new terminals are to be constructed in the West Bank and are identified as: Al-Jab'a, Al Khader, Al-Walajeh - Bethlehem and Um Salamuna in Bethlehem Governorate; Meitar (Sham'a) – Hebron; Maccabim-Modi'in (Beit Sira) - Ramallah; and Hizma –Bahurim in East Jerusalem.

Israel has attempted to justify its terminals project on the questionable grounds that the terminals are built to facilitate Palestinians' life and bring about contiguity within Palestinian districts. Israel attempts to legitimize the terminals issue which stands in violation of international law on the freedom of movement, by asking the World Bank to subsidize the terminals project; but the latter refused the Israeli request since the terminals are not constructed on the internationally recognized Armistice Line of 1949 (Green Line).

According to the Universal Declaration of Human Rights (1948) all people are entitled to the recognition of inherent dignity and certain inalienable rights, which are the "foundations of freedom and justice in the world." Freedom of movement is part of the "liberty of man" (Jagerskiold) thus making it one of the most basic human rights.

Article 13 of the Universal Declaration of Human Rights stipulate:

Everyone has the right to freedom of movement and residence within the borders of each State.

- **Betuniya (Commercial Terminal)**

Betuniya terminal is located 4 kilometers to the southwest of Ramallah city and around 15 kilometers from the 1949 Armistice Line (Green Line). The Israeli Army issued military orders holding numbers (06/01/T) and (59/03/T), which stated the confiscation of 122 dunums of Betuniya's land to construct the terminal, which is designated as a commercial terminal to facilitate trade and transportation of commodities between the northern governorates of the West Bank and Jerusalem, hence Israel. The terminal started operating in 2006.

Hours of operation are: Sunday – Thursday, 07:30 – 16:30; Friday, 07:30 – 13:00; and closed on Saturday. Passage of Palestinian pedestrians or private cars is prohibited. Commercial truck drivers holding Jerusalem IDs are allowed to pass through the checkpoint with their goods and deliver them directly to the end destination. However, commercial truck drivers who hold Israeli citizenship are not allowed to cross; goods are transferred to Palestinian trucks using the "back-to-back" system.[14]

- **Meccabim Crossing point**

This terminal is located at the section of the Segregation Wall close to Modi'in Illit settlement (Qiryat Sefer), located within the Modi'in Illit settlement bloc west of Ramallah. The terminal is the only passage for Palestinian workers residing in Ramallah areas into Israel since Israel constructed the Segregation Wall in 2002.

14 Israeli Checkpoint Terminals: Status of Construction
http://www.nad-plo.org/userfiles/file/pmg-reports/special/PMG.Checkpoint.Terminals.14.12.06.pdf

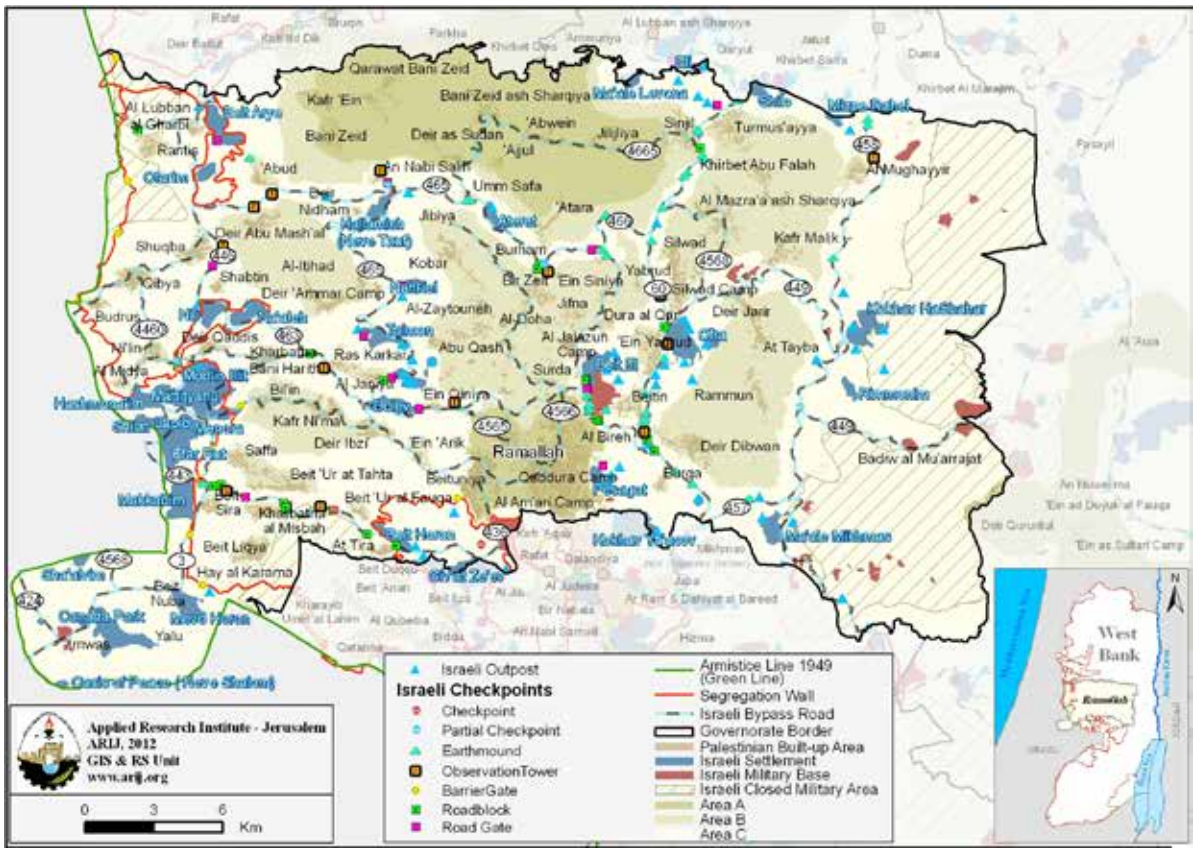
- **Ofra Crossing Point**

On 22nd January 2010, Israeli daily newspaper Haaretz reported that a crossing is planned to replace the Ofer checkpoint located west of Ofer Military Camp (at Betuniya Junction). The map that was provided with the Israeli military order number 14/10/T supported this Haaretz publication. A crossing is to be constructed at Giv'at Ze'ev settlement junction to replace the Ofer checkpoint. This crossing will control the movement of Palestinians on bypass road no. 443 after lifting the travel ban.

- **Limiting the Entry of Palestinians to Israel**

In 2009, Israel limited the entry of Palestinians holding West Bank IDs and permits allowing them to enter Israel to 11 major terminals along the course of the Segregation Wall. The names of the terminals, as declared by Israel, were identified as: Al Jalameh (Galbuo') – in Jenin Governorate; East Barta'a (Rehan) – in Jenin Governorate, Sha'ar Efrayim (Irtah Gate) – in Tulkarem Governorate; Eyal (Qalqilyia DCO)- in Qalqilyia Governorate; Maccabim- Modi'in (Beit Sira) – in Ramallah Governorate; 'Atarot (Qalandiya) – in Jerusalem Governorate; Ras Abu Sbeitan- Az Zayem in Jerusalem Governorate; Rachel-Gilo 300- in Bethlehem Governorate; Tarqumiya and Metar (Sham'a) – in Hebron Governorate.

Map 11: Locations of Israeli terminals in Ramallah Governorate



Source: ARIJ - GIS Unit, 2011a

4.5 Israeli Settlement Plans in Ramallah Governorate

Israel's National Priority Areas

In its session held on 29th January 2012, the Israeli government approved a new colonial project entitled "National Priority Areas", which details a package of benefits and financial allocations to be granted to certain targeted areas. According to the map of National Priority Areas developed by the Israeli government, of 557 communities targeted in this project, 89 are illegal Israeli settlements who will benefit from the Cabinet's decision. Financial allocations will include the industry, agriculture and housing sectors in addition to offering substantial discounts on land prices. The Israeli government sells the land to contractors for less than its full market value (usually as much as 50% lower) and then the contractor sells the new housing units for the lowest price.
Out of the 89 Israeli settlements targeted in the occupied West Bank, 14 that lie within Ramallah Governorate have been designated by the Israeli government for the aforementioned benefits. The designated settlements are: Ateret, Na'aleh, Beit Il, Dolev, Halamish, Kokhav Ya'acov (Abir Ya'acov), Ma'ale Levona, Nahla'iel, Nili, Ofra, Pesagot, Rimunim, and Talmon. The 14 settlements occupy a total land area of 12,141 dunums (12.1 km²) and are home to more than 28,000 Israeli settlers.

Expansion of Israeli settlements in Ramallah Governorate

A study conducted by the Applied Research Institute – Jerusalem (ARIJ) based on the analysis of high precision aerial photos taken in August 2012 showed that Israel continues to build in Israeli settlements and outposts in the Occupied Palestinian Territory. Analysis of the satellite images showed that during 2012, out of the 199 illegal Israeli settlements established in the West Bank including East Jerusalem, settlement construction occurred in 151 (76% of total number of settlements), with the construction of 1,872 structures, including 1,018 buildings and the establishment of 854 caravans (mobile homes). Israeli settlements built in Ramallah Governorate witnessed the highest construction rate in terms of added buildings and caravans (See Table 39).

Table 39: Buildings and caravans added to Israeli settlements in the occupied Palestinian Governorates

Governorate	No. of Buildings	No. of Caravans	No. of Israeli settlements which had been expanded
Bethlehem	117	51	15
Hebron	40	130	22
Jenin	30	43	5
Jericho	35	81	16
Jerusalem	198	105	25
Nablus	45	109	11
Qalqilyah	160	52	14
Ramallah	191	218	21
Salfit	188	53	15
Tubas	3	0	3
Tulkarm	11	12	4
Total	1018	854	151

Source: Geo informatics Department, Applied Research Institute Jerusalem- ARIJ, 2012.

Expansion of Beit El Settlement

On 11th February 2013, the Israeli Defense Minister, Ehud Barak approved the construction of 90 settlement units in the illegal settlement of Beit Il, north of Ramallah Governorate. These newly announced settlement units are part of an overall plan to build 300 settlement units in Beit Il for the Israeli settlers of Giv'at HaUlpana settlement outpost, as promised by the Israeli government in June 2012. This plan is being implemented by the Israeli Civil Administration as part of a compensation package for the evacuation of the illegal outpost of Giv'at HaUlpana [15] which was declared eight months ago by the Israeli Prime Minister, Benjamin Netanyahu [16].

The Giv'at HaUlpana outpost was classified as illegal by the Israeli High Court of Justice based on a ruling that the 30 housing units (5 buildings) comprising the outpost were built on the privately owned Palestinian land of Ein Yabroud village in Ramallah Governorate. Giv'at HaUlpana outpost was among the outposts considered illegal according to the Sasson report [17] of 2005 and accordingly was ordered to be dismantled. Sasson said in her report, "*..there is no legal difference between the 71 outposts [18] that went up before March 2001 and the 24 established after that date. They are all illegal. It is important to emphasize that it's not merely to evacuate the outposts but to cease the entire procedure of budgeting and transferring state funds to the outposts. The very heart of the report is about the enforcement of the law, which is not a political issue, but a legal one, of tremendous importance for a democratic state [19].*"

The Israeli government is now attempting to reconstruct and relocate Giv'at HaUlpana outpost inside its mother settlement of Beit Il, which is illegal according to international law and human rights conventions.

The annexation of Modi'in Illit Settlements Bloc

Modi'in Illit settlement bloc is located west of Ramallah city and contains 13 Israeli settlements; Kiryat Sefer (Modi'in Illit), Hashmona'im, Kfar Rut, Lapid, Menora, Mattityahu, Miccabim and Shilat, Mevo Horon, Roman Bathing House, Oasis of Peace, Sha'alvim and Canada Park tourist settlement. The settlements are inhabited by more than 81,000 Israeli settlers and occupy a total land area of 15,031 dunums (15 km²). This land belongs to 8 Palestinian villages west of Ramallah Governorate; Beit Nuba, Beit Sira, Saffa, Kharbatha Al Misbah, Ni'lin, Bil'in and Deir Qiddis.

In 2005, the Israeli Information Center for Human Rights in the Occupied Territories revealed plans to expand the Modi'in Illit settlement bloc in Ramallah Governorate on privately owned Palestinian lands located west of the Israeli Segregation Wall. 600 dunums of lands are targeted. Plan number 210/8/1 (Mattityahu East) will be constructed on Bil'in village land. Plan number 210/6/3 (Mattityahu North 3) will be constructed on land belonging to Deir Qiddis and Ni'lin villages. Plan number 210/4/2 (Modi'in Illit East) will be constructed on land belonging to Bil'in and Kharbatha Al Misbah villages. Plan number 211/2 (Menora Southeast) will be built upon Saffa village territory.

15 Ulpana is an illegal Israeli outpost was established in 1995 outside the Israeli boundaries of the illegal settlement of Beit Il. The outpost located about 200 meters east of Beit Il settlement on a hilltop called Jabal Artis is owned by Palestinian residents from Ramallah Governorate.
16 PM: Ulpana homes to be evacuated, rebuilt elsewhere in Beit El
17 According to the Sasson report, an official Israeli government report prepared by the former head of the State Prosecution Criminal Department, Talia Sasson, published on March 8, 2005, Ulpana outpost was deemed illegal and marked to be dismantled.
18 Giv'at HaUlpana is one of them.
19 "Government okays Sasson report, panel set up to implement it"
http://www.haaretz.com/print-edition/news/gov-t-okays-sasson-report-panel-set-up-to-implement-it-1.152983

4.6 Conclusion

Despite international condemnation, Israel is proceeding with its unilateral plans to build the Segregation Wall, which in turn isolates and confiscates large tracts of Palestinian lands in Ramallah. If this continues, Palestinian communities in Ramallah Governorate will be completely surrounded by a complex of walls, settlements and roads that will eliminate any future possibility for expansion and thus jeopardize sustainable development.

The Applied Research Institute-Jerusalem (ARIJ) stresses that it is imperative that Israel complies with international law and United Nations resolutions and stresses the necessity for Israel to be held accountable for its acts in the Occupied Palestinian Territory. ARIJ also calls for Israel's long time apathy regarding the international community's will to end and thus Israel be made to conform with the United Nation's resolutions including: Security Council Resolution 452 (1979) which calls upon "*the Government and people of Israel to cease, on an urgent basis, the establishment, construction and planning of settlements in the Arab territories occupied since 1967, including Jerusalem*" and Security Council Resolution 446 (1979) which "*[d]etermines that the policy and practices of Israel in establishing settlements in the Palestinian and other Arab territories occupied since 1967 have no legal validity and constitute a serious obstruction to achieving a comprehensive, just and lasting peace in the Middle East.*"

PART FIVE:
General Needs Assessment in the Ramallah & Al Bireh Governorate

5.1 Development priorities and needs in Ramallah & Al Bireh Governorate

During ARIJ's field survey of the localities in Ramallah & Al Bireh Governorate, a general needs assessment was conducted. As mentioned in the methodology section, each locality's needs were ascertained through the use of surveys which collected information on a set of relevant indicators provided in a questionnaire sheet and completed by community leaders. The survey showed that 94% of the localities in Ramallah & Al Bireh Governorate are in need of paving and constructing new roads, 72% of the localities stated that they need new schools to cover increasing student numbers, and 67% of the localities are in need of clinics and healthcare centers. In addition, the water networks in Ramallah & Al Bireh Governorate need a great deal of attention, as 78% of the localities stated that they need to extend the water network to cover new built up areas.

As for the agricultural sector, 83% of the localities are in need of agricultural land rehabilitation.

Table 40: Development priorities and needs in the Ramallah & Al Bireh Governorate, 2012/2013

Needs by sector	Strongly needed	Needed	Not a priority
Infrastructural needs (%)			
Rehabilitation and paving of roads	94	6	-
Rehabilitation of old water networks	56	17	28
Extending the water network to cover new built up areas	78	11	11
Constructing new water networks	17	17	67
Rehabilitation/ construction of new wells or springs	28	6	67
Construction of water reservoirs	33	22	44
Construction of a sewage disposal network	89	11	-
Construction of a new electricity network	44	17	39
Providing containers for solid waste collection	67	17	17
Providing vehicles for collecting solid waste	33	17	50
Providing a sanitary landfill site	67	28	6
Health needs (%)			
Construction of new clinics or health care centers	67	11	22
Rehabilitation of old clinics or health care centers	50	-	50
Purchasing of medical equipment and tools	94	-	6
Educational needs (%)			
Construction of new schools	72	6	22
Rehabilitation of old schools	78	6	17
Purchasing of new equipment for schools	89	11	-
Agricultural needs (%)			
Rehabilitation of agricultural lands	83	6	11
Building rainwater harvesting cisterns	78	17	6
Construction of barracks for livestock	56	22	22
Provision of veterinary services	67	17	17
Provision of seeds and hay for animals	67	11	22
Construction of new greenhouses	56	17	28

Agricultural needs (%)			
Rehabilitation of greenhouses	28	22	50
Provision of field crops seeds	67	11	22
Provision of plants and agricultural supplies	67	22	11

5.2 Participatory Rapid Appraisal (PRA)

The Participatory Rapid Appraisal (PRA) is a qualitative research tool used to identify problems and formulate solutions. Its aim is to enable people to access an issue and formulate their own plans to address it.PRA emphasizes the empowerment of local people. It enables them to assume an active role in analyzing their problems and potentials in order to come up with solutions.

The PRA approach was chosen for this study because it provides guidelines for the fast appraisal of a certain situation in the field, the main advantages being:

1) It involves a relatively short time in the field.
2) It focuses on a few specific topics.
3) It involves the community and their institutions.

In light of the above, 72 PRAs were conducted at the locality level, where community leaders, farmers, women's associations and local co-operatives' representatives (agricultural, environmental, societal etc.) were in attendance. Another general workshop took place at the Governorate level, where a number of governmental bodies (including representatives from the Ramallah & Al Bireh Governorate Office, the Ramallah & Al Bireh Education and Higher Education, Agriculture and Health Directorates), and relevant NGOs working in Ramallah & Al Bireh attended. During the workshops, a discussion among the attendees was opened in order to result in a comprehensive vision and analysis for the gaps and needs of the Ramallah & Al Bireh Governorate as a whole entity.

During the PRA workshops, each community presented us with its points of strength, weakness, threats, proposed solutions, and needs priorities in relation to agriculture, water, and environment. Based on these results, the following needs and development projects were proposed at locality level.

The sum of the proposed projects that were concluded from the ARIJ field survey and the conducted PRAs at both locality and Governorate levels is presented in Annex 1.

PART SIX
Proposed Development Projects (Agriculture, Water, Environment) for Ramallah and Al Bireh Governorate

One objective of the "Village Profiles Needs Assessment in the Ramallah and Al-Bireh Governorate" project is to present development programs and activities to assist in developing the livelihood of the population in the 9.

Based on the survey and the Participatory Rapid Appraisal (PRA) workshops conducted in the Ramallah and Al-Bireh Governorate, the following concept papers were developed addressing the major needs for livelihood development in the governorate with main focus on water, environment and agriculture interventions.

6.1 Proposed Project: Constructing/Rehabilitating Agricultural Roads and lands, and rainwater harvesting cisterns in Ramallah and Al-Bireh Governorate:

Project Title	**Agricultural Roads rehabilitation/ construction and land Rehabilitation in Ramallah and Al-Bireh Governorate:**
Project Duration	36 months
Estimated Budget	The project will construct/rehabilitate 112 km of agricultural roads, 4 meters in width, in 36 localities; rehabilitate 6450 dunums in 36 localities in Ramallah and Al-Bireh Governorate. The total budget is estimated at around US $ 5,510,400 for constructing/ rehabilitating 112 km of agricultural roads and US$ 6,450,000 for rehabilitating 6,450 dunums of agricultural lands. The total budget reaches US$ 11,960,400.
Stakeholders	The project stakeholders will be the Ministry of Agriculture (MoA), the Ministry of Local Government (MoLG), Ministry of Labor, UNDP, local and international agricultural associations and Palestinian NGOs.
Targeted Areas	The project will target 36 localities in Ramallah and Al-Bireh Governorate as follows:

No	Locality	Agricultural Roads (km)	Land rehabilitation (dunums)
1	Abu Qash	2	100
2	Al Lubban al Gharbi	3	100
3	Al Mazra'a ash Sharqiya	4	200
4	Al Mughayyir	3	200
5	Al-Zaytouneh	2	250
6	An Nabi Salih	2	150
7	At Tira	4	250
8	Bani Zeid ash Sharqiya	3	200
9	Beit Sira	3	200
10	Beit 'Ur al Fauqa	3	100
11	Beit 'Ur at Tahta	4	200
12	Bir Zeit	4	250
13	Burqa	3	200
14	Deir Abu Mash'al	3	100
15	Deir as Sudan	4	100
16	Deir Dibwan	4	200

Targeted Areas

No	Locality	Agricultural Roads (km)	Land rehabilitation (dunums)
17	Deir Ibzi'	3	17
18	Deir Jarir	4	100
19	Deir Qaddis	6	100
20	Dura al Qar'	2	100
21	Kafr 'Ein	3	200
22	Kafr Malik	4	100
23	Kobar	2	200
24	Ni'lin	3	80
25	Qarawat Bani Zeid	4	200
26	Qibya	4	250
27	Rammun	3	120
28	Ras Karkar	2	200
29	Sinjil	3	200
30	Surda	2	200
31	Turmus'ayya	3	400
32	Umm Safa	3	300
33	other communities	10	800
Total		**112**	**6450**

The targeted localities contained agricultural areas where farmers need support to reach and serve their lands and cultivations in especially in areas affected by the occupation restrictions through rehabilitating additional areas. This will encourage farmers to increase the cultivated and productive areas. Thus the improved agricultural road system will reduce transportation and crop management costs.

Beneficiaries

The project will serve up to ***11,330 dunums*** of the arable areas in 36 communities of Ramallah and Al-Bireh Governorate and transportation costs, improving access for farming vehicles, and facilitating better transport of products to markets. Up to***1,440*** farming families will be benefited from the project.

Project Description

More than 63.2% of the Governorate is classified as area C which is exposed to the occupation restrictions. Thus the farmers need support to stay cultivating their lands and to bring back the available arable lands into production system. This approach will assist in increasing food security, and reducing the potential of land confiscation by the occupation authorities. Furthermore, enhancing farmers access to their lands is an important issue that means more land owners will come back to cultivate and taking care of their lands. This project will assist in increasing the role of the agricultural sector in improving food security, increasing job opportunities, and better livelihood. Furthermore, the project will assist in reducing the production costs and increase farmers' profitability, through improving production capacity.

The project will create an opportunity of 5824 working days for opening/ rehabilitating the targeted agricultural roads; Also, 96,750 working days (paid and in-kind) for land rehabilitation.

This proposed project will complement the ***Agriculture Sector Strategy "Resilience and Development" 2014 – 2016.***

Project Description	***2011-2013; especially under the strategic objectives 1 &2:*** ***First strategic objective: Ensure resilience of farmers and their attachment to their land, while fulfilling the contribution of the agriculture sector in providing requirements for development of the State of Palestine. Under related policy*** 1.1. Intensify efforts to rehabilitate the agriculture sector in "Area C". ***Second strategic objective: Efficient and sustainable management of natural resources.*** This located Under the second related policy 2.1. Sustainable management of land, increase in land area, reclamation of land, and sustainable utilization of agricultural biodiversity.
Project Objectives	• To enhance farmers' access to their lands in the Ramallah and Al-Bireh Governorate, especially in area C, Seam zones. • To increase the total cultivated area in the Ramallah and Al-Bireh Governorate under rainfed. • To provide farmers with suitable road infrastructure to bring the machinery necessary to prepare their lands and manage their crops. • To create job opportunities for both genders and thus decreasing the high unemployment rate in the area. • To assist farmers in getting services at cheaper prices through better road systems and easier access to lands. • To reduce the effects of land degradation through land cultivation. • To assist the farmers transporting their agro-products to their houses / market. • To assist farmers in reducing production costs and increasing their profitability. • To assist local authorities in implementing their master plans for the targeted communities. • To improve the livelihood of the targeted families. • Encouraging the participation of existing agricultural cooperatives.
Project Activities	• Announcing the launch of the project with related Ministries (MoA, MoLG, and local authorities) • Communicate with local authorities in the targeted communities. • Form project community committees (steering committee and technical committee for each locality). • **Road construction/rehabilitation intervention:** a. Discussing the existing road maps and master plans developed and approved by the local authorities. b. Preparing the technical specifications for the road construction/ rehabilitation bid in full cooperation with local authorities. c. Announcing the road bid in the local newspapers. d. Selecting the bid winner(s) through a bidding committee formed from representatives of the project implementing organization, the local authorities, the MoA, and the project community committee. e. Opening, leveling, adding and base-coarse, the roads in targeted communities. The road will have a total length of 51 km and a width of 3-4 meters. f. Road direction signs will be put in place.

Project Activities	g. Ensuring that the contractor (s) adheres to all technical specifications. h. Supervising, monitoring, and evaluating the implementation process. • **Land rehabilitation:** a. Announcing about the activity in public places of targeted communities and receive the applications (land rehabilitation). b. Determining beneficiaries according to the project selection criteria. c. Follow up the implemented activities by the targeted beneficiaries and re-impress them according the achieved progress in the field work. • The project technical committee will approve the accomplishment of the construction works to finalize the project. • Preparing the final reports and disseminating the results. • **Capacity building:** a. Provide the project beneficiaries with required knowhow to improve their agro-activities. b. Assist the targeted communities in managing the established agro-production systems properly.
Expected Results	• 112 km of agricultural roads constructed/rehabilitated in 36 localities in the Ramallah and Al-Bireh Governorate and serving. • 11,330 dunums of agricultural/arable lands become accessible to the farmers. • 6450 dunums of arable lands rehabilitated and cultivated. • 102574 working days created through implanting the project main interventions. • Agricultural production and profitability in the targeted areas increased. • Lands become more protected especially in the sensitive geopolitical areas. • 1440 farming families became more food secured and achieved better livelihood.

6.2 Wastewater treatment and reuse for irrigation in remote and marginalized areas of Ramallah and Al-Bireh Governorate

Project Title	**Establishing Small-Scale Wastewater Treatment system to irrigate the suitable corps and enhance sanitation conditions in remote and marginalized areas of Ramallah and Al-Bireh Governorate**
Project Duration	30 months
Estimated Budget	The total estimated project budget is US ***$1,827,800*** of which 10% of the direct cost will be covered by the selected beneficiaries.
Stakeholders	The project stakeholders will be the Ministry of Agriculture (MoA), Environment Quality Authority (EQA), PWA (Palestinian Water Authority) and local and international Agricultural Associations and the Palestinian NGOs.
Targeted Areas	The project will target 43 localities in Ramallah and Al-Bireh Governorate to implement small scale wastewater treatment units

No.	Locality	No. of SSWWTU
1	Beit ‘Ur al Fauqa	10
2	AL-Zaytouneh	7
3	Beit 'Ur at Tahta_	8
4	Bir Zeit	10
5	Abud	10
6	An Nabi Salih	10
7	Al Mazra’a ash Sharqiya	15
8	Yabrud	10
9	Surda	10
10	Ras Karkar	5
11	Qarawat Bani Zeid	10
12	Ni’lin	15
13	Kobar	12
14	Kafr 'Ein	10
15	Jibiya	5
16	Deir ‘Ibzi’	10
17	Deir Nidham	10
18	Deir as Sudan	15
19	Budrus	15
20	Burham	5
21	Beit Sira	5
22	Beit Nuba	20
23	Beit Liqya	20
24	Bani Zeid ash Sharqiya	10
25	'Atara	10
26	At Tira	10
27	Al Lubban al Gharbi	10
28	Al Janiya	10
29	Abu Qash	5

Targeted Areas

No.	Locality	No. of SSWWTU
30	‘Abwein	15
31	Deir Qaddis	10
32	Ein ‘Arik	10
33	Ein Siniya	10
34	Rammun	15
35	Saffa	15
36	Sinjil	20
37	Turmus’ayya	20
38	Umm Safa	10
39	Al Mughayyir	10
40	Bil’in	10
41	Deir Dibwan	12
42	Deir Jarir	15
43	Kafr Malik	7
Total No. of required SSWWTU		**481**

Beneficiaries

The project will target 481 families, as most of the targeted families are located in areas where the connection to the public wastewater network is unfeasible, causing environmental problems due to the flood of wastewater and/or contaminating the surrounded lands, springs or the water catchment areas (approximately 3,440 individuals will directly benefited).

Project Description

Most of localities in Ramallah are unconnected or partially connected to the public wastewater network. Accordingly, 9 localities out of the existing 73 localities of Ramallah and Al-Bireh Governorate are connected with public wastewater network; only 25% of the governorate population is connected to the wastewater network.

The unconnected houses are causing environmental and health problem to themselves and to the neighboring houses as well as to the environmental problems (mainly to the water and soil). Usually, the majority of cesspits are unsealed meaning that sewage leaks into the soil and contaminating the ground water, avoiding the high costs of emptying cesspits through vacuum tankers.

Also, due to the imposed restrictions by the occupation authorities, such as the construction of the segregation wall or bypass roads and other physical barriers had resulted in reducing the capacity of the Palestinian local authorities to manage the generated wastewater. This problem is usually resulted in the flood of wastewater which created environmental problems and diseases.

Accordingly, this project aims to solve the hardship cases those are affected directly by the wastewater problems. This project will manage to treat up to 481 cubic meters of wastewater daily and 175,565 cubic meters of wastewater on yearly bases.

Project Description	The project will target the most affected areas and households. Also, to protect the polluted springs with domestic wastewater and to improve the environmental and health conditions in areas affected by flooded cesspits. Also, help people to irrigate their backyard to produce more food and greening the area. Accordingly, we can irrigate up to 240.5 dunums (24 hectares) of fruit trees. Furthermore, by planting these lands we can protect them from soil degradation and from confiscation.
Project Objectives	• The project is aiming to achieve the following objectives: • Developing an alternative water resource to be used in agriculture through constructing a small scale wastewater treatment plants • Improving the environmental and health conditions in the areas suffering from wastewater floods and contamination. • Raising awareness of local communities and authorities in wastewater management and reuse (mainly on household level). • Increasing the area of cultivated/irrigated lands especially in areas C, and close to the segregation wall.
Project Activities	1. Launching the project in partnership with main stakeholders CBOs, NGOs, EQA and MoA and Water Authority. 2. Formulating the project community committees (contain representatives form CBOs, NGOs, EQA, PWA and MoA) 3. Announcing for public to apply to benefit from the project. 4. The completed applications will be analyzed and investigated through conducting field visits and determining the beneficiaries according to the project selection criteria (the beneficiaries should affected by the domestic wastewater management system and their environment and their neighbors are also affected). 5. Assist the needs of each one of the selected beneficiaries (size of the family, amount of daily generated wastewater, available land for cultivation, the readiness of household to contribute in the project cost whether cash or in kind. 6. Establishing 481 small-Scale Wastewater Treatment Units on household level with average capacity of 1 cubic meter per day per family. 7. Provide beneficiaries with necessary knowhow, and technical and extension support (capacity building). 8. Supervising the establishment of treatment units, drip irrigation system and the plantation as well as taking care of the provided suitable fruit trees. 9. Monitoring the performance and the functionality of established treatment unit including the BOD and COD levels and the established irrigation system and the planted fruit trees. 10. Preparing the final reports (technical and financial) and disseminating the results.
Expected Results	• 481 households improved their sanitation and environmental and health conditions due to the established SSWWTU. • 481 cubic meters of water are treated on daily bases and irrigating up to 240.5 dunums of fruit trees under controlled sanitation conditions. • 481 families had improved their knowhow, capacities and their awareness in wastewater treatment and reuse in agriculture. • The targeted families managed to save more money through using the treated wastewater to irrigate their lands and stop paying money to evacuate their filled cesspits.

References:

- Abu A'yash, A, etal. 2007. 'Surveillance and Classification of Palestinian Forest Trees.' Prepared for the Arab Organization for Agriculture Development. Ramallah. Palestine.
- Ajlumi, S. 2003. 'The Palestinian Economy and the Second Intifada.' Journal of Palestinian Studies Vol. 32, No. 3.
- Applied Research Institute - Jerusalem (ARIJ). 2004. 'Monitoring Israeli Colonizing Activities; Outposts - the unripe settlements' Available at: http://www.poica.org/editor/case_studies/view.php?recordID=337.
- Applied Research Institute - Jerusalem (ARIJ). 2007. 'The Status of Environment in the West Bank and Gaza Strip.' Ghattas, R & Hazieneh, H. Chapter 10: Flora and Fauna. Bethlehem, West Bank.
- Applied Research Institute - Jerusalem (ARIJ) – GIS Unit. 2008. 'Geo-informatics database.' Geo-information Department, ARIJ, Bethlehem, Palestine.
- Applied Research Institute - Jerusalem (ARIJ). 2010. 'Monthly Reports Database; Ramallah & Al Bireh, Palestine' June, 2010.
- Applied Research Institute - Jerusalem (ARIJ) – GIS Unit. 2011a. 'Geo-informatics Database.' Geo-informatics Department, ARIJ, Bethlehem, Palestine.
- Applied Research Institute - Jerusalem (ARIJ) – GIS Unit. 2011b. 'Land use, landcover analysis, year 2010 with high resolution/0.5metre pixels' Geo-informatics Department, ARIJ, Bethlehem, Palestine.
- Applied Research Institute - Jerusalem (ARIJ) – GIS Unit. 2011c. 'Ramallah & Al Bireh, Palestine; 2008 - 2010.'Geo-Informatics Department; Bethlehem, Palestine.
- Applied Research Institute - Jerusalem (ARIJ) – GIS Unit. 2011d. 'The Geo-informatics Department Israeli Settlements Database'; Bethlehem, Palestine.
- Applied Research Institute - Jerusalem (ARIJ) – GIS Unit. 2011e. 'The Geo-informatics Department Israeli Checkpoints Database'; Bethlehem, Palestine.
- Applied Research Institute - Jerusalem (ARIJ) – UMD. 2011a. 'Israeli Violations in the occupied Palestinian Territory Database', ARIJ 1994-2011; Bethlehem, Palestine.
- Applied Research Institute - Jerusalem (ARIJ) – UMD. 2011b. 'Settlements Database.' Urbanisation and Monitoring Department. Bethlehem, Palestine.
- Applied Research Institute - Jerusalem (ARIJ). 2012. 'Water and Environment Research Department Database.' Bethlehem. Palestine.
- Applied Research Institute - Jerusalem (ARIJ) – WERU. 2012. 'Water and Environment Research Department database; selected indicators.' Bethlehem, Palestine.
- Applied Research Institute - Jerusalem (ARIJ) & Spanish Center for New water Technologies (CENTA), 2010. "A Proposed Environmentally Sound Wastewater Management System for the West Bank."
- B'TSELEM. 2011. Dispossession & Exploitation. Israel's policy in the Jordan Valley & northern Dead Sea.
- Bani Odeh, A. (2012, Jan 24). Data Sharing with ARIJ agricultural staff. (Ayed Abdul-Aziz, Interviewer).
- Bimonthly Publication of the Foundation for Middle East Peace (BPFMEP). 2004. 'Israel's Policy of "Creating Facts" wins over the Bush Administration.' Report on Israeli Settlement in the Occupied Territories (2004): May-June 2004.
  Available at: http://www.fmep.org/reports/archive/vol.-14/no.-3/PDF
- EWASH. 2011. Israel's violations of the International Covenant on Economic, Social and Cultural Rights with regard to the human rights to water and sanitation in the Occupied Palestinian Territory.

- Freedman, D; Myers, A.; Beck, A. 2003. 'Eerdmans Dictionary of the Bible.' Wm. B. Eerdmans Publishing.
- FAO/UNRWA/WFP/PCBS, 2012. Socio-Economic and Food Security Survey 2012. West bank and Gaza Strip, Palestine.
- Group Christian Volunteers (GVC) & Food and Agriculture Organization (FAO). 2011. 'GVC/FAO Database; Water Availability in Area C' retrieved January 2012 from: http://www.gvcfao-database.org/.
- Haaretz News. 2010. 'Ministers back proposal to make Jerusalem a national priority zone.' Published- 24.10.10. Available at: http://www.haaretz.com/news/national/ministers-back-proposal-to-make-jerusalem-a-national-priority-zone-1.320931
- International Committee of the Red Cross (ICRC). 1949. 'Geneva ... Time of War (Fourth Geneva Convention)'. 12 August 1949.
- Joint Council for Service, Planning and Development (JCspd) & for Solid Waste Management in Salfit and Jordan River Rift Valley (JJRRV). 2012. 'JCspd Database.' Salfit city, Palestine.
- Ministry of Health (MoH) &the Palestinian Health Information Center (PHIC). Annual Health Report Palestine 2013. July, 2014.
- Ministry of Higher Education (MOHE). 2014. 'Schools Statistics of 2013/2014.' Ramallah, Palestine.
- Ministry of Tourism & Antiquities (MoTA). 2012. Planning Unit Database for the year 2011. Ramallah. Palestine.
- Ministry of Tourism and Antiquities (MoTA). 2012. 'Personal contact between ARIJ and the MoTA for data-sharing purposes.'
- New York Times. 2011. 'No Chance of Peace.' May 18th 2011. Available at: http://www.nytimes.com/roomfordebate/2010/09/01/negotiating-with-the-israeli-settlers/no-chance-of-peace-with-settlements-around.
- Palestinian Central Bureau of Statistics (PCBS), World Food Programme (WFP) & Food and Agriculture Organization (FAO). 2010. 'Average Food Prices, 2005-2009'. Ramallah, Palestine: 2005 - 2009.
- Palestinian Central Bureau of Statistics (PCBS). 1997. 'Population Census' final results by locality- 1997.' Ramallah, Palestine.
- Palestinian Central Bureau of Statistics (PCBS). 1998. Agricultural Statistics - 1997/98'. Ramallah, Palestine.
- Palestinian Central Bureau of Statistics (PCBS). 2009a. Census Final Results – Summary (Population, Buildings, Housing, Establishments) - Salfit & Al Aghwar Governorate. Ramallah, Palestine.
- Palestinian Central Bureau of Statistics (PCBS). 2009b. 'Palestine in Figures 2008.' Ramallah, Palestine.
- Palestinian Central Bureau of Statistics (PCBS). 2009c. 'Palestinian Family Health Survey, 2008: Final Report.' Ramallah, Palestine.
- Palestinian Central Bureau of Statistics (PCBS). 2009d. 'Agricultural Statistics; various data' Ramallah, Palestine: December, 2009.
- Palestinian Central Bureau of Statistics (PCBS). 2009e. 'Population, Housing and Establishment Census 2007, Final Results - Housing Report – Salfit Governorate.' Ramallah, Palestine.
- Palestinian Central Bureau of Statistics (PCBS). 2009f. 'Population, Housing and Establishment Census 2007. Main Indicators by Locality Type.' Ramallah, Palestine.
- Palestinian Central Bureau of Statistics (PCBS). 2009g. Agricultural Statistics- 2007/8' Dec. 2009; Ramallah, Palestine.
- Palestinian Central Bureau of Statistics (PCBS). 2011a. 'Palestinians at the end of the year.'

Ramallah, Palestine.
- Palestinian Central Bureau of Statistics (PCBS). 2011b. 'Agricultural Census-2010.' Ramallah, Palestine.
- Palestinian Central Bureau of Statistics (PCBS). 2014a. 'Labor Force Survey, Annual Report of 2013 .Ramallah, Palestine.
- Palestinian Central Bureau of Statistics (PCBS). 2014b. 'Labor Force Survey: (January-March, 2014) Round (Q1/2014)). Press Conference on the Labor Survey Results'. Ramallah, Palestine.
- Palestinian Hydrology Group (PHG). 2011. 'Water Master Plan for Salfit.'
- Palestinian National Authority (PNA). 2010. 'National Strategy for Solid Waste Management in the Palestinian territory (2010-2014).' Ramallah, Palestine.
- Palestinian Water Authority (PWA). 2007a. 'Water Quality in West Bank Report.' Ramallah, Palestine.
- Palestinian Water Authority (PWA). 2007b. 'Water Supply in the West Bank.' Ramallah, Palestine.
- Palestinian Water Authority (PWA). 2009a. 'The Palestinian Water and Wastewater sector, Basic needs and Development - Ongoing and proposed projects by Governorates.' Ramallah, Palestine.
- Palestinian Water Authority (PWA). 2009b. 'Water Supply and Consumption for the West Bank 2007.' Ramallah, Palestine.
- Palestinian Water Authority (PWA). 2011. 'Water Information System.' Ramallah – Palestine.
- UNRWA/UNICEF. 2010. Food Security and Nutrition Survey of Herding Communities In Area C Joint UNRWA – UNICEF –WFP Household Survey.
- WFP/ FAO/ PCBS. 2009. Socio-Economic and Food Security Report West Bank. 2009.
- WFP/ FAO/ PCBS. 2011. oPt 2010 Socio-Economic and Food Security Survey: West Bank and Gaza Strip, occupied Palestinian territory.
- WFP/ARIJ. 2010. Socio-Economic and Food Security Atlas: in the occupied Palestinian territory. February, 2010 Bethlehem. Palestine.
- Applied Research Institute – Jerusalem (ARIJ). Water and Environment Research Department (WERD) database 2013.
- Applied Research Institute – Jerusalem (ARIJ). (2012). The Water Regime of the Israeli Occupation in the West Bank, by Matthew Richard and Jad Isaac, 2012.
- Applied Research Institute – Jerusalem (ARIJ). (2010). The Applied Research Institute - Jerusalem (ARIJ) refutes the report of the Israeli occupation authorities, which accuses the Palestinians polluting the environment and water sources, 2010.
- Ramallah Municipality. (2012). Data Related to the Existing Sewage System.
- Applied Research Institute - Jerusalem (ARIJ) & Spanish Center for New water Technologies (CENTA), 2010. "A Proposed Environmentally Sound Wastewater Management System for the West Bank."
- The Joint Service Council for Solid Waste Management of Salfit Governorate, 2012.
- Palestinian Water Authority (PWA). (2012). Annual Water Status Report 2011. Ramallah-Palestine
- United Nations- Office for the Coordination of Humanitarian Affairs – occupied Palestinian territory (OCHA- oPt). (2012). The Humanitarian Impact of The Taken Over Of Palestinian Water Springs Bu Israeli Settlers, March 2012.