

# Socio-Economic and Food Security Atlas

## In the occupied Palestinian territory

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**World Food Programme**  
Al- Noman Street  
Beit Hanina, East Jerusalem  
Tel: + 972-2-5401340 / 1 / 2  
Fax: + 972-2-5401227  
[www.wfp.org](http://www.wfp.org)



**Applied Research Institute-Jerusalem**  
P.O. Box 860, Caritas Street  
Bethlehem, Palestine  
Tel: +972-2-2741889  
Fax: +972-2-2776966  
[www.arj.org](http://www.arj.org)

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## FOREWORD

The United Nations World Food Programme (WFP) and the Applied Research Institute – Jerusalem (ARIJ) are pleased to present the “Socio-Economic and Food Security Atlas in the occupied Palestinian territory”.

The Socio-Economic and Food Security Atlas is one of the first Atlas produced which relates to food security issues at the national level in the occupied Palestinian territory (oPt) and in the Arab world. This new tool will be part of the already existing Food Security Monitoring System that is implemented by the WFP, Food and Agricultural Organization of the United Nations (FAO) and the Palestinian Central Bureau of Statistics (PCBS) as to combat poverty and improve the food security status in the oPt.

The Atlas captures the food security information generated by oPt Food Security Stakeholders as well as PCBS. The aim is to build a common tool – that is user friendly via the launch of a specific website – and to help foster the respective food security interventions and to address the main identified food security problems in the oPt.

The Atlas will help develop, along with the FAO/WFP/PCBS Socio-Economic and Food Security Survey (SEFSec) Reports and its related working papers, an institutionalized Food Security Platform in the oPt. The aim would be to link the Atlas – as a shared dynamic database among food security stakeholders – to such a multi-stakeholder platform responsible for the implementation of the socio-economic and food security component of a social protection policy and strategy. It could then serve as pilot project to be adopted by the neighboring Arab countries within their specific food security context.

In its present static form, the 2010 Atlas provides a grim picture of the socio-economic and food security situation in the oPt. Indeed, much more than the geographical and agro-ecological characteristics of the oPt, it is the specificities of the historical and political context that set the parameters of the current economic, social and food security situation of the population. The conflict and more precisely the restrictions on mobility of persons and goods imposed by Israel are the main basic causes of food insecurity in the West Bank and in the Gaza Strip. They have direct impact on the three pillars of food security: (i) food availability; (ii) economic access to food; and (iii) food utilization.

For the 2010 Atlas, we would like to express our sincere thanks to the Palestinian National Authority, especially to PCBS, and all Food Security Stakeholders who participated in the Project Advisory Committee, as well as WFP and ARIJ donors for their continuous support in strengthening food security analysis in the oPt. We look forward to make the Atlas a dynamic tool based on food security related data and analysis done in the oPt .



Christine van Nieuwenhuysse  
WFP – Representative and Country Director



Dr. Jad Isaac  
ARIJ - Director General

## PREFACE

The Socio Economic and Food Security Atlas in the occupied Palestinian territory (SE-FSA) is a joint project of the World Food Programme (WFP) and the Applied Research Institute-Jerusalem (ARIJ) to help develop an institutionalized Food Security Platform in the oPt in cooperation with all potential stakeholders. The SE-FSA provides systematic spatial analysis of the demography, socio-economic, education, agriculture, environmental and water, food security, nutrition, and health sectors in the oPt (West Bank and Gaza Strip) at governorate level.

The acute need for such a SE-FSA tool is based on the current challenges that the Palestinians face including high food prices, economic downturn, political conflict, agricultural production capacity, food production patterns and availability, climatic change and environmental crisis, nutritional and health status, poverty and food insecurity. Accordingly, the SE-FSA aims to provide information on the geographical distribution of food security related data for the West Bank and the Gaza Strip; to consolidate and streamline the available spatial information with a view to improve provision of humanitarian assistance and the application of national social safety net activities. It also aims to improve access and visibility of secondary geographical data and in macro level data sets, highlighting food security data sets including food production patterns and availability, access to food and income sources, regional food market price patterns, household income and expenditure. Finally it provides information at country level for donors and policymakers; and to create a user friendly tool related to food security information that can be updated on regular basis. The SE-FSA shows the multifaceted problem of food security which must be addressed holistically.

The project had technical support from the Project Advisory Committee (PAC), which was formulated during the implementation of the project. It is worth mentioning that three workshops were conducted during the creation of the Atlas including a Stakeholders Meeting, which was organized on October 2008 for 30 food security related institutions. During this meeting the project goal and objectives, activities and outputs were presented, the list of sectors' indicators that were considered to be the base for maps production was discussed and the Project Advisory Committee (PAC) was formulated. Another workshop (PAC Meeting) was conducted on February 2009 for the formulated PAC members (almost 25 institutes) to discuss their inputs on a list of indicators. A final workshop was conducted under the auspices of his Excellency Prime Minister Dr. Salam Fayyad for launching the Atlas.

The result of this work is a hard copy of the Socio Economic Food Security Atlas including maps and text analysis covering several food security indicators highlighting information over a trend of years. The Atlas is divided into six chapters, including 81 maps illustrating food security indicators at governorate level, cluster, and village levels whenever available. The SE-FSA database has also been produced as a web based data-entry, which can be accessed on-line in order to make it accessible to oPt food security stakeholders, decision makers, the public and all who can benefit from it. In order to make the Atlas dynamic, data will be updated every 6 months.

## THE ATLAS TEAM

### The Applied Research Institute-Jerusalem (ARIJ)

Jad Isaac  
Roubina Ghattas  
Nader Hrimat  
Saheer Khoury  
Issa Zboun  
Fuad Isaac  
Jeries Shomali  
Fadi Isaac  
Bisher Qassis  
Jane Hilal  
Suhail Khalilieh  
Hiyam Hizaynieh  
Lina Ibrahim  
Ghadir Hilal

### World Food Programme

Christine van Nieuwenhuysse  
Salah Allahham  
Antoine Renard  
Caterina Galluzzi  
Tahir Nour  
Jacques Higgins

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## List of Abbreviations

- ARIJ:** Applied Research Institute – Jerusalem  
**CPI:** Consumer Price Index  
**FAO:** Food and Agriculture Organization of the United Nation  
**FCPI:** Food Consumer Price Index  
**ILO:** International Labor Organization Standards  
**IMR:** Infant Mortality Rate  
**Kg:** Kilogram  
**L/c/d:** Liter/capita/day  
**MCM:** Million cubic meters  
**MoA:** Ministry of Agriculture  
**MoH:** Ministry of Health.  
**MSP:** Medical Services of Police and National Security  
**NGO:** Non Governmental Organization.  
**NIS:** New Israeli Shekel  
**Nm:** Nautical mile  
**OCHA:** Offices for Coordination of Humanitarian Affairs  
**oPt:** occupied Palestinian territory  
**PCBS:** Palestinian Central Bureau of Statistics  
**SEFSec:** Socio-Economic and Food Security Survey Report  
**SE-FSA:** Socio-Economic and Food Security Atlas  
**UNICEF:** United Nation Children's Fund  
**UNRWA:** United Nation Relief and Work Agency for Palestine Refugee  
**WFP:** World Food Programme  
**WHO:** World Health Organization

# Introduction

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The occupied Palestinian territory (oPt) is divided between two physically separated areas known as the "West Bank" (including East Jerusalem) and the "Gaza Strip" with a total area of 5,661 km<sup>2</sup> and 362 km<sup>2</sup>, respectively<sup>1</sup>.

The average population density is approximately 414 capita/km<sup>2</sup> in the West Bank, while the population density<sup>2</sup> in the Gaza Strip is 3,905 capita/km<sup>2</sup>. The West Bank has a total population of 2.38 million inhabitants irregularly distributed across its eleven governorates (Jericho, Ramallah, Bethlehem, Hebron, Jerusalem, Nablus, Qalqiliya, Tulkarm, Jenin, Tubas and Salfit). The Gaza Strip is a coastal territory at the eastern extreme of the Mediterranean Sea on the edge of the Sinai Desert. Hosting a population of 1.42 million, it is composed of five governorates (North Gaza, Gaza City, Deir al Balah, Khan Yunis and Rafah).

Of the 6 million dunum<sup>3</sup> land area in the oPt, about 1.82 million dunums (30.6%) are cultivated; 1.6 million dunums are rain-fed and about 270 thousand dunums irrigated (see chapter three). Of the cultivated area in the oPt, 91.4% is in the West Bank and 8.4% in the Gaza Strip<sup>4</sup>. Forested area covers less than 1.5 % of the Palestinian land area.

The oPt is characterized by a great variation in topography, soil, and lithology. This variation is directly reflected on the climate and the distribution and diversification of agricultural patterns, from irrigated agriculture in the Jordan Valley (the lowest area in the world) to rain-fed farming in the mountains. The West Bank is divided into four major geo-morphological parts: Central Highlands, Semi-coastal region, Eastern Slopes region and the Jordan Valley. The mountainous area of the West Bank serves as the main rainfall collection and replenishment zone for the underground water aquifers. Many drainage and valley systems are spread in and around the above mentioned four parts. In the north of the Gaza Strip there are four ridges with different elevations ranging between 20 to 90 m above Sea Level<sup>5</sup>. Active dunes can be found near the coast especially in the southern part between Deir el Balah and Rafah. Soils in the oPt are formed due to several conditions including climate, physical weathering from wind and water, and other topographic materials, geology, and vegetation.

The east Mediterranean region in general and the oPt in particular has been subjected to various disasters. Wars, political conflicts, climatic change, drought and earthquakes are the primary disasters that have affected the area. While the oPt is small in terms of area and population and does not contain resources of crucial importance to the world's economy, the Israeli-Palestinian conflict brings about immense international interest in the media, politics and diplomacy; in part related to their proximity to oil reserves in other countries of the Middle East<sup>6</sup>. Indeed, much more than the geographical and agro-ecological characteristics of the oPt, it is the specificities of the historical and political context that set the parameters of the current economic, social and food security situation of the population.

The conflict and more precisely the restrictions on mobility of persons and goods imposed by Israel are the main basic causes of food insecurity in the oPt. They have consequences on: (i) food availability; (ii) economic access to food; and (iii) food utilization.

To understand the status and causes behind Palestinian food insecurity, key features need to be addressed with a focus on economic access and political situation in the West Bank and the Gaza Strip including: livelihood crisis, population growth rates and dependency ratio, unemployment and poverty, food prices and consumer price index, cash income decline and consumers' purchasing power, food expenditures, production capacity, education and malnutrition, environmental and food quality, market access and others.

**Economic growth in the oPt has markedly decreased** due to the conflict, mainly through controls imposed by Israel on the entry and exit of goods, services and people; impediments to construction and infrastructure investment in the oPt; the expansion of Israeli settlements and associated violence; and the direct destruction of houses, crops, animals, water and sanitation infrastructure by the Israeli Army<sup>7</sup>. The Gaza Strip is currently undergoing a de-development due to Israeli military interventions and the blockade of the Gaza Strip. Since the blockade is in place, livelihoods of the Gaza population is devastated due to restrictions on the import of industrial, agricultural and construction materials, the suspension of nearly all exports, a reduction in the amounts of industrial fuel, domestic fuel and cooking gas allowed entry. Loss of business and jobs means greater pressure on the working age people to cope with their dependents and on the society. The unemployment among Palestinians reached up to 25.8% in oPt (Gaza Strip alone reached 42.3%) in the third quarter of the year 2009<sup>8</sup>. According to the World Bank, the GDP per capita was just above US\$1,000 in 2008, compared to US\$1,610 in 1999 (see Chapter 1).

<sup>1</sup> Applied Research Institute-Jerusalem (ARJI), Geo-informatics Department. Land Use/ Land cover Database.

<sup>2</sup> Palestinian Central Bureau of Statistics (PCBS): Population, Housing, and Establishment Census. 2008

<sup>3</sup> 1 dunum = 1,000 m<sup>2</sup> or 0.1 ha.

<sup>4</sup> Palestinian Central Bureau of Statistics (PCBS): Agricultural Statistics. 2008

<sup>5</sup> The ridges are: Coastal ridge, Gaza ridge, the el-Muntar ridge and the Beit Hanoun ridge.

<sup>6</sup> Hever, Shir - Political Economy of Aid to Palestinians Under Occupation. The Economy of Occupation, Socio-economic Bulletin No.17-18. The Alternative Information Center (AIC). November 2008.

<sup>7</sup> WFP/FAO. Food Security and Vulnerability Analysis Report in the oPt. December 2009.

<sup>8</sup> Palestinian Central Bureau of Statistics (PCBS): Press Release -third quarter, December 2009. Labor Force - Third quarter (July-September) Report 2009. Ramallah - Palestin-

**Population growth is also a major threat to oPt's capacity for sustainable development** whereby it is placing additional pressures on the environment. With a rapid demographic growth at approximately 3% annual growth<sup>9</sup>, the Palestinian population is projected to double in approximately 20 years<sup>10</sup>. Increasing population contributes to oPt's chronic lack of space due to Israeli land restrictions (see Chapter 1). Already, urban densities are reaching critical levels in many areas, particularly Gaza, exacerbating social, economical and environmental degradation and subsequent humanitarian concerns regarding the scarcity and provision of basic services.

**The reliance on food imports and the lack of domestic agricultural growth expose the Palestinians to the volatility of international markets, as well as the restrictions imposed by Israel.** Only 60% of main food items<sup>11</sup> are produced locally, where less than 5% of the cereals and pulses consumed in the oPt are locally produced. Lack of access over land and natural resources have denied the Palestinian people their rights to regulate land use and to manage the utilization of their own resources. In the West Bank, in the second half of 2008, up to 10,000 farmers reported difficulties in accessing their agricultural land and almost 60% attributed these problems to movement restrictions<sup>12</sup>. Some of the most productive areas are under Israel control (such as Area C) and thus not accessible for cultivation due to Israeli Army military laws. In the Gaza Strip, agriculture is distressed due to the export ban and unavailability and high cost of inputs and equipment. In addition, the Agricultural Sector is also particularly affected by recent climatic shocks including low rainfall precipitation, irregular distribution pattern of rainwater and rainfall delay, hence causing failure of crop growth (see Chapter 2 and 4).

**Palestinians are increasingly being forced to rely on negative coping mechanisms.** The combination of decreased incomes and increased food prices has forced the poorer households to change their food consumption patterns. The Socio Economic and Food Security Survey Report (SEFSec) highlighted that 42% of the household surveyed in the West Bank reduced their food expenditures, forcing these families to buy less food items and to substitute normal foods with cheaper / less desirable items. In the Gaza Strip, for those who have decreased their total expenditure, in its vast majority it has been food expenditure (96%) thus impacting the quantity and quality of their daily food intake<sup>13</sup>. Palestinian population faces great challenges to overcome the poverty and food insecurity levels they are trapped in. Even if the coping mechanisms are reversible (e.g. switching to less preferred but cheaper food, decreasing the amount of food consumed, foregoing 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 (See Chapter 3).

**Significant factors cause land degradation in the oPt; including soil erosion, desertification, salinization and soil contamination.** Soil erosion is predominant in regions of intensive field cultivation and in the mountainous regions of the West Bank where in addition to steep slopes, soils are subjected to heavy rainfall and overgrazing by goats and sheep. Decreasing bio-diversity is another major issue facing oPt stemming from the widespread environmental degradation that has occurred over the last decades. Regarding water resources, current extraction from groundwater is exceeding recharge and ground water levels are decreasing rapidly. Similar conditions exist for the Jordan River where upstream extraction has dramatically reduced flow. Limited access to water in the oPt due to Israeli control has profound social and economic impacts and accordingly affects Palestinian food security (see Chapter 4).

**Exposure to natural disasters such as drought and frost is also threatening the future capacity for development in the oPt.** Evidence suggests that climate change will lead to greater extremes in weather patterns. Given that approximately 94% of cultivated land is rain fed in the oPt, climate changes are also likely to have significant impact on Palestinian agriculture (see Chapter 4).

**The fragmentation of the Palestinian landscape has had a significant environmental and social impact.** Overall, 38% of total land area in the West Bank is controlled by the Government of Israel for settlements, military use, checkpoints or road closures, and the West Bank Barrier<sup>14</sup>. The intrusive route of the West Bank Barrier through 8 of the 11 West Bank governorates isolates the farms, greenhouses, grazing lands and water resources of thousands of farmers. Almost 15% of West Bank agricultural land will be lost once the construction of the Barrier is completed<sup>15</sup>. In the Gaza Strip, the Buffer Zone (24% of Gaza Strip (87 km square)) and the Cast Lead Operation (December 08/January 09) have led to the destruction of natural areas as well as Palestinian assets (see Chapter 5).

<sup>9</sup> Palestinian Central Bureau of Statistics (PCBS), 2008. Population Census, 2007. Ramallah, Palestine

<sup>10</sup> Palestinian Central Bureau of Statistics (PCBS), 2008. Population and Housing Census, 2007. Ramallah, Palestine

<sup>11</sup> The main food commodities are 25 selected food items including: Short grain profilled rice, Haifa white flour, White bread, Fresh goat meat with bones, Fresh beef meat, Fresh chicken without feathers, Fresh red snapper, Frozen fish, Pasteurized milk 3% fat, Powdered milk, Powdered milk kiko (No.1), Yogurt, Labaneh, Chicken eggs, Olive oil, Big size orange, Medium size banana, Red apple, Green house tomato, Local dry onion, Cauliflower, Greenhouse cucumber, Medium size potato, Lentils, Chick beans, Fine white sugar, Tea, White table salt.

<sup>12</sup> FAO/WFP. Socio-Economic and Food Security Survey Report - West Bank. August 2009

<sup>13</sup> FAO/WFP. Socio-Economic and Food Survey Report. West Bank/August 2009 – Gaza Strip/November 2009.

<sup>14</sup> - The World Bank. The Economic Effects of Restricted Access to Land in the West Bank. Social and Economic Development Group, Finance and Private Sector Development, Middle East and North Africa Region. 2008.

- According to the Applied Research Institute – Jerusalem (ARIJ) some 61% (3456 km<sup>2</sup>) of the West Bank territory falls under complete control of the Israeli Army, and is defined as area "C". It also includes the western Segregation zone (733 km<sup>2</sup>-13% of the West Bank total area)

<sup>15</sup> OCHA. Five Years After the International Court of Justice Advisory Opinion. A Summary of the Humanitarian Impact of the Barrier. July 2009.

**As a result of the current context in the oPt, 38% of the Palestinian households are found food insecure, reaching up to 1.6 million<sup>16</sup>.** These include 625,200 food insecure persons in the West Bank (25%) and 973,600 in the Gaza Strip (61%). In addition, 269,300 persons in the West Bank (11%) and 218,950 persons in the Gaza Strip (16%) are vulnerable to food insecurity. Food Insecure people are highly sensitive to socio-economic, political, and global shocks and highly relying on assistance (see Chapter 6).

Food insecure households are unable to secure sufficient income to meet their essential food and non-food requirements due to the lack of income-earning possibilities as a result of Israel's restrictions to movement of goods and people, and artificially inflated food and transport costs. The high food and fuel prices internationally and the last war with Israel in the Gaza Strip have compounded this situation<sup>17</sup>.

The conflict, the long imposed Israeli restrictions and matrix of control on Palestinian way of life utterly represent the basic causes of food insecurity in the oPt. Suspensions of the various restrictions are the only ways to resume the peace talks with Israel and address related issues. Meanwhile, increased emphasis should be given to interventions that take into account both protection issues and livelihood support, with the view not only to prevent food insecurity to worsen but also to avoid that vulnerable households become food insecure<sup>18</sup>. It is hoped that the Socio Economic and Food Security Atlas will help decision makers to take adequate policy responses.

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<sup>16, 17, 18</sup> *FAO/WFP. Food Security and Vulnerability Analysis Report in the oPt. December 2009.*

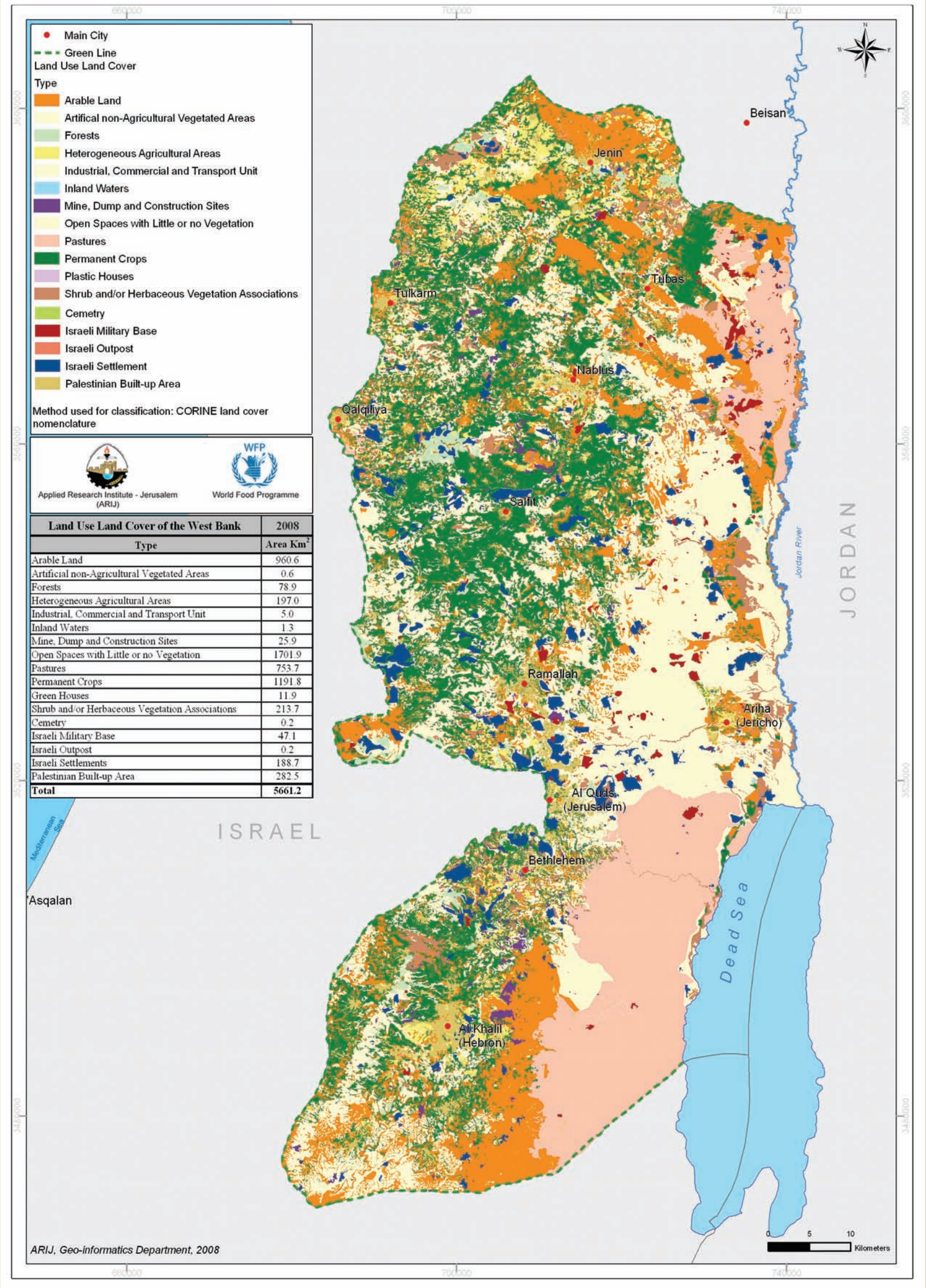


occupied Palestinian territory within the Current Regional Context



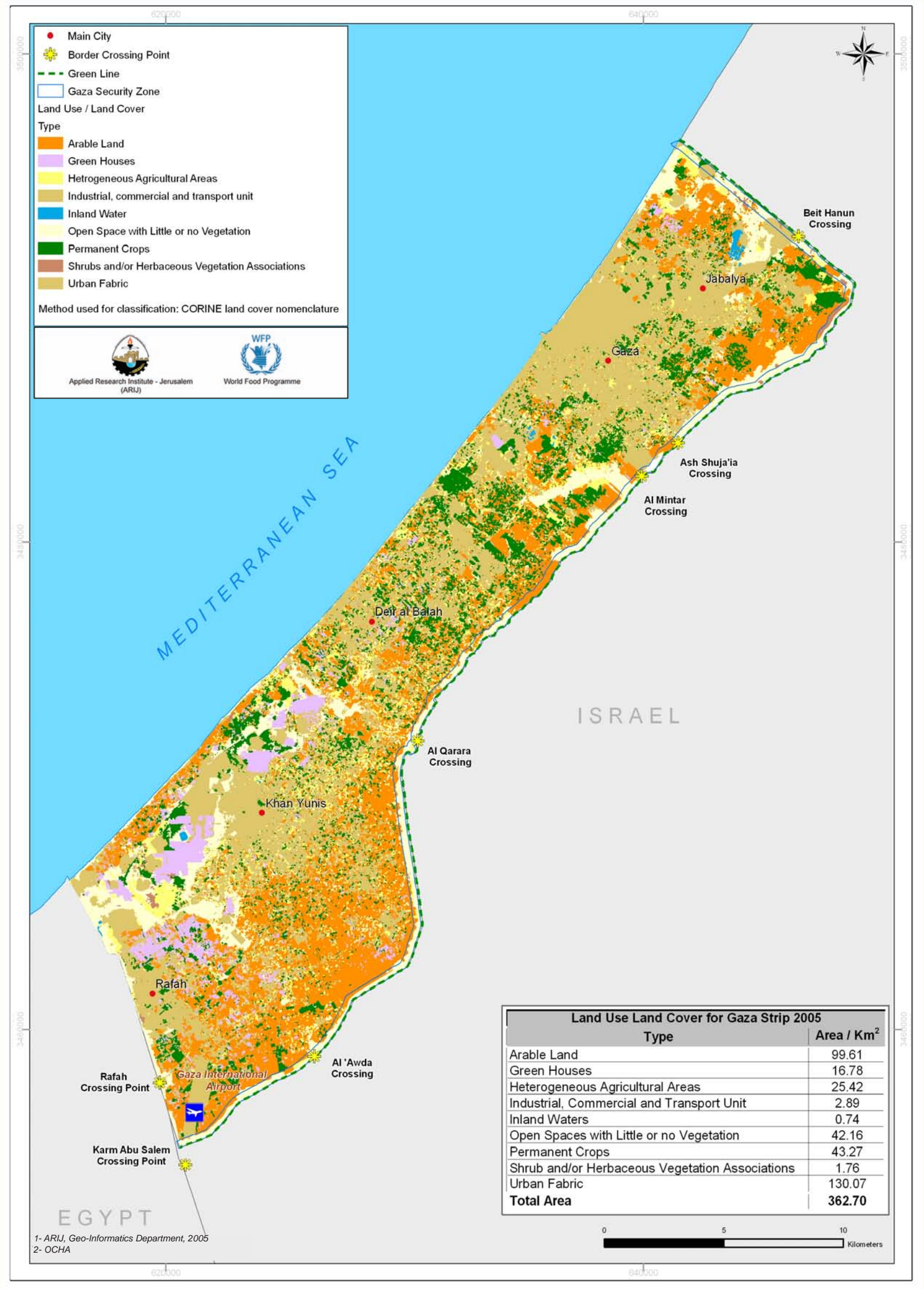


Land Use / Land Cover of the West Bank, 2008



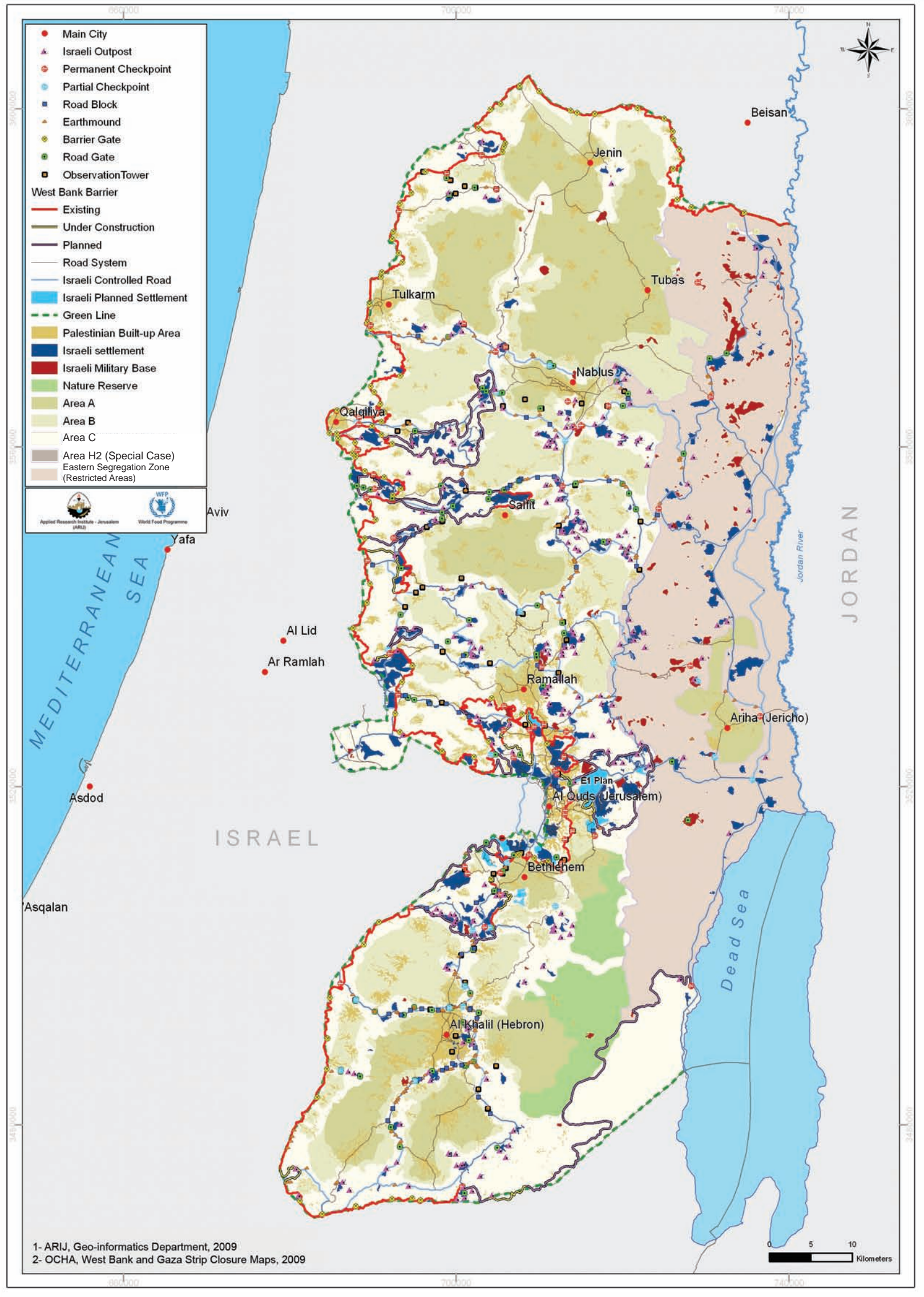


Land Use / Land Cover of the Gaza Strip, 2005





Geopolitical Map of the West Bank, 2009

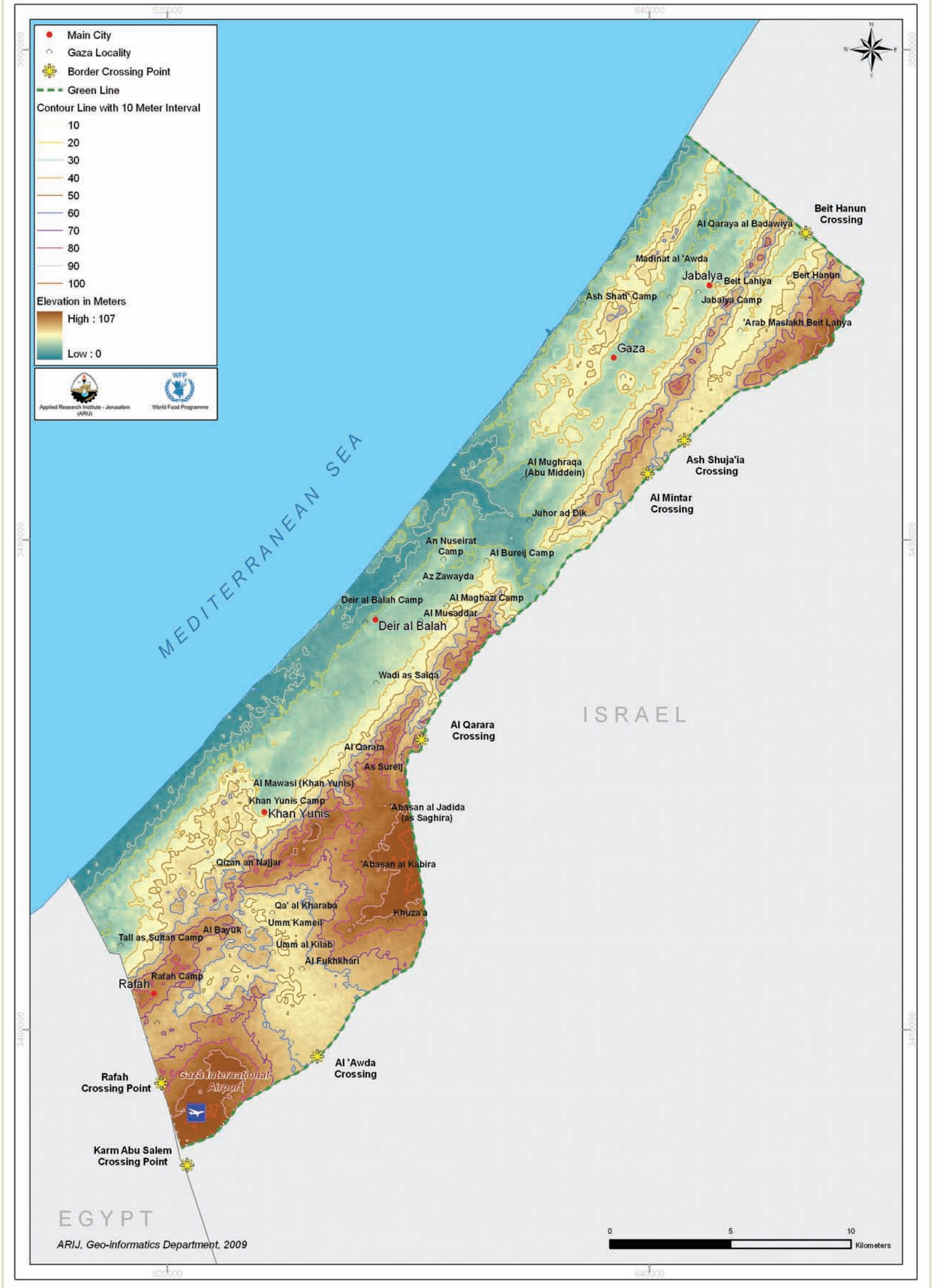












Soil Map of the occupied Palestinian territory, 2009





Geological Map of the occupied Palestinian territory, 2009



