

Opportunities and Challenges of Palestinian Development actions in Area C



2016

PREPARED BY

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Applied Research Institute – Jerusalem (ARIJ)

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Abstract

In recent years, Area C has emerged as a key priority for both the Palestinian National Authority (PNA) and for the international actors in the development sectors. The Palestinian development of Area C is critical to empower existing Palestinian communities to preserve their assets, way of life, and most importantly their continued presence on the land. Furthermore, Area C connects the patchwork of the isolated and densely populated urban and rural communities located in Areas A and B. A contiguous and socioeconomically viable Palestinian State can thus only be achieved by opening Area C for Palestinian development and for the critical realization of a contiguous Palestinian State. To advocate for Palestinian control in Area C and to stress the priority actions and development plans in Area C, this report: (1) Analyses Palestinian and Israeli Settlers population distributions in Area C; (2) analyses the status or urban planning of the Palestinian communities in Area C; (3) assesses the economic potential of developing the natural resources in Area C; (4) assess socio-economic conditions in Area C; (5) identify challenges the communities face in Area C; (6) identify most vulnerable communities; and (7) recommend development actions that respond to communities' needs. It was found that the Palestinian population densities in Area C built up area or within the proposed outline (master) plans exceeds the equivalent average population densities in Areas A and B. Furthermore, the Palestinian population density within the Palestinian Ministry of Local Government (MoLG) proposed master plans in Area C is almost 600% higher than the population density of Israeli's in the settlements master plan. Only 3 communities out of 291 communities in Area C have approved master plans. Any development outside the area of the approved master plans (with a total area of 5.7 ha) is at risk of demolition by the Israelis (unless the Israeli authorities grant special permits for development). In 2015 alone, Israel demolished 482 homes and structures in area C, uprooted some 13,000 trees, and attached Palestinians and their properties on 898 separate occasions. The geographic distribution of these attacks, demolitions, and tree uprooting suggest an Israeli purpose behind these actions that is perhaps imposing pressures on the Palestinian population to drive outmigration from certain areas (esp. corridors connecting Israeli settlement blocks within Area C). Due to restrictions on development, the limited space to develop urban structures and services and inaccessibility of arable land, the Palestinian communities in Area C have high unemployment and food insecurity rates. This report prioritizes development actions and emergency assistance necessary to support and empower the Bedouin populations in Area C, the rural communities in the Jordan valley region, and the suburban communities in East Jerusalem.

1. Introduction

The West Bank, under the Oslo Accords, was divided into 3 zones: Area A, B, and C. Area A, which is made up of the Palestinian city centres (excluding Hebron) is under Palestinian civil and security control. Area B, which is made up of the Palestinian built-up areas outside Area A, is under Palestinian civil control and joint Israeli and Palestinian security control, though Israel has exclusive right to enter Areas B to conduct “security operations” as it wished. Area C, which makes up 61% of the West Bank, is under Israeli civil and security control. These area assignments were meant to be temporary, with land being phased into total Palestinian control by the end of the five-year interim period as designated by the Oslo Accords, which was set to end with final status negotiations in 1999.

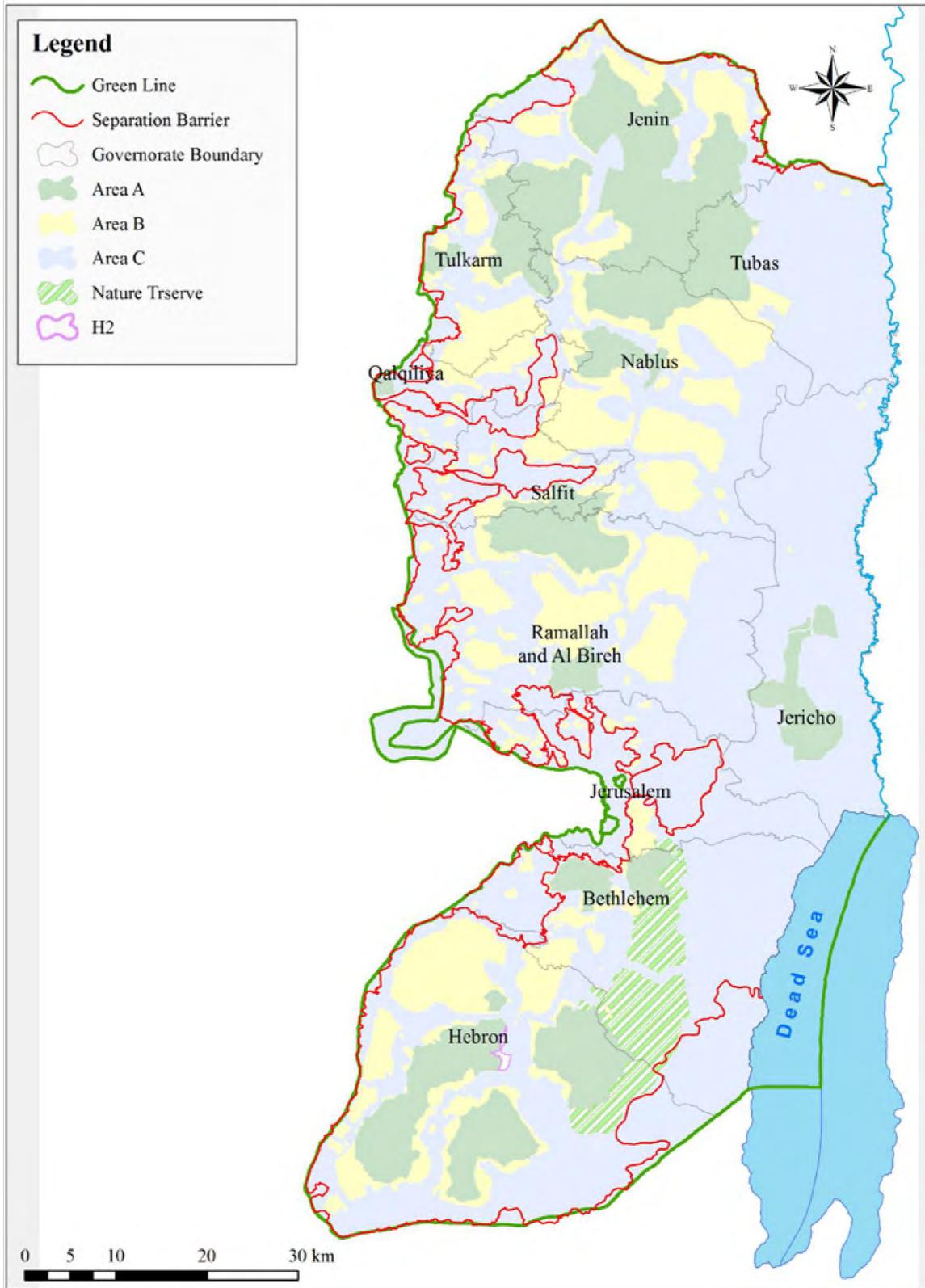
Area C is a region of the West Bank that is rich in its natural resources. Area C constitutes more than 61% of the West Bank’s landmass. It also contains about 60% of agricultural lands in the West Bank and includes permanent crops, arable lands, heterogeneous agricultural lands and plastic houses. Some 300,000 Palestinians currently live in Area C. The majority of Palestinians in the West Bank (some 2.3 million) currently live in Areas A and B; both of which constitute 39% West Bank’s landmass. Hence, Area C has the potential for significant urban expansion to accommodate Palestinian population growth and economic development needs. Furthermore, this area has many touristic and archaeological sites, water resources from water wells and springs, Dead Sea minerals and salts, and Stone (including marble) deposits.

In spite of its acknowledged importance for sustainable development in Palestine and for the establishment of a sustainable Palestinian State, the Palestinian Authority has no security or administrative control over this area. Rather, Area C is under the Israeli military control. As of 2015; Israeli military zones occupied 29% of Area C, and Israeli settlements occupied 6% of area C and these continue to spawn and expand. An additional 3 percent of land was designated as nature reserves areas to be transferred to the control of the PA. However, this transfer of control never materialized. Palestinian communities living in Area C therefore find themselves marginalized, often without access to basic services, without adequate schools or clinics, and sometimes even without water or electrical networks.

Palestinian development in Area C requires approval by the Israeli Civil Administration (ICA). Area C includes the Jordan Valley region. The Jordan Valley is one of the most important agricultural areas in Palestine. Its year-long warm climate and fertile land is crucial for the production of food for Palestine's growing population and for turning a profit on agricultural products. Its extensive open spaces makes it attractive for development in terms of energy, infrastructure and industry. Furthermore, Israeli and Palestinian economists' alike stress that the Jordan Valley needs to be opened to the Palestinian population immediately enabling realization of its potential for economic development in this region, which is crucial for the sustainable development of the Palestinian economy in order to ensure the viability and sustainability of the future Palestinian state.

In recent years, Area C has emerged as a key priority for both the Palestinian National Authority (PNA) and for the international actors in the development sectors. The Palestinian development of Area C is critical to empower existing Palestinian communities to preserve their assets, way of life, and most importantly their continued presence on the land. Furthermore, Area C connects the patchwork of the isolated and densely populated urban and rural communities located in Areas A and B (map 1). A contiguous and socioeconomically viable Palestinian State can thus only be achieved by opening Area C for Palestinian development and for the critical realization of a contiguous Palestinian State.

The objectives of this report were to : 1) assess socio-economic conditions in Area C; 2) identify challenges the communities face in Area C; 3) identify most vulnerable communities; and 4) recommend development actions that respond to communities' needs.



Map 1. Geopolitical map of the West Bank including Areas A, B, and C according to *Sharm Esh Sheikh* Memorandum (Phase Three) signed March 2000.

1.2 Population Densities in the West bank

The total area of the West Bank excluding East Jerusalem is (5,579 km²). There are 2,618,191 Palestinians living in 734 communities in the West Bank (excluding East Jerusalem) compared to 486,000 settlers illegally living in 181 Israeli settlements. There is a stark contrast between the Israeli Settlers and the Palestinians in their access to living space and natural resources. The Net Palestinian Population Density in the West Bank (NPPD; population/built-up area) is approximately three folds (or 300% higher) that of the Net Israeli Settler Population Density (NISPD). When comparing the Palestinian population density to the Israeli Settler population density in Area C; the NPPD in area C is 250% higher than the NISPD (figure 1). This contrast in access to land area and natural resources between Israeli Settlers and Palestinians in Area C is just one of the many injustices Palestinians suffer from the Israeli military and ICA restriction on Palestinian development in Area C.

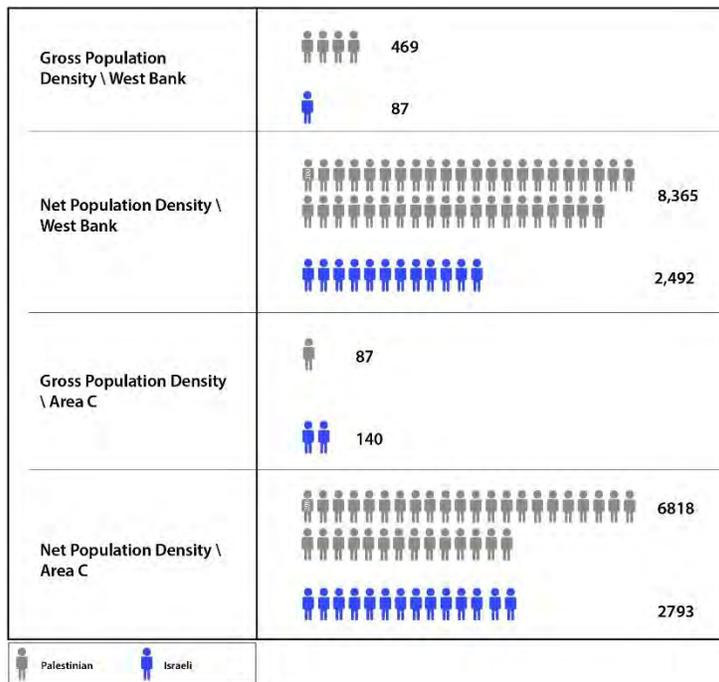


Figure 1. Palestinian and Israeli Settlers Population Densities in the West Bank.

The contrast in access to development space and resources between Palestinians and Israeli settlers' in Area C is even larger when comparing population densities within the areas allotted for development (i.e. master plans). The Palestinian population density within the Palestinian Ministry of Local Government (MoLG) proposed master plans in Area C is almost 600% higher than the population density of Israeli's in the settlements master plan (figure 2). This is a part of Israel plan to facilitate expansion and development of settlements while restricting the Palestinian potential for development in Area C.

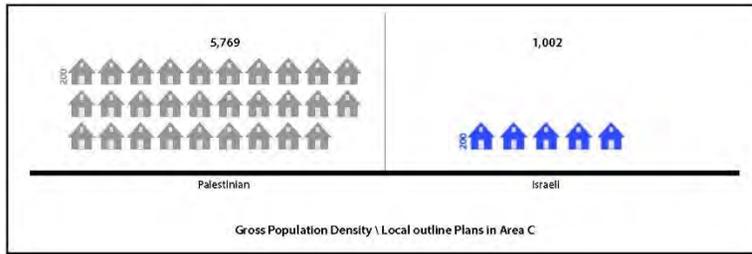


Figure 2. Palestinian and Israeli Settlers Population Densities in master plans in area C.

Currently, the Palestinian population density per the area of MoLG proposed master plans in Areas C is much higher than the Palestinian population density per area of approved master plans in areas A and B (figure 3). The high Palestinian population density within the master plans of Area C means there is little space for population increase, provision of essential services, and utilization of land for agriculture or any other resource for economic development. Restricting development of Palestinian communities' results in migration of Palestinians to urban centres and villages in Areas "A" and "B" which can be viewed as a part of Israeli policies to depopulate the Palestinian population in Area C on route to complete Israeli control of this area.

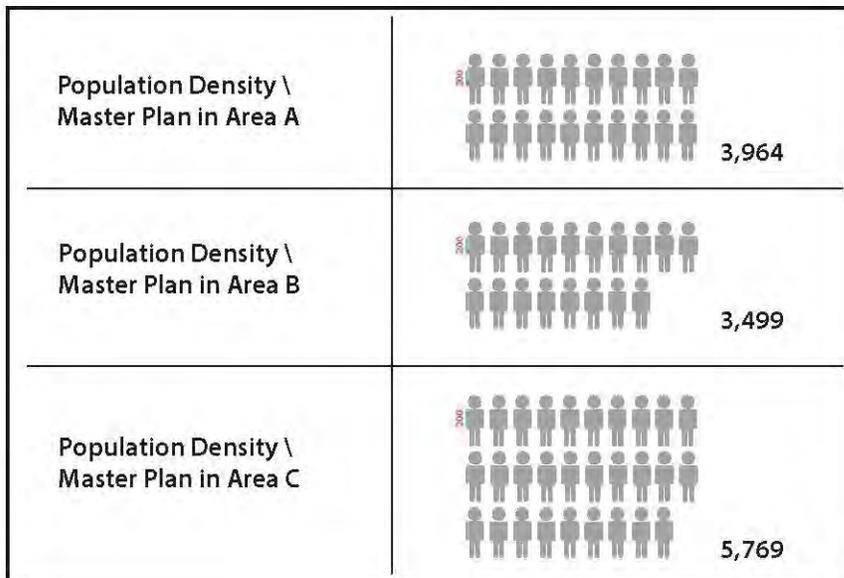


Figure 3. Palestinian Population densities within the land area of Master Plans in Areas A, B, and C.

1.3 Status of planning in Area C

Since 2011, the Ministry of Local Government (MoLG) in participation with the local communities (e.g. local village councils) began drafting their own Detailed Local Outline Plans. As of August 2015, 108 plans have been drafted for 116 communities (map 2) of which **77** have been submitted to the ICA. There are an additional 618 communities in Area C still without proposed outline plans.

The planning process and negotiation with the ICA is coordinated by the Government of Palestine (GoP) and Ministry of Local Government (MoLG). The outline plans were developed to comply with ICA planning criteria. The ICA requires that the plans do not include lands for agriculture and other development purposes, because of their interpretation of the Jordanian Planning Law of 1966 which states that these 'Detailed Outline Plans' are only designed for built-up areas. Furthermore, these plans took into consideration the geographical distribution of Israeli settlements, the West Bank segregation barrier, and other constraints imposed by Israel such as closed military zones, Israeli-designated nature reserves and archaeological sites. In spite of these plans being developed to comply with ICA planning criteria, only **three** of the **77** submitted plans were approved by the ICA; **seven** were rejected for reasons including location in firing zone, a nature reserve or others. Another **51** plans have passed more than 18 months of technical discussions with the ICA without decision. The remaining **10** plans entered the review process by the ICA less than 18 months ago. There are also **33** outline plans in the data collection and preparation phase (table 1).

MASTER PLAN STATUS	Number of plans	Planned Area (dunum)
Data Collection & Plan Preparation	33	4,736+
Technical Discussion	64	41,851+
Public Objection	8	2,352
Final Approval by ICA	3	570

Table 1: Status and area (dunums) of the Local Outline Plans in Area C.



Map2: Location of outline master plans for 108 localities in Area C.

1.4 Israeli violations in Area C

Data on Israeli activities in the oPt were collected from the analysis of aerial photography, news media, periodic journals, and from a network of governmental and non-governmental local and international organizations. Data from 245 field surveys, studies and interviews were used to verify and complement the information collected from aerial photography, media and networks. The data were integrated into geographic information system (GIS) database to examine how such activities influenced the feasibility of the two-state solution promoted by the European Union.

It has been found that over the past year, settlements' expansion has accelerated with more than 6,299 housing units approved or passed different stages of approval in 17 settlements. Furthermore, 18 outposts were expanded adding 25 mobile homes. Meanwhile, the demolitions of Palestinian structures, confiscation of land, and uprooting of trees were on the rise with 482 houses and structures demolished displacing approximately 2,450 people from their homes (map 3), confiscating 41,609 ha of land, and uprooting 13,367 trees (map 4). Furthermore, there were 898 settlers recorded attacks on Palestinian population and properties, mostly, in Area C. The maps 3, 4, and 5 show the geographical distributions of house demolitions, tree uprooting, and settlers attacks. House and structures demolitions in 2015 were mainly concentrated in the Upper Jordan valley, the Area C corridors linking the Eastern and Western Segregation zones, Eastern Jerusalem, and the Area C corridor linking Eastern Jerusalem and the Israeli Settlement blocks in Southern Hebron Governorate. A quite similar geographical pattern to house and structures demolitions emerged when the events of tree uprooting and settlers' attacks in 2015 were mapped (maps 3, 4, and 5).

In addition to the geography of the aforementioned Israeli violations in Area C, approximately 65% of the plans, tenders and activities for settlement expansions in the past few years occurred in the Western Segregation Zone (the land area between the segregation wall and the green line) and the remaining plans, tenders and settlement expansions occurred in the corridors linking the Western Segregation Zone with the Jordan Valley (Eastern Segregation Zone) and with the settlement block in Southern Hebron (Table 2). It should also be noted that 107 of the 169 Israeli settlements are in the Western segregation zone housing 85% of Israeli settlers whereas most of the remaining settlements are located in the corridors in Qalqilya and Nablus Governorates, the corridor North of Salfit, and the corridor linking Eastern Jerusalem to Southern Hebron and passing to the West of Bethlehem and East of Hebron cities.

It is not the scope of this report to draw conclusions from the aforementioned geographical patterns on the Israeli government reasons and drivers behind the geographical patterns of settlement expansions, house demolitions, tree uprooting, and settlers' attacks, nor it is the scope of this report to assess the impediments to and risks of development inside or outside the segregation zones, Eastern Jerusalem, and the corridors, but rather to show the areas where the Palestinian communities are most suffering from the Israeli illegal violations of customary humanitarian international laws and UN charters. The social, economic, and environmental impacts of these violations were fully assessed in reports that accompanied this study. These

were the "Economic Costs Of Israeli occupation Report 2015", the "Status of Environment report 2015", and "The segregation Wall Impacts on the Palestinian Environment".

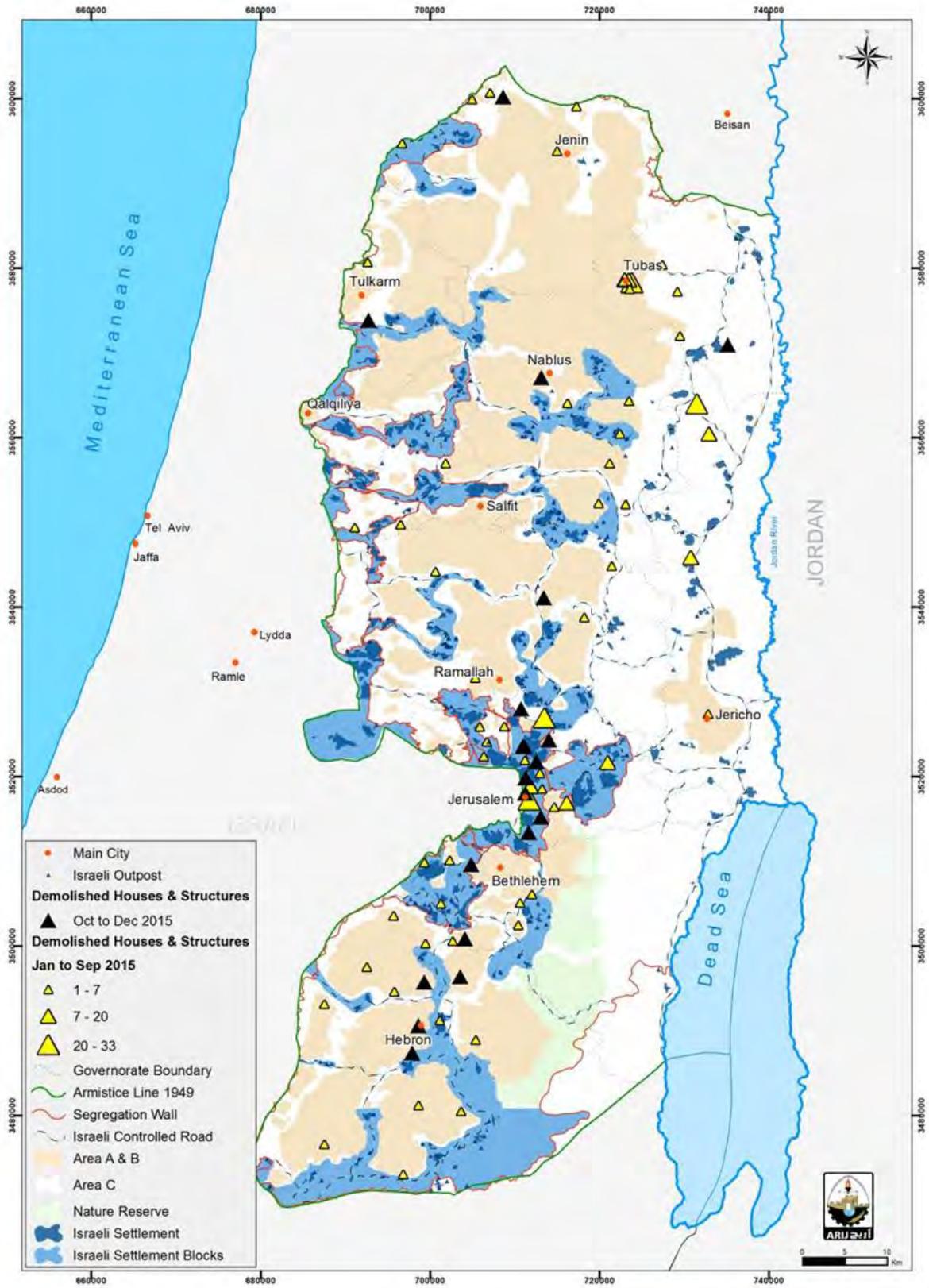
Israeli Settlement Plans and Tenders in the occupied Palestinian Territory in 2015						
No.	Settlement Name	Date of Announcement	Plan No / . Tender No.	No. of Units / No. Of Lands leased	Governorate	Status from Wall Path
1	Adam Geva Benyamin	Feb-15	21/2015/ש'	60	Jerusalem	East
2	Adam Geva Benyamin	May-15	20/2015/ש'	54	Jerusalem	East
3	Beit El	Jul-15	219/12/1	24	Ramallah	East
4	Beit El	Jul-15	218/18	296	Ramallah	East
5	Itamar	Nov-15	A/4/3/163	675	Nablus	East
6	Kiryat Arba - Giv'at Kharsina	Feb-15	24/2015/ש'	102	Hebron	East
7	Ma'ale Mikhmas, Rimunim, Kochav Hashahar, Tel Zion, Pesagot , South Ofra .	Nov-15	-	2200	Ramallah	East
8	Shilo	Nov-15	Retroactive Legalization	94	Nablus	East
9	Beit Arye	Jul-15	202/1/1	179	Ramallah	West
10	Beit Arye	Jul-15	201/3/10	24	Ramallah	West
11	Beitar Illit	Feb-15	171/2014/ש'	218	Bethlehem	West
12	Beitar Illit	Mar-15	39/2015/ש'	20	Bethlehem	West
13	Gilo	Jul-15	13157	797	Bethlehem	West

14	Gilo	Nov-15	13261	891	Bethlehem	West
15	Giv'at Zeev	Apr-15	215/2/12	NA	Jerusalem	West
16	Giv'at Zeev	May-15	174/2014/ש'	100	Jerusalem	West
17	Giv'at Zeev	May-15	75/2015/ש'	85	Jerusalem	West
18	Giv'at Zeev	Jul-15	220/10/13	601	Jerusalem	West
19	Herod's Gate)Bab As Sahera(Nov-15	-	21	Jerusalem	West
20	Immanuel	Jul-15	7/2015/ש'	Lease of Land - Trade Purposes	Qalqilyia	West
21	Immanuel	Sep-15	6/2015/ש'	Lease of Land - Trade Purposes	Qalqilyia	West
22	Karnei Shomron	Mar-15	40/2015/ש'	Lease of Land - Gas Station	Qalqilyia	West
23	Karnei Shomron	Mar-15	41/2015/ש'	Lease 2 plots of land	Qalqilyia	West
24	Karnei Shomron	Mar-15	42/2015/ש'	Lease of Land - Trade Purposes	Qalqilyia	West
25	Ma'ale Adumim	Jan-15	8/2015/ש'	Lease of land - Hotels	Jerusalem	West
26	Ma'ale Adumim	Jan-15	9/2015/ש'	Lease of Land - Trade Purposes	Jerusalem	West
27	Ma'ale Adumim	Jul-15	10/2015/ש'	Lease of Land - Trade Purposes	Jerusalem	West
28	Ma'ale Adumim	Jul-15	11/2015/ש'	Lease of Land - Trade Purposes	Jerusalem	West

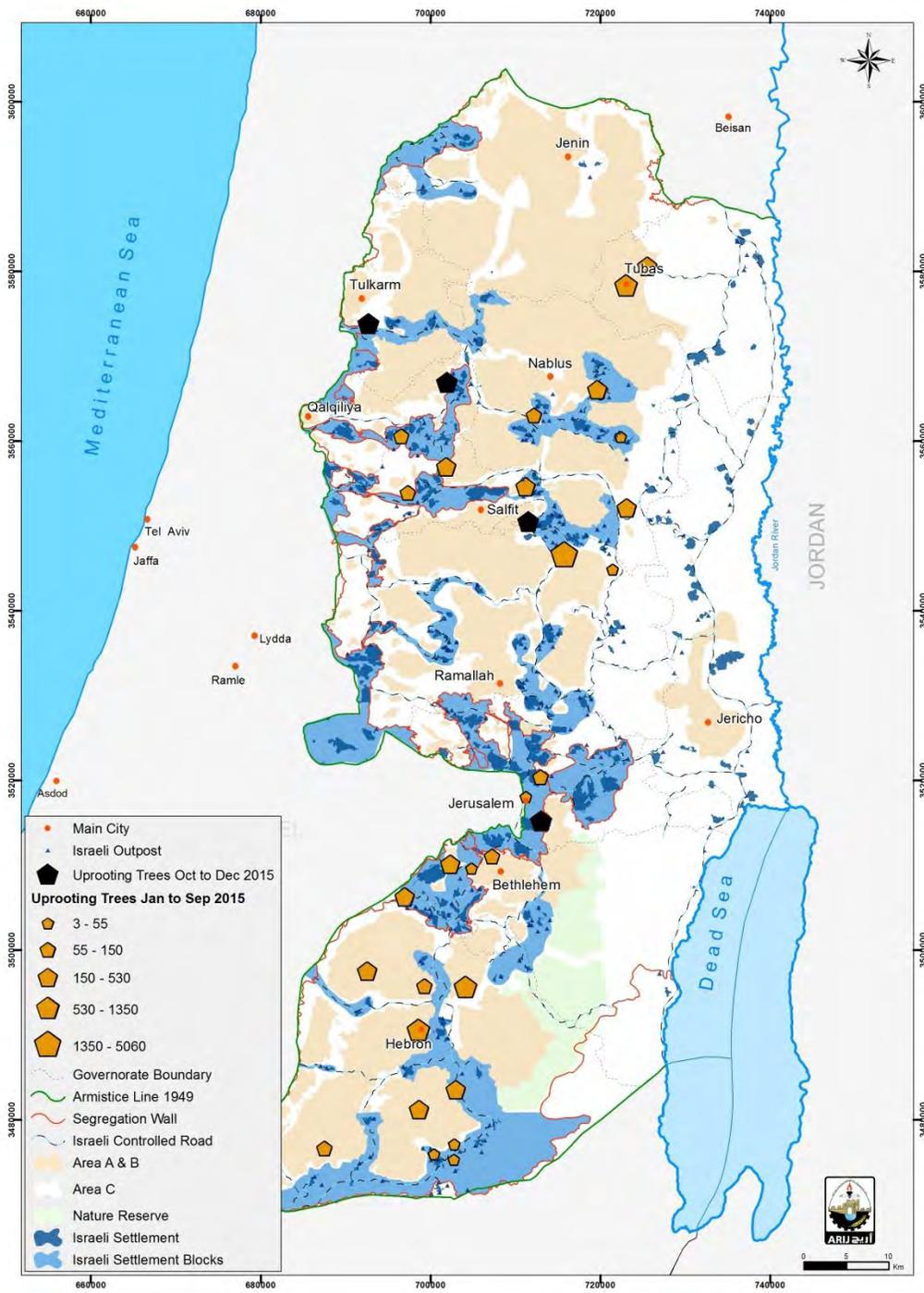
29	Ma'ale Adumim	Jul-15	12/2015/פ'	Lease of Land - Trade Purposes	Jerusalem	West
30	Ma'ale Adumim	Jan-15	420/10	NA	Jerusalem	West
31	Ma'ale Adumim	Jan-15	420/1/16/69	NA	Jerusalem	West
32	Ma'ale Adumim	Jan-15	420/1/3/13/2	NA	Jerusalem	West
33	Ma'ale Adumim	Jan-15	420/1/6/23	NA	Jerusalem	West
34	Ma'ale Adumim	Jan-15	420/1/7/32/1	NA	Jerusalem	West
35	Ma'ale Adumim	Jan-15	420/1/7/50	NA	Jerusalem	West
36	Ma'ale Adumim	Feb-15	420/1/16/4/1/1	112	Jerusalem	West
37	Ma'ale Adumim	Feb-15	420/1/4/38	NA	Jerusalem	West
38	Ma'ale Adumim	Apr-15	420/1/7/15	NA	Jerusalem	West
39	Ma'ale Adumim	May-15	420/1/7/45	NA	Jerusalem	West
40	Ma'ale Adumim	Jun-15	420/1/36/1	NA	Jerusalem	West
41	Ma'ale Adumim	Jul-15	10/2015/פ'	Lease of Land - Trade Purposes	Jerusalem	West
42	Ma'ale Adumim	Jul-15	11/2015/פ'	Lease of Land - Trade Purposes	Jerusalem	West
43	Ma'ale Adumim	Jul-15	12/2015/פ'	Lease of Land - Trade Purposes	Jerusalem	West
44	Ma'ale Adumim	Jul-15	420/1/16/66	NA	Jerusalem	West
45	Ma'ale Adumim	Jul-15	420/1/16/32/2	NA	Jerusalem	West
46	Ma'ale Adumim	Jul-15	13/2015/פ'	Lease of Land - Trade Purposes	Jerusalem	West
47	Ma'ale Adumim	Jul-15	14/2015/פ'	Lease of Land - Trade Purposes	Jerusalem	West

48	Ma'ale Adumim	Oct-15	420/1/3/54	NA	Jerusalem	West
49	Neve Daniel	Jul-15	402/6	Religious School - Yeshiva	Bethlehem	West
50	Neve Yacov	Jul-15	6513/ א	36	Jerusalem	West
51	Pisgat Zeev	Jul-15	ד'2015/59 (א4430)	23	Jerusalem	West
52	Pisgat Zeev	Nov-15	157/2015/ד'(Plan 11647)	68	Jerusalem	West
53	Ramat Shlomo	Nov-15	11085 (266/2015/ד'	1531	Jerusalem	West
54	Sinsanah	Nov-15	522/1	97	Hebron	West
55	Telpiot	Mar-15	148/2014/ד'	Lease of 3 land Plots	Jerusalem	West
56	Yakir	Oct-15	118/2/1	377	Salfit	West
57	Alfei Menashe	Apr-15	23/2015/ש'	78	Qalqilyia	West
58	Ariel	Feb-15	176/2014/ש'	60	Salfit	West
59	Ariel	Nov-15	175/2015/ש'	Lease of 3 plots	Salfit	West
60	Elkana	Feb-15	22/2015/ש'	156	Salfit	West

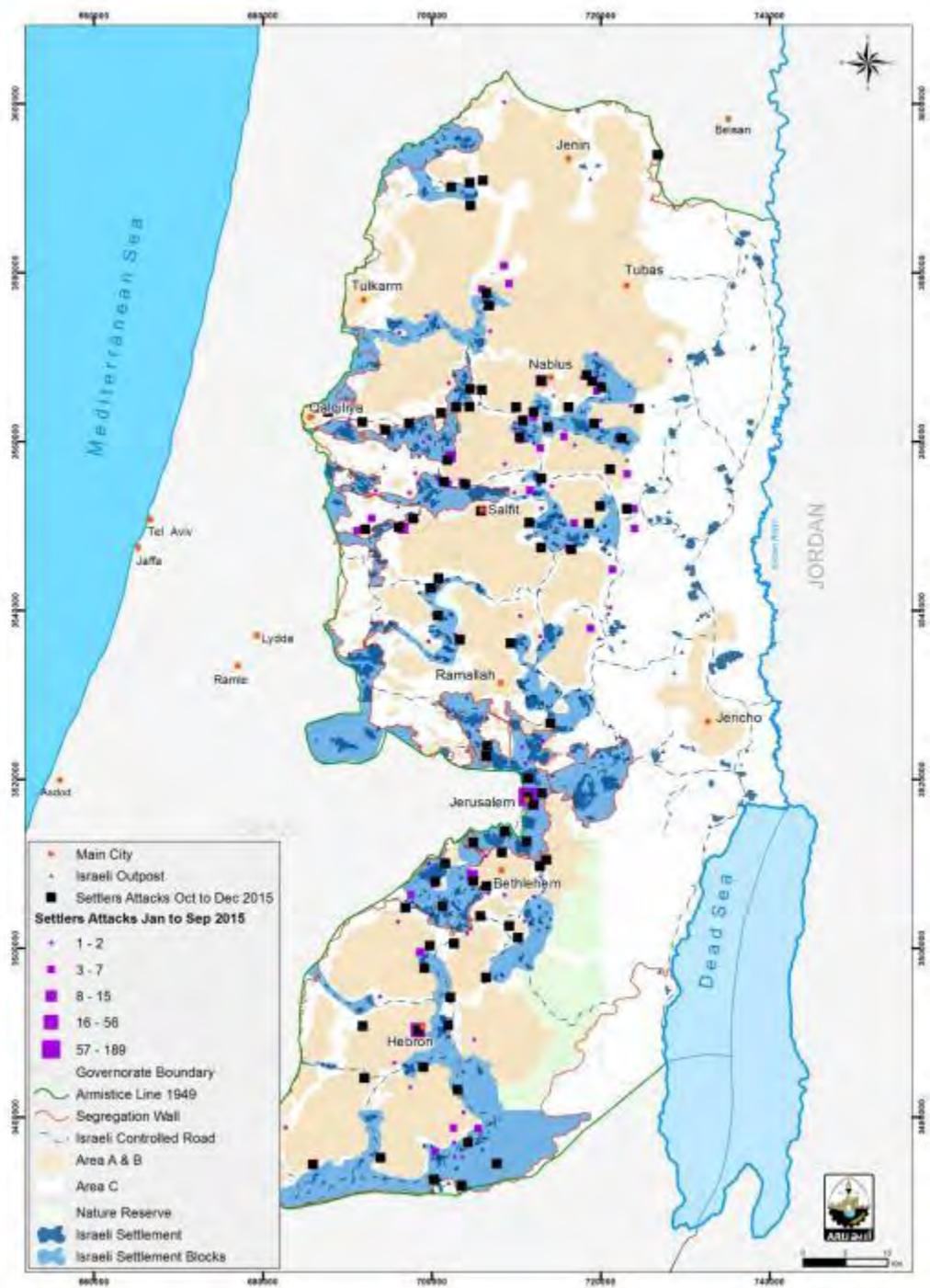
Table 3. Israeli Settlement Plans and Tenders in the occupied Palestinian Territory in 2015



Map 3. Demolished Palestinian homes and structures in the West Bank.



Map 4. Uprooted trees by Israeli military forces in the West Bank



Map 5. Frequency and location of Israeli Settlers attacks on Palestinian population and structures.

1.5 Economic Potential of Area C

1.5.1 Agricultural production in Area C

Israeli restrictions on access to water limit the amount of water that Palestinians can use. The access restrictions to water and land have constrained the development of irrigated agriculture in Palestine.

Area C of the West Bank is where most Palestinians water resources exist. Palestinians, however, only have access to about 15% of the annual recharge capacity of the West Bank's water system. The Jordan River is an example of an even more inequitable allocation of water resources. Palestinians are not allocated any of the Jordan's River water resources. Glover and Hunter (2010) estimate that an equitable per capita distribution of Israel's current allocation of Jordan River water would be 268 MCM for the Palestinians. The 268 MCM figure for Palestinians is very close to the allocation of the Johnston plan, which the literature estimates to be around 257 MCM/year (Abu Ju'ub, 2003).

If sufficient water was available and restrictions on land use were removed, the total potentially irrigable area in the Palestinian territories would be 745,000.0 dunum (Glover and Hunter, 2010). This is an additional 448,224.0 dunum of irrigated land that would become available to Palestinians if restriction on water and land uses were lifted. Of these, there are at least 50,000 dunums of land in the Jordan Valley suitable for irrigated agriculture. The favourable climate and year-long agricultural production capacity of the Jordan valley, the quality of agricultural produce, free access to the Gulf Cooperation Council (GCC) markets, and an appropriate cropping pattern with high value crops would enable the development of highly profitable agro-industrial businesses (Gal et al. 2010).

Alternative water resources can also be used to increase the area of irrigated agriculture in Area C. These water sources include the reuse of treated wastewater, and surface (runoff) water harvesting and reuse.

The long-term average annual flow of surface water through wadis in the West Bank was estimated at about 165 MCM/yr (PWA 2013). The flood wadis can be divided according to the flow direction as follows: the eastern flood wadis (toward the Jordan Valley and towards the Dead Sea) and the western flood wadis (towards the Mediterranean) (**Error! Reference source not found.x**). Approximately 45 MCM/yr of surface water flow in Area C towards the Jordan River and the Dead Sea and a significant proportion of surface water flow in Area C towards the Mediterranean. If harvested and restrictions on land use were lifted, the surface water flow can be used to irrigate approximately 135,000 dunums of land in Area C.

In addition to surface water harvesting, approximately 66 MCM/yr of wastewater are generated in the West Bank. Currently, only 15 MCM/yr of the generated wastewater is collected in sewerage networks and only two thirds (or 10.3 MCM/yr) of the collected wastewater is treated

or partially treated. The wastewater not collected in sewerage networks is collected in cesspits and either infiltrates into deep ground layers or is emptied using tankers in Wadis and open spaces. While new construction projects of centralized wastewater treatment plants will further increase the treatment capacity in the West Bank, there are few successful examples of treated wastewater reuse in agriculture. Reusing the treated wastewater can: create an additional water resource for irrigating fruit trees and forages; improve soil fertility and organic content; increase crop yield while decreasing the need for inputs of synthetic fertilizers; reduce contamination of soil, surface and ground water resources; and subsequently reduce the health risks of contracting water-borne diseases.

In many rural areas, it is not financially feasible to connect rural housing units to conventional centralized wastewater management systems due to the high capital cost of installing sewage collection networks in areas with dispersed housing patterns. Alternatively, household-level small scale wastewater treatment plants are "more" economically feasible than centralized systems. Two types of onsite small scale wastewater treatment systems were implemented in the West Bank, namely: (1) Black wastewater treatment and, (2) Grey wastewater treatment. Scaling-up the use of these technologies could provide a valuable water resource for resource-poor farmers to irrigate their lands and increase their agricultural yields since irrigated agriculture, compared to rainfed agriculture, increase yields of fodder crops by 10 to 11 folds on average.

1.5.2 Industrial production in Area C

1.5.2.1 Quarries

The West Bank territory is also rich in gravel and stone. Gravel and stone including marble currently represent the major merchandise export of Palestine. Most of the mines and quarries from which these materials are extracted are located in area C and are under direct Israeli control. However, Israeli often restricts the development of the Palestinian mining industry while facilitating the extraction of gravel and stone by Israeli companies. Israeli companies operating in Area C produce the largest amount of mining and quarrying material for Israel, mainly gravel.

USM (2011) reported that the value of stone reserves in the West Bank is estimated at \$30 billion. Despite the industry's huge potential, its production is limited due to Israeli restrictions in area C. Many Palestinian quarries are not licensed by the Israeli Civil Administration, and continuously face machinery and vehicle confiscation.

1.5.2.2 Dead Sea salts and minerals

The Dead Sea lies between the West Bank, Jordan and Israel but the West Bank side is entirely lying within area C. Access to the Dead Sea is completely sealed off for Palestinians as far as economic activities are concerned. Three types of salts make up most of the Dead Sea economic resources: Potash, Bromine, and Magnesium. The high concentration of these minerals in the Dead Sea make the extraction process a highly profitable endeavour. The

development of a chemical industry in the Palestinian Dead Sea is therefore potentially viable if Israeli restrictions were lifted.

Flow Direction	Catchment	Average flow rate (MCM)
Western wadis flowing towards Mediterranean Sea	Al Moqatta'	3.6
	Al Khodeira-Abu Nar	8.3
	Al Khodeira-Massin	11.7
	Alexander-Zeimar	8.7
	Alexandar-Abraq	8.1
	Qana	12.8
	Sarida	22.8
	Al- Dilb	16.4
	Salman	6.5
	Soreq	2.1
	Soreq Al sarar	1.7
	Lakhish-Saint	5
	Lakhish	5.4
	Shiqma	2.6
	Besor-Nar	4.9
Besor	2.1	
Total		122.7
Eastern wadis flowing towards the Jordan River	Malih-Shubash	0.9
	Malih	1.2
	Abu Sidra	0.8
	Faria	6.4
	Al'Ahmar	4.35
	Auja	4.6
	Nueima	1.7
	Qilt	4.2
	Marar	0.4
Total		24.55
Eastern wadis flowing towards the Dead Sea	Mukallak	3.5
	Qumran	0.4
	Nar	2.4
	Daraja	5.3
	Hasasa	0.5
	Ghar	6.5

	Abu El-hayyat	2.4
	Abu Muradin	0.5
Total		21.5
Total West Bank Runoff		168.75

Table x: Average surface water runoff in Wadis in the West Bank.

1.5.2 Services sectors in Area C

Area C has been identified consistently as a priority area for humanitarian assistance in recent years, due to the range of humanitarian needs affecting residents of the area. Among the key drivers of humanitarian vulnerability in Area C are policies and practices applied by the Israeli authorities in the context of the ongoing occupation of the West Bank. These include settlement activity; a discriminatory planning and zoning regime; restrictions on development; and restrictions on Palestinian movement and access, including the construction of the Segregation Zones. For instance, the Bedouin population, in particular, have limited access to services (8Km average travel distance from clinics and 6km from school) resulting in lower post-school educational attainment, higher illiteracy rates, and hence substantially lowering income and accumulating debts. A full analysis of the Bedouin, rural communities, the communities in the Jordan valley and in East Jerusalem is presented in Chapter 2.

2. Challenges and Opportunities of Sustainable Socio-Economic Development in Area C

2.1 Socio-Economic Conditions in Area C

2.2.1 Background

The state of Palestine has been, and remains, subject to a set of specific constraints imposed by the Israeli occupation that render the full utilization of human and economic resources impossible. This is well manifested in more than 60% of the West Bank which is classified as Area C¹; where Israel retains full security and administrative control over planning and construction, while the Palestinian Authority is responsible for the provision of services. This Land division has created considerable obstacles that threatened the Palestinian livelihood namely: the inability to freely access most land, water and natural resources in the country; the inability to planning, construction and development of infrastructure, the inability of free movement of people, goods and vehicles within and between different parts of the West Bank, East Jerusalem, in addition to challenges in ensuring the basic services that should be provided to the vulnerable communities in Area C. The delivery of basic public services is likewise severely challenged by access and movement restrictions across Area C; these include the segregation wall, checkpoints, roadblocks, and a permit system, which undermine livelihoods and access to basic services, as well as the ability of humanitarian organizations to deliver assistance².

Israel's continued control over Area C affects not only Area C communities, but also the many thousands of residents of Areas A and B who own land in Area C. In addition, because it is the only contiguous territory in the West Bank, Area C is of vital importance to the entire population, containing valuable grazing and agricultural land, water resources, and holding the land reserves necessary for the expansion of Palestinian population centres in Areas A and B and the development of national infrastructure. In addition, the intrusive route of the segregation wall through eight of the eleven West Bank governorates isolates farmers from their farms, greenhouses, grazing lands and water resources. The completion of the segregation wall will further aggravate the situation, with an expectant loss of almost 8.6% percent of West Bank agricultural land, 31% of total forested area, and 21% of the

¹ Area C was defined under the Oslo Accords as “areas of the West Bank outside Areas A and B”. Israel was to retain civil and security control on an interim basis. While the 1995 Interim Agreement called for the gradual transfer of power and responsibility in the sphere of planning and zoning in Area C to move from the Israeli Civil Administration (ICA) to the Palestinian Authority (PA), this transfer was never implemented. As a result, any Area C construction, whether a private home, an animal shelter or a donor-funded infrastructure project, still requires the approval of the ICA, which is under the authority of the Israeli Ministry of Defense. Area C comprises of 3,459,000 dunums (according to the GIS&RS department ARIJ (The Applied Research Institute – Jerusalem))

² Ocha (UN- Office for the Coordination of Humanitarian Affairs occupied Palestinian territory). 2013. Area C of the West Bank: Key humanitarian concerns.

rangelands as it will be annexed behind the Segregation Wall upon its completion³. Drought and frost have exacerbated the hardship. This has forced families to leave Area C and increased their dependency on humanitarian and development-related aid and assistance⁴. Forced displacement also threatens family cohesion and strains host communities and traditions⁵.

2.2.2 Demographic and Household Characteristics

The division of the West Bank into areas A, B and C was a territorial and administrative division that did not correspond directly with the built-up areas of Palestinian locales. As a result, towns and villages rarely fall entirely within one area and exact population figures are difficult to ascertain. The Israeli organization Bimkom argues that there is no exact estimate for the Palestinian population in Area C due to the high number of communities whose boundaries overlap Areas A, B and C, but it is estimated that as many as 150,000 Palestinians live within the zone, adding that this figure includes 47,000 Palestinians who live in 149 communities whose built-up area is located within Area C⁶.

UNOCHA indicated that there are nearly 271 communities that have more than 50 percent of their built-up areas in Area (C), including many which are entirely in Area (C) most of them are small herding communities. Furthermore, their estimates indicate that the number of Palestinian population in the communities that are “totally” located in area (C) is nearly 40,000 Palestinians most of them are living in vulnerable Bedouin communities⁷.

The Palestinian Central Bureau of Statistics (PCBS) in an unpublished study indicated that the Palestinian population in area (C) for the year 1997 was (71,474), which increased to reach (98,567) in the year 2007. The PCBS estimated that the population continued in increase to reach (117,000) in the year 2012 with an annual growth rate of 3.3%. The PCBS estimates for the population in area (C) is considered the least when compared to the estimates of other organizations.

According to the analysis conducted by the Geo-informatics Department at the Applied Research Institute-Jerusalem (ARIJ), there are over 291 Palestinian villages that have some part of their built up area in Area C. While it is difficult to ascertain the exact Palestinian population residing in Area C due to the high number of communities whose boundaries overlap Areas A, B and C, the study has focused on localities that have their total built up area situated in Area C. It is estimated that as many as 40,245 Palestinians live in 73 Palestinian localities (Local Government Units “LGUs”) within Area C. The total population number in these localities is estimated in the year 2015⁸; comprising 1.4% of the total

³ ARIJ (Applied Research Institute-Jerusalem)-GIS (Geographic Information System) Department. 2015. Land Use –Land Cover Analysis for the year 2012.

⁴ FAO/WFP, December 2009 – Food Security and Vulnerability Analysis Report in the oPt.

⁵ UNRWA, 2009 – Isolated Herding Refugee Population, Draft document.

⁶ Bimkom. 2008. The Prohibited Zone - Israeli planning policy in the Palestinian villages in Area C.

⁷ Ocha (UN- Office for the Coordination of Humanitarian Affairs occupied Palestinian territory). 2013. Area C of the West Bank: Key humanitarian concerns.

⁸ The Palestinian Central Bureau of statistics (PCBS), 2010. Population Census 2007. Ramallah. Palestine

population of the West Bank Region and 9.1% of the total and partial population inhabiting Area C. It was also noted that the Palestinian population annual growth rate reached 2.6%. Population increase is slow among communities located in Area C, where only 23% of Palestinian population increased from the year 2007 until the year 2015 (Figure 2.1).

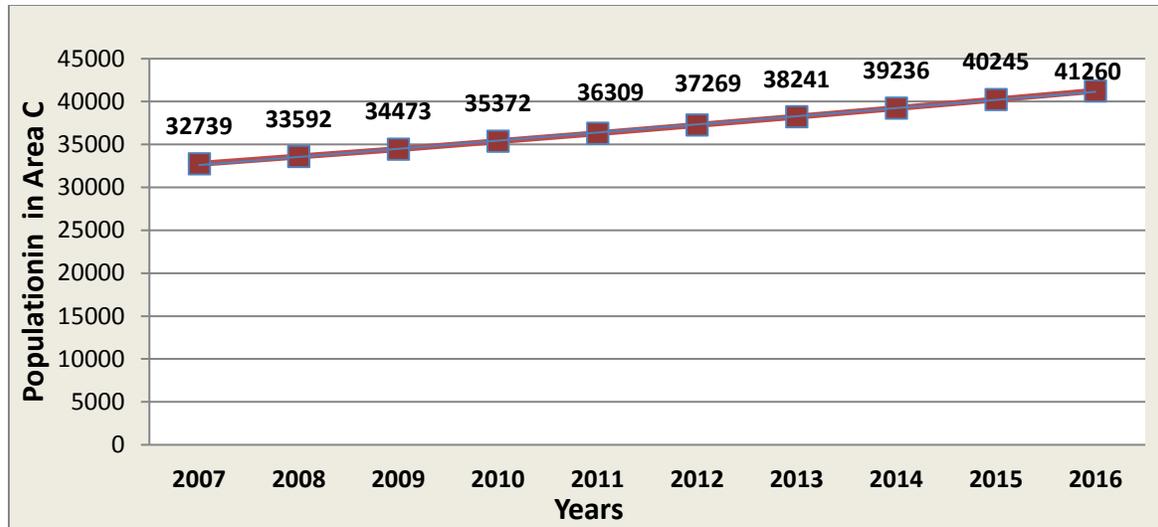


Figure (2.1): Population number of Palestinians living in Area C by year

Source: (PCBS, Population projections (2007-2016): based on Census 2007)

The total Palestinian built up area that is located in Area C is 53,217 dunums; forming only 1.5% of total Area C. When compared with total population number inhabiting this area, it appears that Area C is characterized with low population density reaching up to 55 person/km especially when compared to population density in Area A and B, which reached up to 1128 and 734 person/km respectively. The highest population density is found in Jerusalem Governorate (713person/km) (Annex 1). This reveals that most of the Palestinians population is concentrated in Area A and B since they were prevented from expansion in Area C as part of the Israeli regime of land grab. This also highlights that most of Jerusalem governorate area is located in Area C. It is worth noting that 70% of Area C is now included within the boundaries of the regional councils of Israeli settlements, and so is off-limits for Palestinian use and development.⁹

Most of the Palestinian communities inhabiting area C are rural communities¹⁰ reaching up to 99% of total population in Area C; of which 44% communities are classified as Bedouins. The population inhabits Area C is classified according to ARIJ into four clusters (See Figure 2.1 and Map 2.1). The clustered localities are those with built up area totally located in the geo-political Area C. The four clusters are as following:

⁹ UN habitat. 2015. Spatial Planning in Area C of the Israeli occupied West Bank of the Palestinian territory: Report of an International Advisory Board. May 2015. Palestine.

¹⁰ The Palestinian Central Bureau of statistics (PCBS), 2010. Population Census 2007. Ramallah. Palestine

- Rural communities: There are 32 rural¹¹ localities distributed in Area C with a total population reach up to 14,767 people.
- Bedouins communities: There are 33 Bedouin's localities distributed in Area C with a total population reach up to 7,893 people.
- Jerusalem Area communities: The J2¹² area located in Area C with 4 localities with a total area 11,685 people including Qalandiya Camp; the only camp with total built up area located in Area C and encompass the highest population number among the localities in Area C; with a total number reached up to 10,144 person in the year 2015 (25% of total population inhabiting Area C).
- Jordan Valley communities: There are 4 localities located in the Jordan valley ecosystem in Area C with total population reach up to 5,900 people
- No Urban locality was recorded in Area C¹³.

The Palestinian population in Area C is composed of some of the most vulnerable families and communities in Palestine. Of the approximately 40,245 Palestinians residing in communities their built up area is entirely in Area C, 7,893 live in vulnerable herding/Bedouin localities (ARIJ analysis, 2015) (see Figure 2.2). Farmers and herders living in Area C tend to experience worse conditions than the general population in terms of social indicators. This is because they usually live in remote areas under-served in (1) public services including: education, water and sanitation, health care, and (2) infrastructure. They are rarely granted permits to upgrade their homes or to invest in agriculture and other businesses¹⁴. Service provision to populations in Areas A and B has increased in recent years while communities in Area C still struggle to access basic services and assistance such as water/sanitation, primary education and basic safe shelter.

Area C contains 195 settlements, with a population of approximately 719,123 Israeli settlers (3.5 folds more than Palestinian population) for the year 2014, who have been allowed to transfer to the West Bank in contravention of International Human Law (IHL). Settlers' growth rate in Area C reached up to 4% for the year 2014 which is higher than the

¹¹ 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 of the following elements: a public electricity network, a public water network, a post office, a health centre with a full-time physician and a school offering a general secondary education certificate.

¹² According to the PCBS J2: Includes Jerusalem Governorate except that part of Jerusalem which was forcefully annexed by Israel following its occupation of the West Bank in 1967. This part includes the following localities: *Rafat, Mikhmas, Qalandiya Refugee Camp, Jaba', Qalandiya, Beit Duqqu, Jaba', Al Judeira, Beit 'Anan, Ar Ram, Dahiyat al Bareed, Al Jib, Bir Nabala, Beit Ijza, Al Qubeiba, Khirbet Umm al Lahem, Biddu, An Nabi Samwil, Hizma, Beit Hanina al Balad, Qatanna, Beit Surik, Beit Iksa, 'Anata, El 'Eizariya and Abu Dis, Az Za'ayyem, Al Sawahira ash Sharqiya and Ash Sheikh Sa'd.*

¹³ An urban area is any locality whose population amounts to 10,000 persons or more. This applies to the

¹⁴ Ocha (UN- Office for the Coordination of Humanitarian Affairs occupied Palestinian territory). 2013. Area C of the West Bank: Key humanitarian concerns

Palestinian growth rate by 1.5%. They are also using all resources of the area freely, on the contrary is the case of the Palestinians who cannot cultivate, build or even rehabilitate their assets; without given permits from Israel (rarely granted). The Israeli occupation is also jeopardizing the available resources by their practices in Area C including confiscation of land for building settlements, constructing by pass roads, disposing their waste in nature mainly in Palestinian lands, and others.

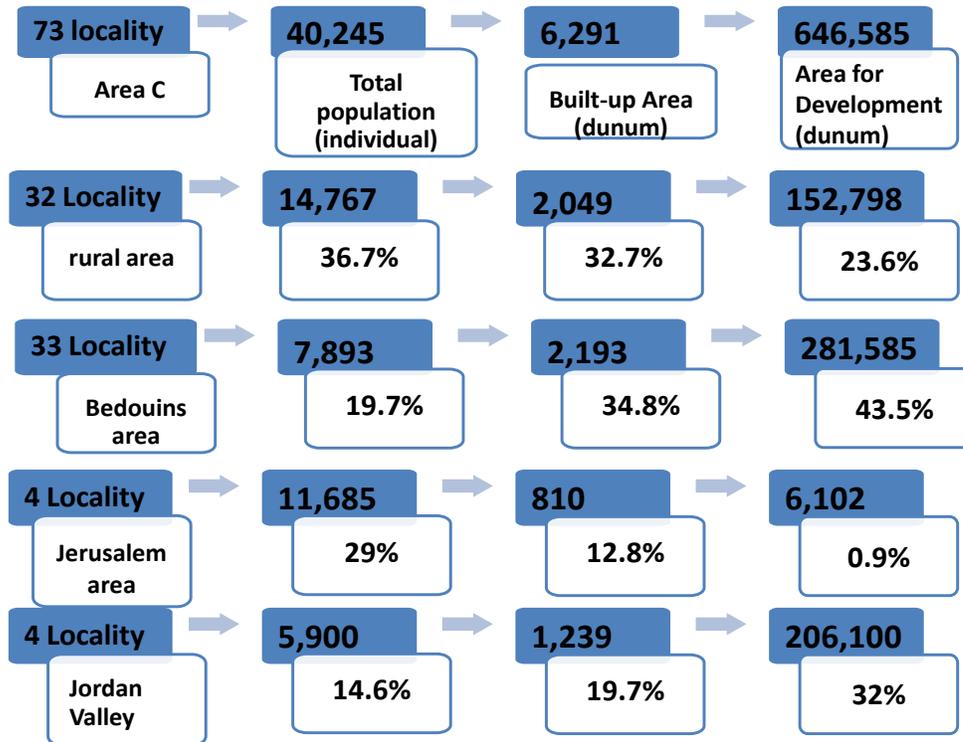
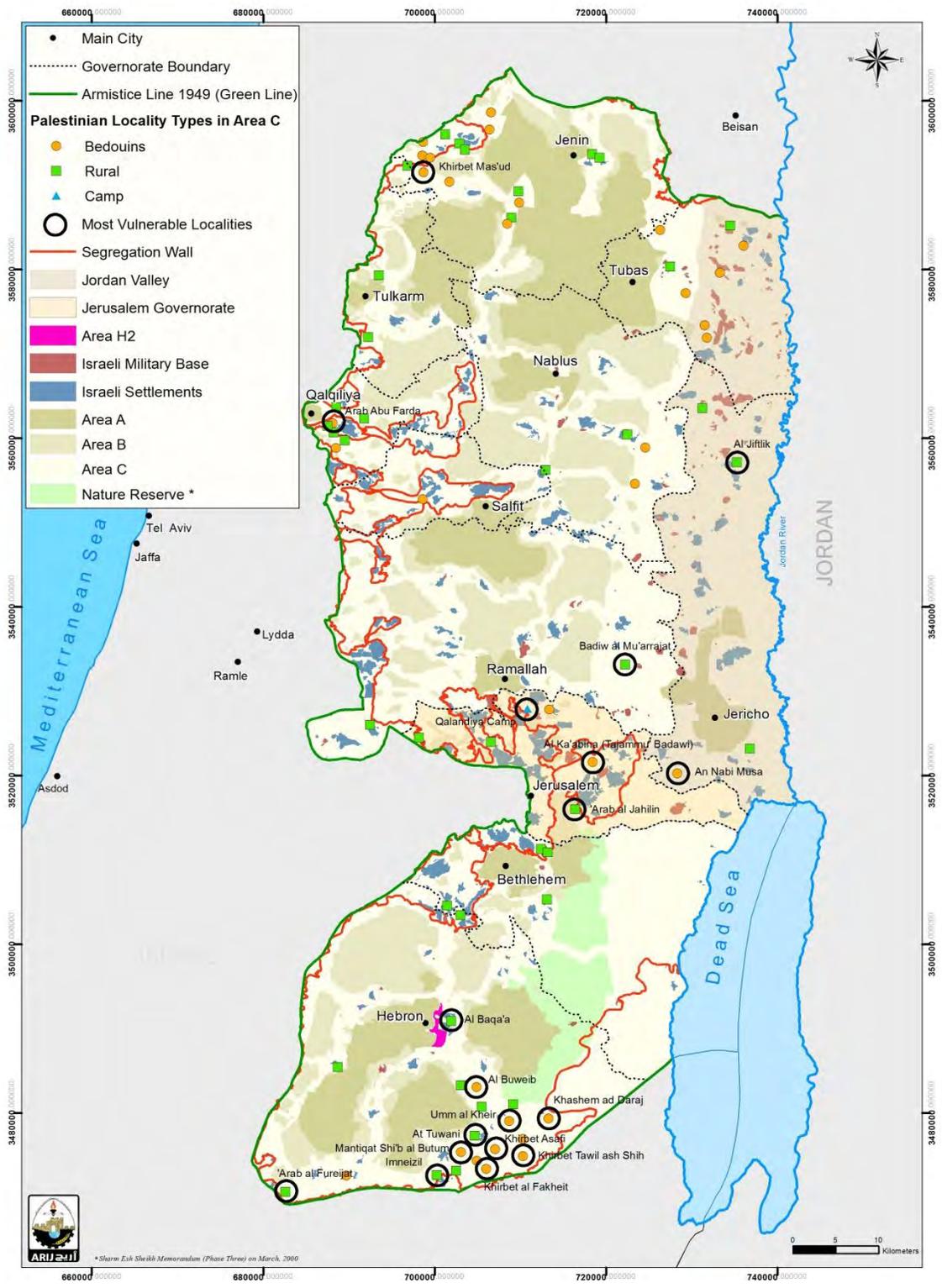


Figure (2.2): Distribution of Population in Area C by locality type

**Area for development is the area within the locality boundaries excluding the built up area (calculated by ARIJ- GIS and Remote Sensing Department, 2015) The locality boundary is the delineated boundary set according to 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).*



Map (2.1): Distribution of Palestinian localities in Area C by locality type and cluster

2.2.3 Economy and Labor Market

Area C is considered a vital and important resource for the Palestinian economy, as it contains about 60% of agricultural lands of the West Bank which include permanent crops, arable lands, heterogeneous agricultural lands and plastic houses. Furthermore, this area holds a lot of touristic and archaeological sites, in addition to water resources such as wells and springs besides many other natural resources like metals and salts. It is worth mentioning that Area C is considered the only area that is suitable for Palestinian urban expansion for most of Palestinian communities in the West Bank and the potential food basket for all the Palestinians.

Area C has the potential to contribute greatly to the Palestinian economy and future economic development; however, present restrictions under the Israeli occupation prevent such opportunities from flourishing. Currently, economic activity in Area C is almost exclusively limited to low intensity agriculture and herding, which are the trades and livelihood of the majority Bedouin and rural communities. The contraction of the Palestinian per capita GDP by 3.3 per cent (in 2014) and the extremely high unemployment rates subject large sections of the Palestinian population to poverty and food insecurity¹⁵. With limited job opportunities and minimal existing potential for job creation, the average unemployment among the 73 Area C localities is 20.1%; compared to 17.7% employment in the West Bank. Table (2.1) identifies the range of unemployment rates per cluster, characterized as high as 62 percent (in Al Buweib Bedouin area), while some areas are all actively employed¹⁶. Communities in Area C have a large proportion of children that are being supported by few in the labor force; on average only 22%¹⁷ of the community is economically active¹⁸. Therefore, the burden of providing for households falls on a proportionally small labor force. These circumstances which are compounded by high unemployment rates increase the likelihood of high poverty rates in the community (see Table 2.1).

Type of Locality	Unemployment Range (PCBS 2007)	Poverty Rate (PCBS 2009)
Bedouin	31% (Range: 0-62%)	44.8% (Range: 5-83%)
Jerusalem	33.3% (Range: 18-48%)	65% (Association for Civil Rights, 2010)
Jordan Valley	3% (Range: 0-24%)	30.4% (Range: 19-30%)
Rural Area	16.4% (Range 0-48%)	32.4% (Range: 5-83%)

Table (2.1) Palestinian unemployment range and poverty rates in Area C by clusters

The labor force falls into four main areas of livestock farming, crop farming, employment in Israeli settlements, and other public employment as outlined in Figure (2.3). Bedouin and rural communities primarily consist of livestock and crop farming, at 91% and 93%

¹⁵ UN Conference on Trade and Development. 2015 Report on UNCTAD assistance to the Palestinians people: Developments in the economy of the Occupied Palestinian Territory, pg 4.

¹⁶ PCBS. 2010. Population Census 2007. Ramallah, Palestine

¹⁷ PCBS. 2010. Population Census 2007. Ramallah, Palestine

¹⁸ PCBS defines “economically active” as all persons aged 15 years and over who are either employed or unemployed.

respectively¹⁹. Employment in the Jordan Valley is also largely in livestock and crop farming at 90%. In comparison to these clusters, urban Jerusalem localities, excluding Bedouin areas, have 75% of the labor force that depends on employment in Israeli settlements and other public jobs.

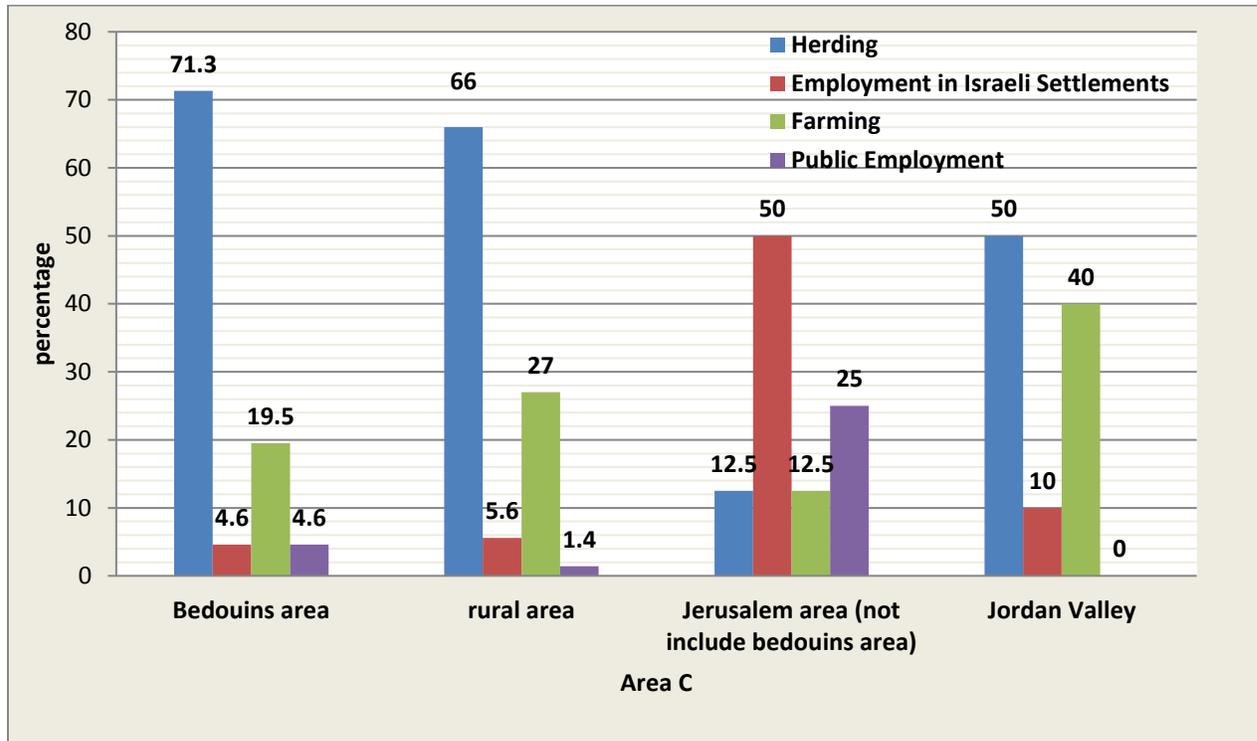


Figure (2.3) Palestinian types of occupations by clusters

Source: ARIJ, 2014. Village Profile and Needs Assessment in the West Bank Governorates- Database. Palestine.

Highlighting the case of Bedouin and rural herder communities, their traditional way of life is threatened as increasingly limited access to land, and lack of permits and water resources have eroded traditional livelihoods. Communities that have existed for decades, many of them before the designation of these areas, are unable to herd and farm under the restrictions; thus curtailing their productivity and ability to provide for their households. These regimes directly contribute to the poor living conditions confronting many Palestinian residents of Area C. For herders and farmers, livelihoods are undermined by the inability to construct animal shelters and agricultural infrastructure, along with restricted access to land, designated as military training zones and nature reserves. In addition, the inability to carry out legal construction has a direct impact on the provision of basic services as well as livelihoods; such as the provision of education and health services. For the international community, difficulties obtaining a building permit, including for very basic infrastructure projects, make for difficult attempts to provide basic humanitarian assistance to some of the most vulnerable communities in the West

¹⁹ Ibid.

The dependency ratio²⁰ within the Area C localities is 86.6, thus reflecting the high burden on the productive portion of the population²¹. This is particularly significant due to Palestine's very young population under the age of 15. With few economically active citizens and minimal job opportunities, communities are vulnerable to high rates of poverty and a poor quality of life. Poverty rates are found relatively high especially among Bedouins; with highest rate reaching up to 83.1% in Al Buweib, Khashem Adaraj (Al Hathaleen), and Om Adaraj (Arab al Ka'abneh), respectively (see Annex 1).

2.2.4 Status of Education

Education is considered a fundamental and basic human right, with additional conventions and rulings established to provide *entitlement* for access to such education²². According to the 1993 Oslo Agreement, Israel's control of Area C obligates it as an occupying power under the International Court of Justice's ruling to be responsible for education in this area²³. Nonetheless, educational facilities and services remain limited for communities in Area C.

Access to schools is a primary concern within Area C as many schools are far from residential areas, thus increasing travel time and costs²⁴. New academic buildings to meet population needs are prevented from being constructed without prior authorization from Israeli authorities. In 2011, Israeli authorities issued ten schools in partially or fully controlled Area C land with demolition or stop-work orders, thus directly impacting students' access to their right to education²⁵. Furthermore, there are over 542 Israeli controls (checkpoints, segregation points, gates, etc.) throughout the West Bank which restrict students' movement and access to school; delaying them from their classes, preventing students on some days from attending lessons, and causing them psychological duress (i.e. humiliation, fear)²⁶. This is exacerbated by problems which restrict their access to *quality* education including

²⁰ The "dependency ratio" is an age-population ratio of those who are not in the labour force (below 14 years, and above 65 years). It is used to measure the relative pressure on the productive population in the labour force.

²¹ PCBS. 2010. Population Census 2007. Ramallah. Palestine

²² This foundational right is based on the Universal Declaration of Human Rights (1948), which states in Article 26 (1): 'Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education should be made available on the basis of merit.'

²³ The ICJ ruling declares that "the State's obligations under the Covenant apply to all territories and populations under its effective control." Palestinian Centre for Human Rights (PCHR), 2010.

²⁴ PCHR, 2011. *Education Denied: Israel's Systematic violation of Palestinian Children's Right to Education*, pg 16.

²⁵ UNSC, Children and Armed Conflict: Report of the Secretary-General, A/66/782-S/2012/261, 26 April 2012, para 94

²⁶ OCHA, 2012. *West Bank Movement and Access Update*.

inadequate school infrastructure, unsafe or unhygienic facilities, and settler violence and harassment by soldiers²⁷.

Jerusalem area schools, in particular due to urban constraints, lack efficient basic services and have limited space for school classrooms. There is a strong need to rehabilitate and build new classrooms to cater to the under-resourced needs of a young population that has outgrown its confined space.

Residents throughout Area C have on average been able to access only a basic level of education, where 52% have attained elementary and preparatory education, 12% are illiterate, and 19% can only read and write. The remaining 17% have secondary to PhD qualifications. Table (2.2) below shows a comparison of post-secondary educational attainment by clusters²⁸. This data indicates that all the clusters are under-represented in attaining higher

Type of Locality	Post-secondary Educational Attainment (PCBS 2007) ²⁹
Bedouin	10.5%
Jerusalem	17.7%
Jordan Valley	11.9%
Rural Area	17.7%
West Bank	27.7%

educational qualifications as compared to the broader West Bank. Bedouin communities have the lowest level of post-secondary qualifications at 10.7%, and reflect the limited access and opportunities that rural communities have to pursue higher educational services.

Table (2.2): Palestinian post- secondary educational attainment by clusters

2.2.5 Food Security Status

Exposure to food insecurity risks is determined by the frequency and severity of natural and man-made shocks and by their socio-economic and geographical scope³⁰. The determinants of coping capacity include the levels of a household’s financial, human, physical, social, natural and political assets; the levels of its production, income and consumption; and its ability to diversify its income sources and consumption to mitigate the effects of the risks. Food security has been fluctuating in Palestine due to a combination of weak agricultural production and unstable economic conditions. While a diverse range and satisfactory quantity of food commodities are generally available in local markets, the local demand is highly dependent on imported food staples. Access to food therefore depends fundamentally on economic mobility³¹.

²⁷ PCHR, 2011, pg 16-17.

²⁸ Post-secondary educational attainment is determined as the proportion of the population over 10 years old who have attained Secondary, Associate Diploma, Bachelors, Higher Diploma, Master’s or Ph.D certification.

²⁹ PCBS. 2010. Population Census 2007. Ramallah. Palestine

³⁰ The Sphere Project, 2011

³¹ WFP/ARIJ. 2010. Socio-Economy and Food Security Atlas in the occupied Palestinian territory.

A total of 27% of Palestinian households or 1.6 million people are considered severely or moderately food insecure according to the latest Socio-Economic and Food Security survey (unpublished SEFSec 2014), with 47% of the people in the Gaza Strip and 16% of in the West Bank considered food insecure³². The food insecurity crisis in Palestine is characterized by persistent limited economic access to food and mainly the result of protracted conflict, with the occupation of the West Bank and the blockade of the Gaza Strip leading to high vulnerability to shocks, low resilience and persistently high humanitarian needs. The inadequate availability of financial resources coupled with restrictions on trade as well as access to natural resources (land, water and sea), is significantly impacting economic access to food for households, especially for farmers, herders, Bedouins and female-headed households as well as the unemployed, disabled and elderly.

When disaggregated by geographic zones, as defined by the Oslo Agreement (Areas A, B and C), the SEFSec results show an interesting pattern. In 2011, food insecurity levels were considerably higher in Area C than in Areas A/B, with a difference of 7% points. However, in 2012, this gap narrowed to an insignificant level as a result of food insecurity rising in Areas A/B and actually decreasing in Area C. Detailed analysis suggests that the improvement trend reported for Area C cannot be attributed to changes in assistance levels. Food insecurity among Area C households dropped from 24% in 2011 to 20% in 2012³³. During that period and specifically 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%. The breakdown by food insecurity levels shows that 22% of Areas A/B food insecure heads of households are employed by the PA, against only 7% in Area C³⁴. Food insecurity is decreasing in Area C, as household heads are accessing employment in Israel and settlements, while food insecurity is increasing in Areas A/B with a larger proportion of heads of households employed in the PA and thus more affected by the West Bank socioeconomic deterioration and public fiscal crisis.

However, during the results of the SEFSec 2014 shows that food insecurity increased dramatically in Area C with a 6% points increase since the year 2012; reaching up to 26% of households inhabiting Area C in the year 2014³⁵. Long standing restrictions on the movement of people and goods have severely undermined the living conditions in Area C and reduced households' access to livelihoods. Food insecurity in Area C is mainly driven by high rates of poverty resulting from unemployment, which is in part due to ongoing Israeli access and movement restrictions, as well as high prices for food and economic shocks.

³² Palestinian Food Security Sector: *Strengthening Humanitarian Response*. 2015 3rd quarter highlights.

³³ PCBS, WFP, FAO, UNRWA. 2012. Socio-Economic and Food Security Survey: West Bank and Gaza Strip.

³⁴ Ibid

³⁵ PCBS and Food Security sector Group. Summary of Preliminary Results of SEFSec 2013-2014

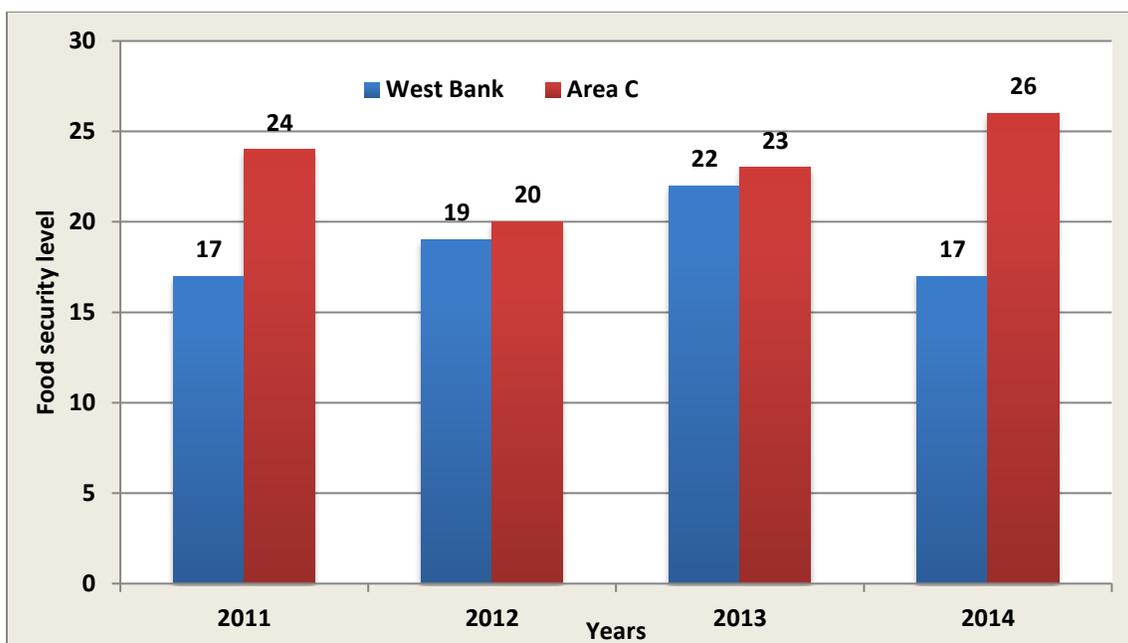


Figure (2.4): Food Insecurity levels – comparison between Area C and West Bank Region.

Source: (Socio-Economic and Food Security Survey (SEFSec survey), PCBS, WFP, FAO, UNRWA. 2010, 2011, 2012, 2013)

About 43% of the total population in Area C is less than 15 years old, while 3.0% of the population is 65 years and above³⁶. This is due to the high fertility rate and decline in child mortality. For 2007, the dependency ratio for the localities that are “totally” located within area (C) was 86.6 %³⁷. The aforementioned facts affect food insecurity levels among Area C inhabitants, since 50% of the food insecure in Palestine are children, 47% are adults and 3% are elderly for the year 2014³⁸.

The Key drivers for vulnerability in Area C are summarized as following:

- Prohibited development and expansion for built up area.
- Restricted access to basic services including health, education, water and sanitation.
- Controlled and restricted movement and access (Segregation wall, Israeli checkpoints, roadblocks, permit system etc.)
- Forced displacement and house demolition.
- Erosion of livelihoods and lack of economic opportunities and access to food.
- Threats to life, liberty and security.

³⁶ PCBS. 2010. Population Census 2007. Ramallah. Palestine

³⁷ Ibid

³⁸ PCBS and Food Security sector Group. Summary of Preliminary Results of SEFSec 2013-2014

2.2.5 Summary for Challenges Facing Communities of Area C

- 1) Less than 1% of Area C has been assigned for Palestinian development (available as an area where Palestinians can build without the risk that these buildings being demolished by the Israeli authorities); in contrast, 43% of the West Bank is allocated to settlement local and regional councils (this includes lands confiscated for settlement building and expansion purposes, together with settler roads and restrictions on Palestinian access to their lands around settlements).
- 2) Communities are located in firing zones or residing fully or partially in closed military zones are at direct risk of forced eviction and forcible transfer, repeated temporary evacuation due to military training exercises,
- 3) Most of the communities in Area C suffers from restricted access to basic services; increases their vulnerability and trigger their displacement. The denial of basic services like access to water have a devastating impact on community livelihoods and their ability to sustain themselves, particularly for farming or herding
- 4) Farmers cannot invest in agricultural productive assets due to the growing practice of targeting and dismantling any installations.
- 5) Isolation and territorial fragmentation among the different imposed administrative areas.
- 6) Most of the communities suffers from low educational attainment, where only 5.6% of total population attained post school education and only 10% attain high school certificate. This is condition is highly affected with the localities proximity to schools where only 43% of localities having their built area in Area C are in proximity of 1 km from a school.
- 7) Most of the localities suffers from limited access to health centres since only 18% of localities in Area C have a health clinic centre in its 1km proximity.
- 8) Most of the communities suffers from high unemployment and poverty rates reaching up to 20.3%³⁹ and 30.1% respectively in comparison to 17.7% and 19.4% in the West Bank area.
- 9) The World Bank has determined that restrictions on access and economic activity in Area C (the two-thirds of the PTs which remain under full Israeli control) cost the Palestinian economy US\$3.4 billion per year or about 35 per cent of its Gross Domestic Product.
- 10) The implementation of projects in the area is compromised in several ways. First, there is the major obstacle of the restrictions on construction, which limits the implementing organization capacity to deliver any type of infrastructure. It is, also, not always possible to plan around these restrictions because the application of Israeli policies is unsystematic and inconsistent. For example, new areas can be declared as closed for security, or construction is permitted in one area while newly-built infrastructure is demolished in a neighboring area. The restrictions on access for goods and staff causes unplanned delays to programme

³⁹ This average didn't include the localities that didn't show unemployment (unemployment rate =0).

implementation and raises the costs of inputs, labor, and the associated costs of administration. The absence of a clearly articulated PA policy towards the target areas and a felt lack of coordinated, proactive political support from the international community.

Area C	Unemployment Rate (%) (PCBS,2007)	Poverty Rate (%) (PCBS,2009)	Educational attainment-secondary and above (%) (PCBS,2007)	Food Insecurity (%) (WFP, UNRWA, 2014)	FAO, PCBS, (UNICEF, UNRWA,WFP, 2010)
Rural area	16.4	32.4	17.7	26	
Bedouins area	15.9	44.8	10.5	79	(UNICEF, UNRWA,WFP, 2010)
Jerusalem area	27.2	---	17.7	26	
Jordan Valley	2.9	30.4	11.9	26	
West Bank	17.7	19.4	27.7	19	

Table (2.3): Livelihood Conditions in Area C by cluster

2.2.5.1 Challenges that face Bedouins in Area C40

- High movement restrictions; inability to get a permit to cross checkpoints
- Denied right for development of basic infrastructure; 44% have no electricity.
- Limited access to range land; 85% is closed to Palestinians as a result of Israeli settlements, closed military areas and the barrier⁴¹
- Limited access to natural water resources; 91% from rainwater.
- Forced Displacement; 12% are forced to leave their land and relocate to another town on yearly basis.
- Struggling to meet their dietary needs; 51% have health problems.
- Falling deeper into poverty and debt; 62% of HHs expenditure spent on food, while 49% spent on food in WB.
- Rely on bought fodder and tanked water
- Continuous years of drought
- Limited access to services including health, education and transportation
 - Nearest Public transportation 5 Km
 - Nearest Clinic 8 Km
 - Nearest elementary school 6Km
 - Nearest maternal health center 12 Km

2.2.5.2 Challenges that face Rural Communities in Area C

- Low agriculture production as a result of Israeli restrictions especially on water resources, utilization of medium to heavy equipment and tools, and agricultural lands.
- Limited access to services including health, education, and social services.
- Denied right for development of basic infrastructure

⁴⁰ UNICEF, UNRWA,WFP, 2010. Food Security and Nutrition Survey of Herding Communities In Area C. Joint household Survey. Occupied Palestinian Territory.

⁴¹ Humanitarian Policy Group (HPG), 2009.

- Limited access to land; even those lands owned by villagers and within the village boundaries.

2.2.5.3 Challenges that face Jordan Valley communities in Area C

- Inefficient agriculture production system as a result to Israeli control and restriction; on access to transportation routes, to agricultural land and to water resources.
- Untapped touristic areas
- lack of schools and affordable transportation to and from schools⁴².
- Palestinian access to and from the Jordan Valley area is highly constrained.⁴³
- The majority of the Jordan Valley and Dead Sea area is off limits to Palestinian residential or community use and development.

2.2.5.4 Challenges that face Jerusalem Communities in Area C

- Restrictions on access to land, water and basic services,
- Restrictions on the movement of goods and people(including check-points, road closures, and the designation of land, roads and urban areas as ‘off-limits’ to Palestinians.)
- Refusal of permits to build, prohibitions on construction, and the risk of demolition where those prohibitions are ignored.
- The construction of the segregation wall, and the continued expansion of settlements.
- Israeli planning regime prevents both the natural growth of Palestinian villages, demolitions and the application of restrictive policies have also caused the forced displacement of thousands of Palestinians and decreased possibilities for commercial and industrial development.
- the right to live in East Jerusalem has been limited to Palestinians who were living there at that time; residency status is conditional and non-transferable.

2.2.6 Vulnerable Communities in Area C

A ranking system was utilized to come out with the most vulnerable localities among the 73 studied localities in area C; based on a set of measurable indicators including population number, unemployment rate, dependency ratio, poverty rate, education attainment, access to health clinics and schools, proximity to Israeli settlement, connection to electricity, water, and sewage networks (see Annex 1). Hence, the outcomes of the analysis shows that the top 13 localities in Area C of immediate need for support and interventions (see Map 2.2 and table 2.4 & 2.5) are the following:

⁴² Save the Children, Fact sheet: JORDAN VALLEY, 2009

⁴³ OCHA, Humanitarian Fact Sheet on the Jordan Valley and Dead Sea,2012

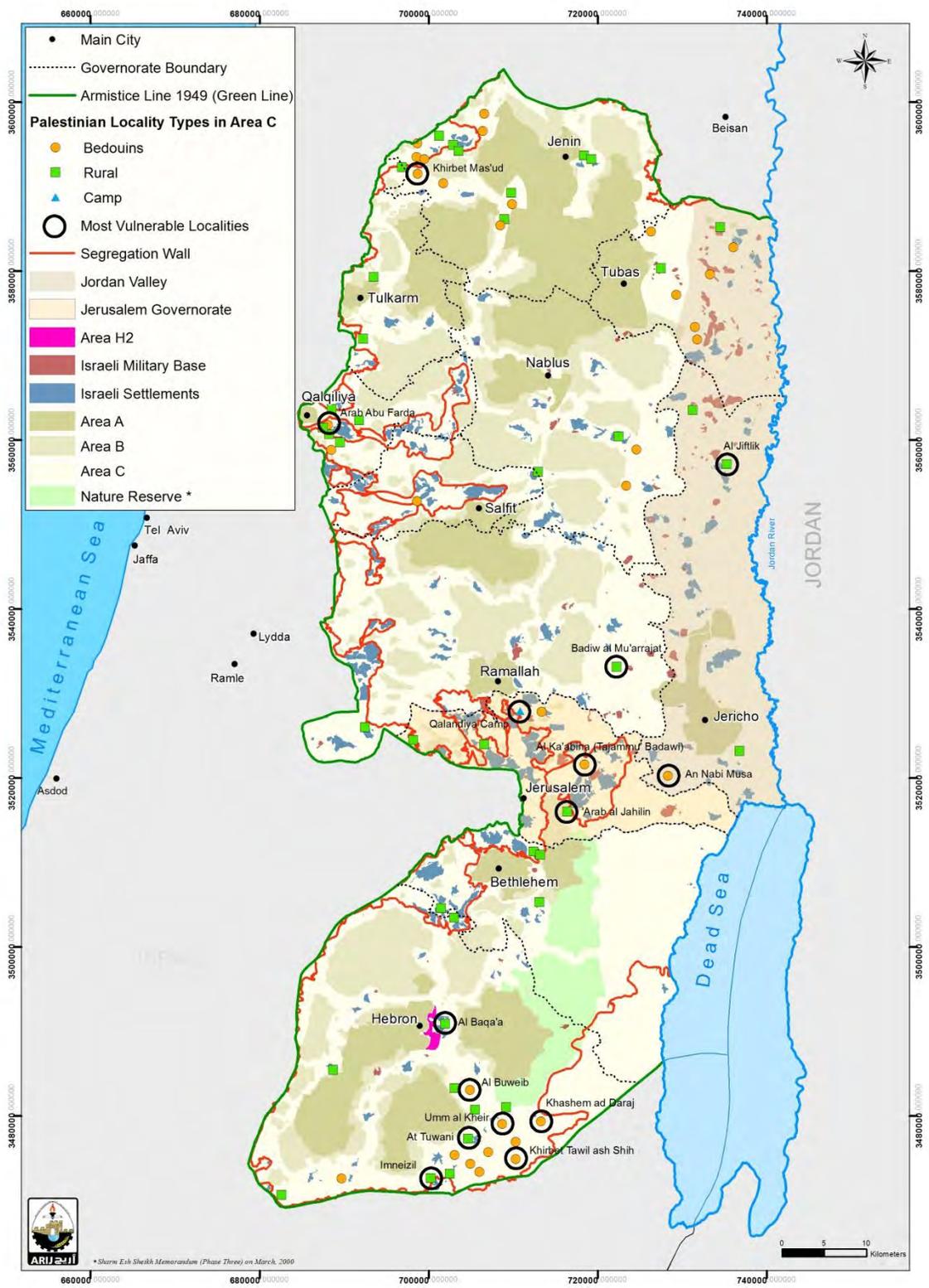
Name of Locality	Governorate	Population (PCBS 2015)	Unemployment Rate(PCBS 2007) (%)	Dependency Ratio (%) (PCBS 2007)	Poverty Rate(%) (PCBS 2009)	<i>Educational Attainment</i>
Al Baqa	Hebron	1,558	22.5	87.0	20.6	16.9
Al Buweib	Hebron	777	61.8	105.6	83.1	11.3
At Tawani	Hebron	417	37.5	109.2	53.2	4.6
Imneizil	Hebron	499	33	134.6	53.2	6.3
Khashem Adaraj	Hebron	775	13.8	117.2	83.1	3.1
Khirbet Asfai	Hebron	120	15	100	53.2	9.5
Khirbet Tawil ash Shih	Hebron	233	0	124	53.2	7.5
Mantiqat Shi'b al Batin	Hebron	175	11	75.6	53.2	8.6
Um al-Khair	Hebron	660	7.8	121.6	53.2	13.5
Khirbeh Mas'ud	Jenin	63	50.0	113.6	19.8	14.3
Al Jiftlik	Jericho	4,577	3.7	96.0	30.0	11.1
'Arab Abu Farda	Qalqilya	141	33.0	111.3	6.5	5.7
Badiw al Mu'arrajat	Ramallah	937	10.7	110.0	41.6	6.0

Table (2.4): Most Vulnerable Localities in Area C based on Ranking System⁴⁴

Name of Locality	<i>Access to Health Clinic</i>	<i>Access to Schools</i>	<i>Proximity to Israeli Settlements</i>	<i>Access to Electricity network</i>	<i>Access to Water network</i>	<i>Access to Sewage network</i>
Al Baqa	No	No	Yes	Yes	No	No
Al Buweib	Yes	Yes	No	Yes	Yes	No
At Tawani	Yes	Yes	Yes	Yes	Yes	No
Imneizil	No	Yes	Yes	No	No	No
Khashem Adaraj	No	No	No	Yes	Yes	No
Khirbet Asfai	No	No	No	No	No	No
Khirbet Tawil ash Shih	No	No	No	No	Yes	No
Mantiqat Shi'b al Batin	No	No	No	No	No	No
Um al-Khair	No	Yes	Yes	Yes	Yes	No
Khirbeh Mas'ud	No	No	No	Yes	Yes	No
Al Jiftlik	No	No	Yes	Yes	Yes	No
'Arab Abu Farda	No	No	Yes	Yes	Yes	No
Badiw al Mu'arrajat	No	No	No	No	No	No

Table (2.5): Most Vulnerable Localities in Area C based on a Ranking System/Access to Services

⁴⁴ See Annex 2.



Map (2): Most Vulnerable Localities in Area C based on a Ranking System

2.3 Opportunities for Economic Development in Area C

Area C is of vital importance to all Palestinians as it is critical to Palestinian economic development. Area C holds the bulk of Palestinian agricultural and grazing land and main aquifers. Moreover, because Area C is the only contiguous territory in the West Bank, and is therefore the bridge between all three areas, it is critical to the free movement, travel and transport of people and goods. Area C is fundamental to the geographic contiguity of the West Bank and economic viability of a Palestinian State and necessary for the development of public infrastructure and the needs of Palestinian communities, not only in Area C but in the whole West Bank. There is an emphasize on the need for all stakeholders (Palestinian National Authority, private sector, civil society and international organizations) to establish coordinated and coherent policies, strategies, mechanisms and interventions to achieve economic development in Area C.⁴⁵

The culture of planning in Area C needs to change to make it more integrated, strategic and participatory. Planning in Area C needs to be “people-centred”, and the focus should be more on development opportunities and challenges, phasing and implementation and less on rigid separation of land uses.

There are many possibilities for job creation within the private and public sector in Area C, should restrictions be lifted. The World Bank identifies potential direct, sector-specific benefits in the area of agriculture, stone mining and quarrying, construction, tourism, telecommunications and cosmetics⁴⁶. Research estimates suggest that the additional output from these sectors alone would amount to at least USD 2.2 billion per annum, which is a significant sum equivalent to 23 percent of the 2011 Palestinian GDP⁴⁷.

2.3.1 Solutions and Response Action for Bedouins:

- Provide Bedouins with access to sufficient safe water (e.g. providing water tanks, rehabilitate communal rainwater collection system, waste treatment techniques).
- Support initiatives to protect and develop household income generation through improving fodder cultivation, build their capacities in food production and processing.
- Prioritize assistance and the extension of agricultural services related to livestock as a driver of livelihood recovery.
- Expanded access to health care and education.
- Implement immunization and hygiene promotion especially among infant, young, and pregnant women.
- Where possible provide schools, clinics, transportation, solar energy, etc.
- Provide legal assistance to challenge demolitions of private property, forced displacement of Bedouin communities.

⁴⁵ UNCTAD/PRESS/PR/2014/35© *Original: English*

Occupation of the Palestinian Territory Jeopardizes economic Viability of Two-State Solution, UNCTAD Report

⁴⁶ World Bank. 2013. Area C and the Future of the Palestinian Economy.

⁴⁷ Ibid.

2.3.2 Solutions and Response Action for Rural Areas in Area C:

- Improve farmers' plant and animal productive capacity through opening access to better agriculture inputs, land reclamation, cultivation of fodder, suitable barracks, providing tools and equipment to harvest their products, etc.
- Build the farmers' capacities in the field of production, post harvesting and marketing techniques.
- Extension of agricultural services to increase the productivity of livestock.
- Open market channels and opportunities to market/export their products.
- Support to reinforce the capacity of authorities, civil society, and community based organizations.
- Service delivery through regular programs and/or targeted assistance.
- Provide legal assistance to challenge demolitions of private property, forced displacement of villages.
- Strengthening the capacity of the Ministry of Health to reach marginalized and difficult to access areas with an integrated package of health and nutrition services.
- Opening and Pavement of Roads, especially those essential to connect marginalized areas with urban centers.
- Building rainwater harvesting cisterns to access safe drinking water.
- Provide efficient public transportation network that reach marginalized areas.
- Support education services to meet marginalized rural area
- Connect with electricity and telecommunication networks
- Connect to water network, wastewater treatment.
- Providing Containers for Solid Waste Collection.

2.3.3 Solutions and Response Action for Jordan Valley communities in Area C:

- Open access to farmers to utilize available water resources.
- Provide efficient irrigation system
- Improve agriculture production competitiveness upon land reclamation and introduce appropriate agriculture techniques.
- Enhance production quality to suit exportation.
- Rehabilitate and improve breeding management and hygienic conditions of small ruminants.
- Promote cooperatives amongst farmers and other producers.
- Create job opportunities, income generation for communities through effective marketing of touristic attractions.

2.3.4 Solutions and Response Action for Jerusalem Communities in Area C:

- Support to Palestinian human rights organizations for raising awareness on rights, campaigning and providing legal representation with respect to family and residency rights, house demolitions and land cases, etc.
- Research and documentation; monitoring, advocacy and campaigning in relation to International Human Law (IHL), including representation in Israeli and international courts; and ensuring that IHL is mainstreamed in the programmes of humanitarian actors.

- humanitarian assistance include short-term employment and cash and food assistance through UNRWA, UNICEF adolescent centers, and ecumenical accompaniment.
- Restoration of historic buildings
- Improve health services among Arab communities.
- Higher volume of development funding than of humanitarian assistance allocated to East Jerusalem mainly in the field of cultural heritage, spatial planning, women and children.
- identify the specific problems to business development in each of these areas and to devise solutions to these problems
- Rehabilitating residential properties.

3. Challenges and Opportunities of sustainable management of Palestinian Nature Reserves

3.1 Background:

Biodiversity is an important element of the national heritage of Palestine and at the same time a structural part of the country's environmental sector. Since Palestine is part of the Mediterranean Biodiversity Hotspot, a center of plant endemism and a refuge of several vertebrate species that are facing multiple pressures in many other areas worldwide, its biodiversity is also part of the global natural heritage.

The PNA (Palestinian National Authority) is committed to meet its responsibility to conserve and to manage this resource in a sustainable way, in cooperation with Multilateral Environmental Agreements like the Convention on Biological Diversity, as well as international organizations like UNEP and IUCN, and national civil society organization. This is reflected in the high priority given to biodiversity conservation in the Palestinian Environmental Law (1999). The National Biodiversity Strategy and Action Plan for Palestine (PENa 1999) identified habitat loss as the key pressure on the valuable biodiversity of Palestine, and concluded that the development of a protected area system would be the most promising way of easing this pressure. This conclusion was re-enforced by a number of additional policy and legal documents of the PNA since, most notably the Assessment of Capacity Building Needs and Palestinian Priorities in Biodiversity (EQA 2003), and the draft Bylaw on Nature Protection, Nature Reserves, Protected Areas and National Parks, which is currently pending approval by the PNA.

Well governed and effectively managed protected areas are a proven method for safeguarding both habitats and populations of species and for delivering important ecosystem services⁴⁸. The West Bank nature reserves (NRs) harbour several species that are listed as critically endangered or endangered on the global IUCN Red List of Endangered Species (See table 3.1)⁴⁹. Applying the precautionary principle, KBA (Key Biodiversity Areas) analysis, numbers⁵⁰ of nature reserves are identified as KBA, which highlights the outstanding biodiversity value represented by the Palestinian reserves⁵¹. Thousands of people are dependent at least partially on resources and ecosystem services provided by the NRs. This underlines the importance of these areas as part of the environmental infrastructure of Palestine. Of those of priority NRs for the initiation of protected area management, in addition to its identification as Palestinian KBAs are the following areas: Jerusalem

⁴⁸ Ervin, J, et al. 2010. Making Protected Areas Relevant: A guide to integrating protected areas into wider landscapes, seascapes and sectoral plans and strategies. CBD Technical Series No. 44.

⁴⁹ Ali-Shtayeh, M. S. & Jamous, R. M. (2002). Red list of threatened plants of the West Bank and Gaza Strip and role of botanic gardens in their conservation. *Biodiversity and Environmental Sciences Studies* 2: 1 - 47.

⁵⁰ Seven NRs correspond to KBA Category I, two NRs of Category II and eight sites of KBA Category 4.

⁵¹ IUCN, 2010. The Palestine Forest and Natural Resource Assessment. Palestine.

Wilderness, Wadi Zarqa Al-Elwi, Shoubash, Jabal-Alkabeer, Tammoun, Al-Hashmee, Um Al-Saffa, E'in Darra, Wadi Al Dilb, Sirris, and Suba⁵².

The West Bank can be differentiated into four broad geographical zones which are arranged from east to west (Map x). Following the semi-coastal plain in the north-western corner of the area are the Semi-Coastal Region, the Central Highlands (mountain plateau), the Eastern Slopes and the Jordan Valley. The easternmost zone of the West Bank is the Jordan Valley. The transitions between the central highlands and the slopes to both directions are gradual. Most of the designated nature reserves according to the NSP are situated in the Eastern Slopes region (52.9% of total NR area), followed by Central Highlands (34.5%), Jordan Valley (11.9%) and Semi-Coastal Region (0.7%). The location of nature reserves within the four geographical zones determines the precipitation that they receive (Map 3), the habitat types that dominate there and other environmental characteristics.

⁵² IUCN, 2010. The Palestine Forest and Natural Resource Assessment. Palestine.



Map (3): Nature Reserves according to NSP across the Agro-ecological Zones within Area C

3.2 Existing Nature Reserves System

The first nature reserves in Palestine were designated under the British Mandate 1917-1948. Additional NRs were declared under Israeli occupation, currently a total of 699,395 dunums Israeli designated nature reserves were counted by ARIJ⁵³; forming 12.35% of the West Bank region see Map (4).

According to the National Spatial Plan (NSP) set by Palestinian partner ministries⁵⁴, approximately 9% of the West Bank Region is designated nature reserve; forming 511,578 dunums⁵⁵. However, as a consequence of the Oslo Accords I and II (1994/95) and the Wye River Agreement (1998), only nature reserves that are at least partly contained within Areas A and B were handed over to the PNA (Map 4). The total area of NRs handed to the PNA is 83,762 dunums forming 16.4% of total NRs area in the West Bank region. Hence, only 48,534 dunums of nature reserves located in Area A and 35,228 dunums in Area B. Only a small proportion of these areas are entirely contained with Area A, since this area mainly consists of urban areas. Of the most famous and of high biodiversity value in Area A is Sirris, and in Area B is Deir Ammar, which forms 1,150 and 3,399 dunums respectively (see Annex 1). These are not the largest but the ones that entirely confined to Area A or Area B. These reserves are under the mandate of the Palestinian Authority. It is worth noting that nature reserves that are partly situated in Area C such as AL Mughair, Suba, Tammoun and others are also partly managed by the PNA ministries, and the management personnel employed by the Israeli administration are engaged to coordinate the NR management.

However, most of the protected areas are located within Area C⁵⁶, where control continues to be under the exclusive authority of Israel. According to the NSP, 81.6% of the nature reserves in the West Bank region are located in Area C⁵⁷; forming 418,570 dunums. Noting that the largest nature reserves in Area C are Ein Fashkha-Ein Jedi Cluster and Fasayil nature reserve; forming 93,035 and 86,750 dunums respectively see Map (4). All nature reserves located in area C are not accessible by the Palestinians; not even for management and conservation purposes. It is also worth noting that 36.2% of the designated nature reserves overlap with the Israeli settlements and 39.5% overlap with the closed military area and

⁵³ The Israeli Trail Committee, 2007. Topographic Hiking Maps – Northern Judean desert.

⁵⁴ The National Spatial Planning is a comprehensive scheme that takes into consideration the spatial dimension in directing development and the geographical distribution for economic and social activities. This plan was set by partner ministries including: Ministry of Planning, Ministry of National Economic, Ministry of Local Government, Ministry of Public works and Housing, Ministry of Transportation, Ministry of Tourism and Antiquities, and Ministry of Agriculture.

⁵⁵ These areas overlap the nature reserves area declared by the Israel occupation with a difference of 187, 817 dunums for the Israeli nature reserves.

⁵⁶ **Area C** was defined under the Oslo Accords as “areas of the West Bank outside Areas A and B”. Israel was to retain civil and security control on an interim basis. While the 1995 Interim Agreement called for the gradual transfer of power and responsibility in the sphere of planning and zoning in Area C to move from the Israeli Civil Administration (ICA) to the Palestinian Authority (PA), this transfer was never implemented. As a result, any Area C construction, whether a private home, an animal shelter or a donor-funded infrastructure project, still requires the approval of the ICA, which is under the authority of the Israeli Ministry of Defense. Area C comprises of 3,459,000 dunums (61% of Total West Bank Area) (according to the ARIJ (The Applied Research Institute – Jerusalem) - GIS (Geographic Information System) and RS (Remote Sensing) Department, 2015. West Bank Land Use/ Land Cover analysis 2012. Bethlehem. Palestine.

⁵⁷ Excluding the 3% of the West Bank that were supposed to be handed over to the PA to be set aside as a Green Area/Nature Reserve in Wye River Memorandum of 1998

bases⁵⁸. Such utilizations within the nature reserves confirm that their declaration doesn't respond to the international definition of a nature reserve mainly the call for biodiversity conservation.

The segregation zones⁵⁹ (eastern and western) along the western and eastern parts of the West Bank within Area C are another concern for conservationists, which isolate and/or fragment approximately 68.5% of the natural reserves in the West Bank⁶⁰. In view of the size of land confiscated from the West Bank, and the commensurately greater development pressures, the Segregation Zone is causing major challenges in conserving representative ecosystems, landscapes and habitat linkages especially between protect areas, and forests. The Segregation Zone poses a great threat to the biodiversity in the West Bank, due to the negative impacts on the movement of terrestrial fauna by adding further to the fragmentation of ecosystems and habitats in both Israel and the West Bank and by cutting the natural ecological corridors. Not forgetting the effect of segregation wall erected on Palestinian lands by the Israeli occupation which cut off number of nature reserves such as Um Al Riham NR. These nature reserves lack any access of management personnel to nature reserves; the same happens to those situated within the Israeli settlements in the West Bank region such as Deir Dibwan NR.

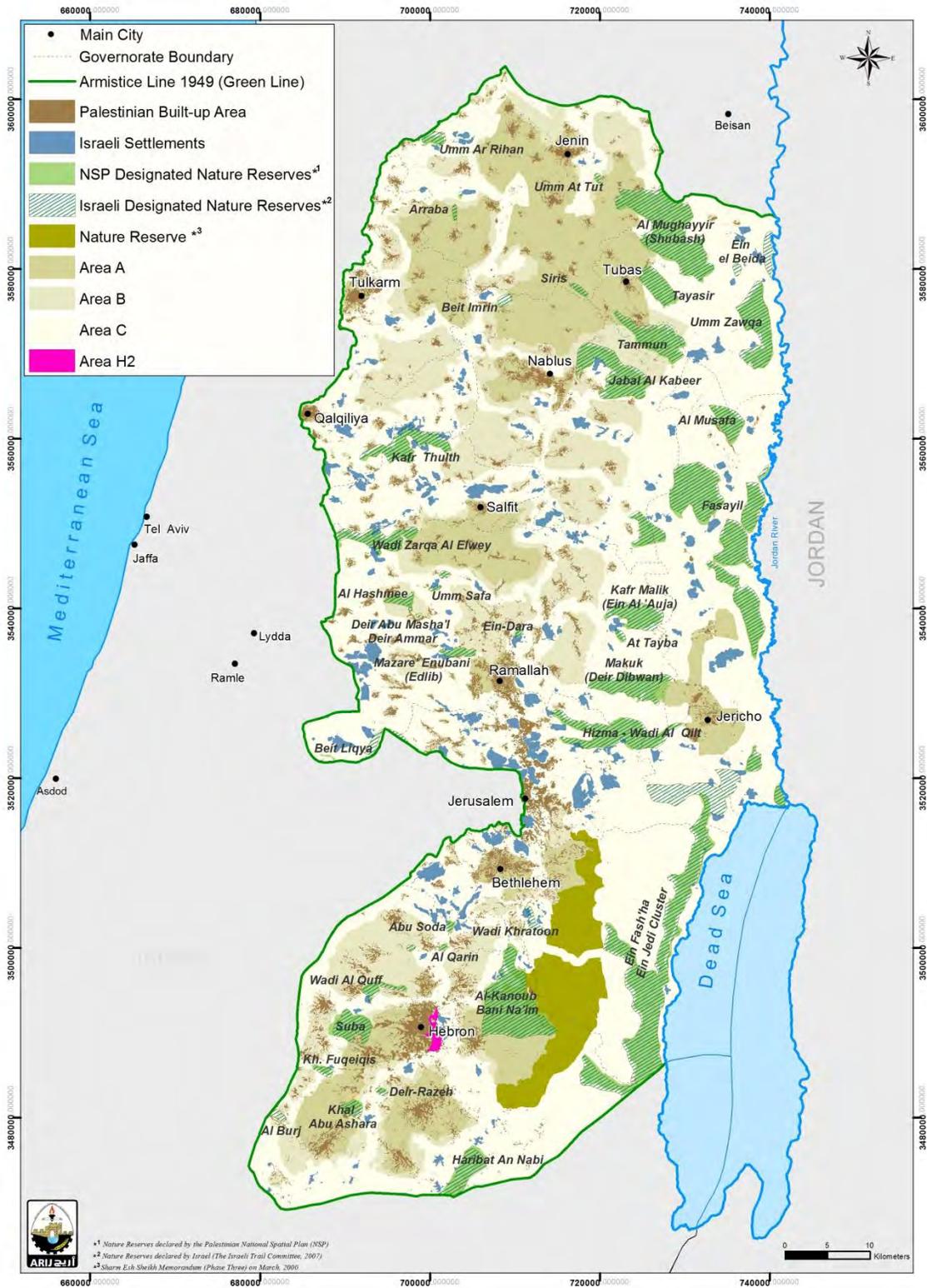
It is worth noting that under the Wye River Memorandum of 1998, land reserves, amounting to approximately 3% of the West Bank (of which AL Kanoub – Bani Naim nature reserve is part of; forming 2% of total area of NRs in the West Bank region), were supposed to be handed over to the PA to be set aside as a Green Area/Nature Reserve, with the condition that no changes to the land (i.e. no construction) were allowed. To date, the PA has not been allowed to utilize this area.

It should be noted that the declared NRs were not designed as a consistent, representative NR system or ecological network; instead, it represents a corporation of areas that were designated at various stages by various administrations, and for various purposes. Neither the concept for the integration of individual NRs into a functional ecological network (Geneva Initiative, 2003), nor the Pan-European Ecological Network, are reflected in the current set of NRs. While the abovementioned network concept has also aimed at an integration of the Palestinian NR system. This is especially with the ongoing construction of the “separation wall” by the Israeli occupation which counteracts such efforts, by reducing ecological connectivity. Hence the current set of designated nature reserves that is under Palestinian control or not is the result of a historical development that was not planned with biodiversity conservation in mind, and is hence not fully functional as a conservation tool.

⁵⁸ ARIJ (The Applied Research Institute – Jerusalem) - GIS (Geographic Information System) and RS (Remote Sensing) Department, 2015. West Bank Land Use/ Land Cover analysis 2012. Bethlehem. Palestine.

⁵⁹ As sourced from ARIJ- GIS Land Use/Land Cover analysis 2008; The eastern segregation zone is an area of 1664 km square (only 5% of which under Palestinian control) located along the eastern terrain of the West Bank that stretch for 200 km from south to north, most of which declared as closed military area, and is of limit for Palestinians. Western Segregation wall is an area of 774 km located along western terrain of the West Bank.

⁶⁰ ARIJ (The Applied Research Institute – Jerusalem) - GIS (Geographic Information System) and RS (Remote Sensing) Department, 2015. West Bank Land Use/ Land Cover analysis 2012. Bethlehem. Palestine.



Map (4): Designated Palestinian Nature Reserves by Geo-political Region

3.3 Typology and Biodiversity

Although ecological and environmental surveys have not been completed for most of the natural reserves in the West Bank, data on water, land cover, flora and fauna, land uses and others were collected. This allowed the classification of natural reserves into wetlands (those containing springs, rivers, streams, etc) and Dry-land reserves (man-made forest, mixed and natural forest, scrubland and open spaces with little vegetation).

The Jordan River natural reserves Fasayil and Ein el Bayda are River Wetland Reserves. The banks of the Jordan River are dominated by *Populus spp.* and *Tamarix spp.* They adorn the bare and desolate surroundings with an evergreen meandering strip. In the shade of these trees one often encounters several species including *Lycium spp.*, *Atriplex spp.*, *Asparagus spp.* and others⁶¹. These plants can tolerate fairly high soluble salt contents, which used to accumulate in summer on the dried up river sides.

Several Saline Wetlands extend along the Western Coastal line of the Dead Sea. Classified as Saline springs wetlands, they are fed by brackish water discharges from of Ein Fash'ha, Ein-Turba and Ein Ghwair. These Wetland Salines are abundant with halophytic vegetation belongs to *Phragmites spp.*, the *Tamarix spp.*, *Suaeda spp.* and the *Salsola spp.*

Seven natural reserves are located along the Wadi Beds of several major streams. These are mostly streams with storm water runoff in winter months. Al Mughayir, Tayasir, El Musafeh, Deir Dibwan, Kafr Malik, Wadi El-Bidan, Wadi Qilt and Jisir Al-Malaqi are wetland natural reserves with the river beds fed by running streams and in some cases also fresh water springs. These are all located in the Eastern Slopes and in the Jordan valley. These are occupied by several plant classes. The most common trees are *Acacia spp.*, *Tamarix spp.*, *Zizyphus spp.* among others. Hydrophilic vegetation is also found in these Wadis. The following plant alliances can be found *Suaeda spp.* and *Zygophyllum spp.*

Deir Ballut, Deir Abu Masha'l and Mazare' En Nubani contain fresh water springs and are located along the Wadi Beds of major water streams of the western slopes of the West Bank. These are relatively small natural reserve occupied by Mediterranean vegetation on Rocky and Stony Ground of the *Verthemia spp.*

The natural reserves of Um ET Tut, Sirris and Reihan Forest are dominated by natural Mediterranean Wood and Shrub forests. The natural forests in the Central Highlands are represented by Aleppo Pine and Evergreen Oak Maquis. Main tree and shrub species are *Quercus spp.*, *Ceratonia spp.*, *Pistacia spp.* Species of open *garigue* and *batha* are *Sarcopoterium spp.*, *Cistus spp.*, *Phlomis spp.* and *Thymus spp.* The Semi-coastal region has some specific species in addition to those occurring in the Central Highlands, like *Euphorbia spp.*, *Thymelaeaspp.*, *Lupinus spp.*

Kafr Thulth, Um Safa Forest, Beit Leqia, Al-Qaran, Abu Soda, Khal Abu Ashara, Al-Alamieh, El-Quff forest, Um Safa Forest and Suba Forest are nature reserves predominantly

⁶¹ Zohari, M., 1962. Plant Life of Palestine, Israel, and Jordan. New York.

occupied with Planted forests. The main species are *Pinus spp.*, *Eucalyptus spp.*, *Cupressus spp.*, and *Acacia spp.*

The “Bethlehem and Hebron Natural Reserve”/ Jerusalem Wilderness declared by the Palestinian National Authority is a Desert Dry Land Reserve. The ephemeral streams that pass through this natural reserve collect relatively small volumes of runoff water. Most of the vegetation in this desert are annual herbs and dwarf shrubs.

It is worth noting that the Palestinian Nature Reserves are supporting the growth of endangered and endemic species in Palestine see table (3.2).

Endangered species	Potentially Rare	Very Rare	Endemic	Vulnerable to habitat loss	Very Vulnerable to habitat loss
<i>Mentha aquatica</i>	x				x
<i>Onosma gigantea</i>		x		x	
<i>Kickxia judaica</i>		x			x
<i>Agrostemma githago</i>		x			x
<i>Elaeagnus angustifolia</i>		x		x	
<i>Rosa phoenicia</i>	x				x
<i>Sedum litorium</i>		x		x	
<i>Hypericum hircinum</i>		x			x
<i>Bupleurum brevicaule</i>		x		x	
<i>Turgenia latifolia</i>		x		x	
<i>Linaria triphylla</i>		x		x	
<i>Stachys zoharyana</i>		x	x		
<i>Ornithogalum fuscescens</i>		x		x	
<i>Iris atrofusca</i>	x		x		
<i>Epipactis veratrifolia</i>		x			x
<i>Equisetum ramosissimum</i>		x			x
<i>Glycyrrhiza glabra</i>	x				x
<i>Lysimachia dubia</i>		x			x
<i>Bunium paucifolium</i>		x		x	
<i>Verbascum galilaenm</i>	x			x	
<i>Stachys zoharyana</i>		x	x		
<i>Salvia syriaca</i>	x			x	
<i>Hydrocotyle ranunculoides</i>		x			x
<i>Phlomis pungens</i>		x		x	
<i>Lachnophyllum noeantum</i>		x		x	
<i>Bellevalia longipes</i>	x			x	

<i>Lupinus micranthus</i>	x				x
<i>Scrophularia hierochuntina</i>	x			x	
<i>Medicago italica</i>		x			x
<i>Lupinus micranthus</i>		x			x
<i>Kickxia judaica</i>		x			x

Source: IUCN, 2010. *The Palestine Forest and Natural Resource Assessment. Palestine.*

Table (3.2): List of endangered Species in the Palestinian Nature Reserves

3.4 Nature Reserves Legislation, Policies and Institutional set up

The Oslo I and II accords provide framework for the creation of institutional structures by the PNA, such as the Palestinian Legislative Council (PLC) as well as civil departments and ministries for many sectors; including the environment portfolio. As a result of the Oslo I and II accords, moreover, the Environmental Quality and several other ministries have been formed (the year 1996)⁶². Some of these ministries and authorities have environment- related tasks. Accordingly, ministries were requested to prepare subjects and elements of relevant policies, strategies and laws falling within their authorities.

Environmental legislation, policies and planning are the responsibility of the Palestinian Environmental Quality Authority (EQA) in cooperation with other relevant ministerial bodies such as the Ministry of Planning and Ministry of Agriculture. Accordingly, EQA issued the Environmental Law in 1999, (finalized in 2003), the Palestinian Environmental Strategy (1999), and the National Biodiversity Strategy and Action Plan for Palestine (1999). The Ministry of Agriculture (MoA) also finalized Agricultural law (2003), including forestry and rangeland sectors and the Palestinian Agro-biodiversity strategy, (2005). The Palestinian National Biodiversity and Agro-biodiversity strategies and action plans are considered the basic legislations for the Biodiversity in Palestine.

The main legal basis for the designation and management of nature reserves by the PNA is the Palestinian Environmental Law (1999); specifically Chapter 5 which deals with the protection of natural, historical and archaeological areas. Article (40) of this Chapter tasks the Environmental Quality Authority of the PNA to “...prescribe bases and standards for the protection of natural reserves and national parks, monitor and declare them, and establish and designate the national parks and supervise them.” Article (44) postulates that “It shall be forbidden for any person to conduct activities or perform any action that may cause damage to the natural reserves, forests, public parks or archaeological sites, or affect the esthetical aspects of such areas”. The Palestinian Environmental Law (1999) lacks more detailed guidance on how the Environmental Quality Authority should fulfill its obligations as stated in Article (40). This is left to a bylaw or several bylaws. A Bylaw on Nature Protection, Nature Reserves, Protected Areas and National Parks has indeed been drafted by the Environmental Quality Authority. This bylaw, development of which was coordinated closely with the Ministry of Agriculture, is currently being considered for approval by the PNA.

⁶² <http://www.mena.gov.ps>

The opportunity of strengthening the basis for nature reserves designation and management that is offered by the introduction of this new legislation could be used more effectively. This could be achieved through implementation of international guidance on NRs (e.g. IUCN Categories, IUCN management planning and protected area system planning guidelines). The limited implementation of the NR related policy is partly caused by funding constraints and partly by a policy environment that prioritizes development field other than biodiversity conservation.

The responsibility for the development of the NR system of Palestine is shared between the Environmental Quality Authority (EQA) and the Ministry of Agriculture (MoA) of the PNA. The EQA is responsible for the development of legislation and policy for the NR system, in the context of overall environmental policy development in Palestine. The Ministry of Agriculture is mainly responsible for the practical implementation of biodiversity policy on the ground. The MoA has regional Departments in the different governorates of Palestine, which also have a responsible staff for protected areas and forests. The rangers who are responsible for guarding individual NRs report to the relevant departments of the MoA. They are not only responsible for one NR but typically for several NRs and/or forest areas.

3.5 Guiding Principles for the selection and management of nature reserves

Protected areas should be integrated into the wider land- and seascape, and relevant sectors, bearing in mind the importance of complementarity and spatial configuration. In doing so, the Ecosystem Approach should be applied taking into account ecological connectivity and the concept of ecological networks, including connectivity for migratory species (through, for example, “fly-ways” for migratory birds). Protected areas should also be established and managed in close collaboration with, and through equitable processes that recognize and respect the rights of indigenous and local communities, and vulnerable populations.⁴⁷ (The In-depth review of the implementation of the programme of work on protected areas (UNEP/CBD/SBSTTA/14/5) identified, inter alia, slow progress in the implementation of the Programme, and particularly of Element 2 concerning governance, participation, equity, and benefit-sharing.

These communities should be fully engaged in governing and managing protected areas according to their rights, knowledge, capacities and institutions, should equitably share in the benefits arising from protected areas and should not bear inequitable costs. IUCN'S Guidelines for applying protected area management categories recognizes four broad types of governance of protected areas, any of which can be associated with any management objective. These categories include governance by government, shared governance, private governance, and governance by indigenous peoples and local communities. These cut across all categories of protected areas. Other effective area based conservation measures may also include restrictions on activities that impact on biodiversity, which would allow for the safeguarding of sites in areas beyond national jurisdiction in a manner consistent with the jurisdictional scope of the Convention as contained in Article 4. Work towards this target could also be linked to the more specific targets under the programme of work on protected areas and the Global Strategy for Plant Conservation. The World Parks Congress is a further resource which can be drawn upon when taking actions towards this target. Protected areas could be complemented by limits to processes and activities harmful to biodiversity that are

under the jurisdiction or control of Parties, including in areas beyond national jurisdiction, while ensuring that such limits do not infringe on the rights of indigenous or local communities, or vulnerable populations.

3.6 Designated Nature Reserves in the Geo-political Area C in the West Bank Region

Since the onset of the Israeli occupation in 1967, the Government of Israel has implemented a range of measures that restrict Palestinians' use of land and resources in Palestine. One of the primary ways Israel has done this has been through the application of restrictive planning and zoning regimes to Palestinian communities. Such restrictions continue to be prevalent in the over 61 percent of the West Bank that was classified as Area C in the Oslo accords of the 1990s⁶³.

Area C, which comprises almost two third of the total West Bank Area, is largely rural. Hence most of the West Bank's natural resources are there; and the area has economic potential in respect of eco-tourism, agriculture, climate change, and stone. The area also displays a wide variation in elevation, geology, climate leading to a broad range of habitats, which is reflected in a high diversity of plants and animals⁶⁴. Diverse types of agro-ecological regions exist in Area C including the Central High lands forming 44.4% of Area C, Eastern slopes region forming 37.2%, Jordan Valley forming 10.3%, and semi coastal region forming 8.1%. The variation in the area's topography, climatic conditions and soil types is manifested in the topographic range difference that takes place between -421 to 1008 meters above sea level, temperatures range between 15°C and 24°C and rain fall amounts range between 49 mm and 716 mm. In addition to its characterized rich soil types where Terra Rossa and Brown Rendzina soil type is dominant⁶⁵.

The Central highlands region, which compromises the largest area in Area C, enjoys the highest numbers of floral families. The region is highly significant in respect to varietal richness. Up to 105 families are known to grow in this region; with its high rainfall amounts, mountainous topography and Mediterranean climate makes the region of special importance to the Plant Genetic Resources (PGRs)⁶⁶. Such conditions are supporting and nurturing the existence of diverse biological diversity including flora and fauna; especially encountered in the forested areas where rich floral associations exist.

⁶³ **Area C** was defined under the Oslo Accords as “areas of the West Bank outside Areas A and B”. Israel was to retain civil and security control on an interim basis. While the 1995 Interim Agreement called for the gradual transfer of power and responsibility in the sphere of planning and zoning in Area C to move from the Israeli Civil Administration (ICA) to the Palestinian Authority (PA), this transfer was never implemented. As a result, any Area C construction, whether a private home, an animal shelter or a donor-funded infrastructure project, still requires the approval of the ICA, which is under the authority of the Israeli Ministry of Defense. Area C comprises of 3,459,000 dunums (according to the GIS&RS department ARIJ (The Applied Research Institute – Jerusalem)

⁶⁴ ARIJ (Applied Research Institute – Jerusalem) – BFS (Biodiversity and Food Security) Department, 2007, Palestinian Flora Survey Desk Study. Bethlehem. West Bank.

⁶⁵ ARIJ (The Applied Research Institute – Jerusalem) - GIS (Geographic Information System) and RS (Remote Sensing) Department, 2015. West Bank Land Use/ Land Cover analysis 2012. Bethlehem. West Bank.

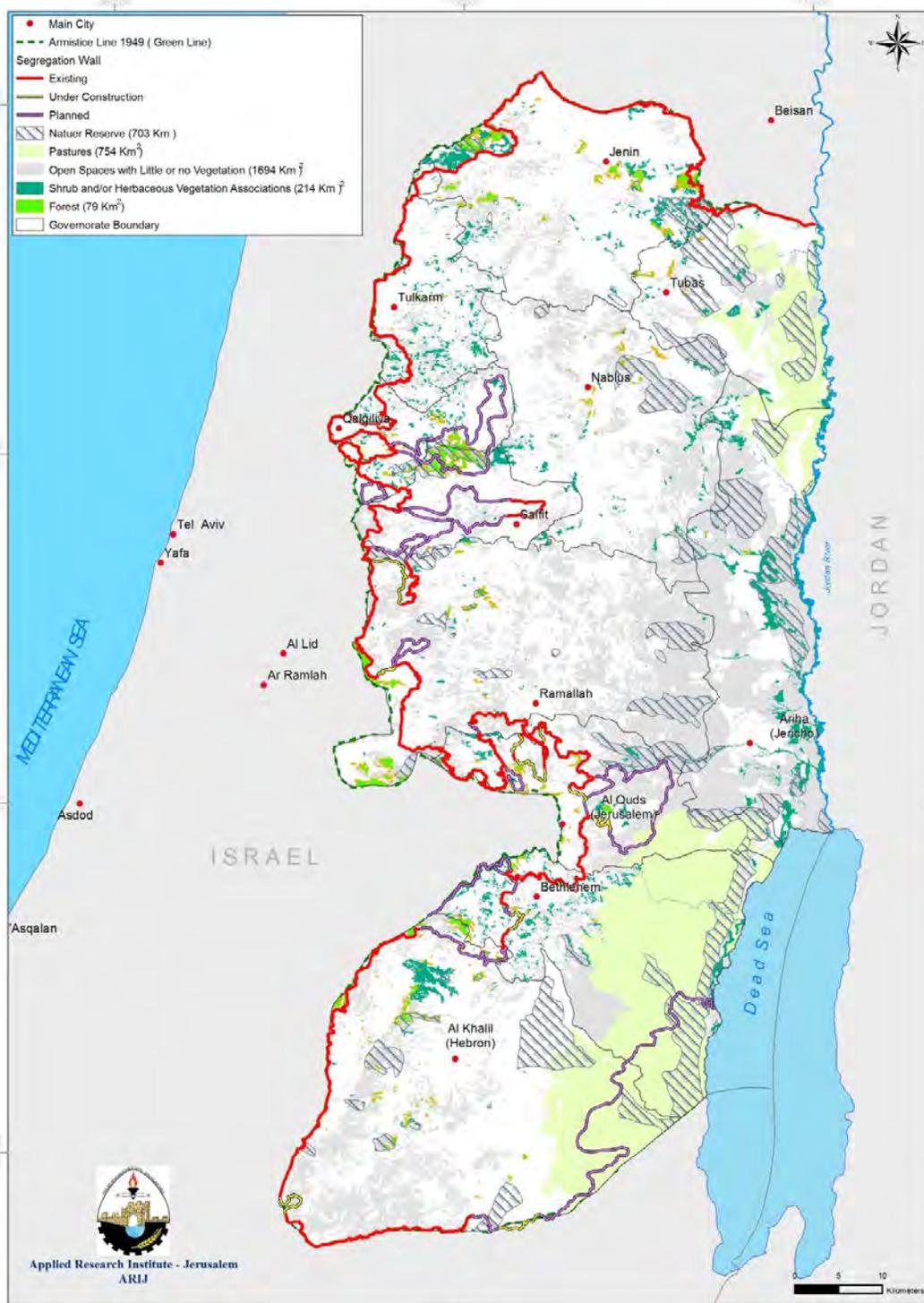
⁶⁶ ARIJ (Applied Research Institute – Jerusalem) – BFS (Biodiversity and Food Security) Department, 2007, Palestinian Flora Survey Desk Study. Bethlehem. West Bank.

According to the LULC analysis done in the year 2012 by the GIS and Remote Sensing department at ARIJ, 63,365 dunums of area C is classified as forested area (forming 80.9% of total forested area in the West Bank region) and 814,070 dunums are classified as rangelands⁶⁷ (forming 79.1% of total rangeland area in the West Bank region)⁶⁸. According to the Palestinian National Spatial Plan (NSP)⁶⁹, 418,570 dunums of area C are classified as nature reserves (forming 81.8% of total nature reserves in the West Bank region). Noting that the largest nature reserves in Area C are Ein Fashkha-Ein Jedi Cluster and Fasayil nature reserve; forming 93,035 and 86,750 dunums respectively see Map (5) and Map (6).

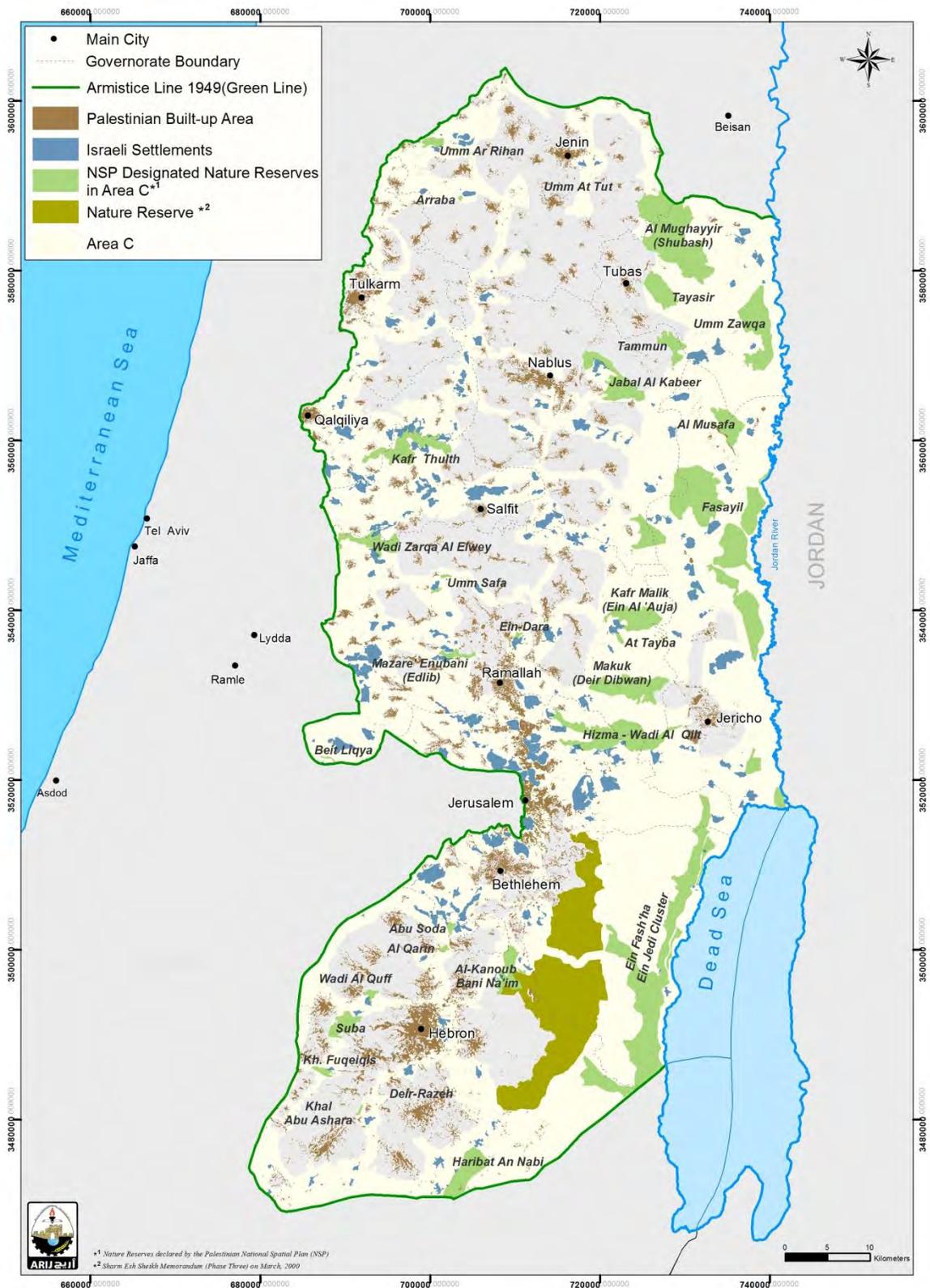
⁶⁷ Rangelands in this context represent the area of shrubs and/or herbaceous vegetation associations and pastures according to CORINE Level II classification.

⁶⁸ ARIJ (The Applied Research Institute – Jerusalem) - GIS (Geographic Information System) and RS (Remote Sensing) Department, 2015. West Bank Land Use/ Land Cover analysis 2012. Bethlehem. West Bank.

⁶⁹ The National Spatial Planning is a comprehensive scheme that takes into consideration the spatial dimension in directing development and the geographical distribution for economical and social activities. This plan was set in the year 2012, by partner ministries including: Ministry of Planning, Ministry of National Economic, Ministry of Local Government, Ministry of Public works and Housing, Ministry of Transportation, Ministry of Tourism and Antiquities, and Ministry of Agriculture.



Map (5): Forests, Nature Reserves, Shrubs and/or Herbaceous Vegetation in the West Bank



Map (6): Nature Reserves according to National Spatial Plan (NSP) in Area C

Thus, areas characterized of rich biological diversity are mainly located in Area C but is there real conservation measures taken by the Israeli occupation toward these areas that the Palestinians cannot access? Are all declared nature reserves candidates to be initiated as nature reserves? What about the contribution of these reserves to the representativeness of the overall nature reserves system regarding eco-zones and high conservation value species that occur in the West bank? From nature conservation point of view, commitment to nature conservation in Palestine is by no means a recent development. During the British Mandate, several areas, in particular in the eastern slopes region of the West Bank, were declared natural reserves or parks. The British Mandate declared natural reserves and national parks to the Nature Reserves Authority and the National Parks Authority⁷⁰. Following its occupation of the West Bank and Gaza in 1967, Israel transferred control over the British Mandate declared natural reserves and national parks to the Nature Reserves Authority and the National Parks Authority; respectively, and declared several other natural reserves and national parks. These represented a fraction (22.8%) of the Registered State Land. In 1998, the Israeli occupation enacted the Nature Reserves Law (NRL), for declaring nature reserves⁷¹, marine protected areas and national parks and for listing protected natural assets.

However, it is worth noting that as of 1971, Israel prohibited all forestry activities and closed forest nurseries in most governorates of the West Bank. The only nursery left functioning was Wadi Al-Quff Nursery in the Hebron governorate, but its potential was reduced to only 10,000 tree seedlings per year. Since then, both types of natural and human-made forests were exposed to destruction perpetrated by both Israelis and Palestinians. Large areas of these forests have been confiscated by Israel and declared as closed military areas, military bases or used for building settlements. As a result, the natural forest area has diminished by 59% of the 1970 one⁷². Adding to that more than 234,288 trees of mainly olives and fruit trees were uprooted during the last 10 years⁷³; as a result of the Israeli occupation practices in the West Bank region⁷⁴.

Approximately 12% of Area C is designated nature reserves adopted by PNA in its NSP forming 418,570 dunums; these areas overlaps the nature reserves area declared by the Israel occupation with a difference of 183,121 dunums for the Israeli nature reserves. Up to 17.4%

⁷⁰ ARIJ (Applied Research Institute-Jerusalem), 2007. Status of the Environment in the oPt. Chapter 10: Biodiversity. Bethlehem. West Bank.

⁷¹ Israel's National Parks and Nature Reserves Act of 1963 defines a nature reserve as "an area where are preserved animal life, plant life, earth, caves or water, which have a scientific or educational significance, from unwanted changes in their appearance, in their biological composition or in their development, and which the Minister of the Interior, through the recommendation of the Minister of Agriculture or subsequent to consultation with him, declared in the protocols that it is a nature reserve."

⁷² Ministry of Agriculture - Forestry Department, 2006. Ramallah. Palestine

⁷³ Since the year 2005 until May 2015

⁷⁴ARIJ (Applied Research Institute-Jerusalem) – UM (Urbanization Monitoring) Department, 2015. Database and field work done for "Monitoring Israeli activities in the oPt" project funded by the EU.

of Area C is Israeli designated nature reserves⁷⁵. The main differences between both areas are some expansions on the NSP nature reserves. Except for some reserves of separate entities; examples of the nature reserves that are declared by Israel as a separate entity were not included in the NSP are Al Burj, Wadi Khraaton, Beit Leqia, Beit Imrin, and Ein El Bayda (forming 2.2% of Israeli declared nature reserves area in Area C)⁷⁶. At the end all these nature reserves located in Area C (both Israel declared or adopted by NSP) are not accessible by the Palestinians see Map (7).

It is worth noting that under the Wye River Memorandum of 1998, land reserves, amounting to approximately three percent of the West Bank, were supposed to be handed over to the PA to be set aside as a Green Area/Nature Reserve, with the condition that no changes to the land (i.e. no construction) were allowed. To date, the PA has not been allowed to utilize this area.

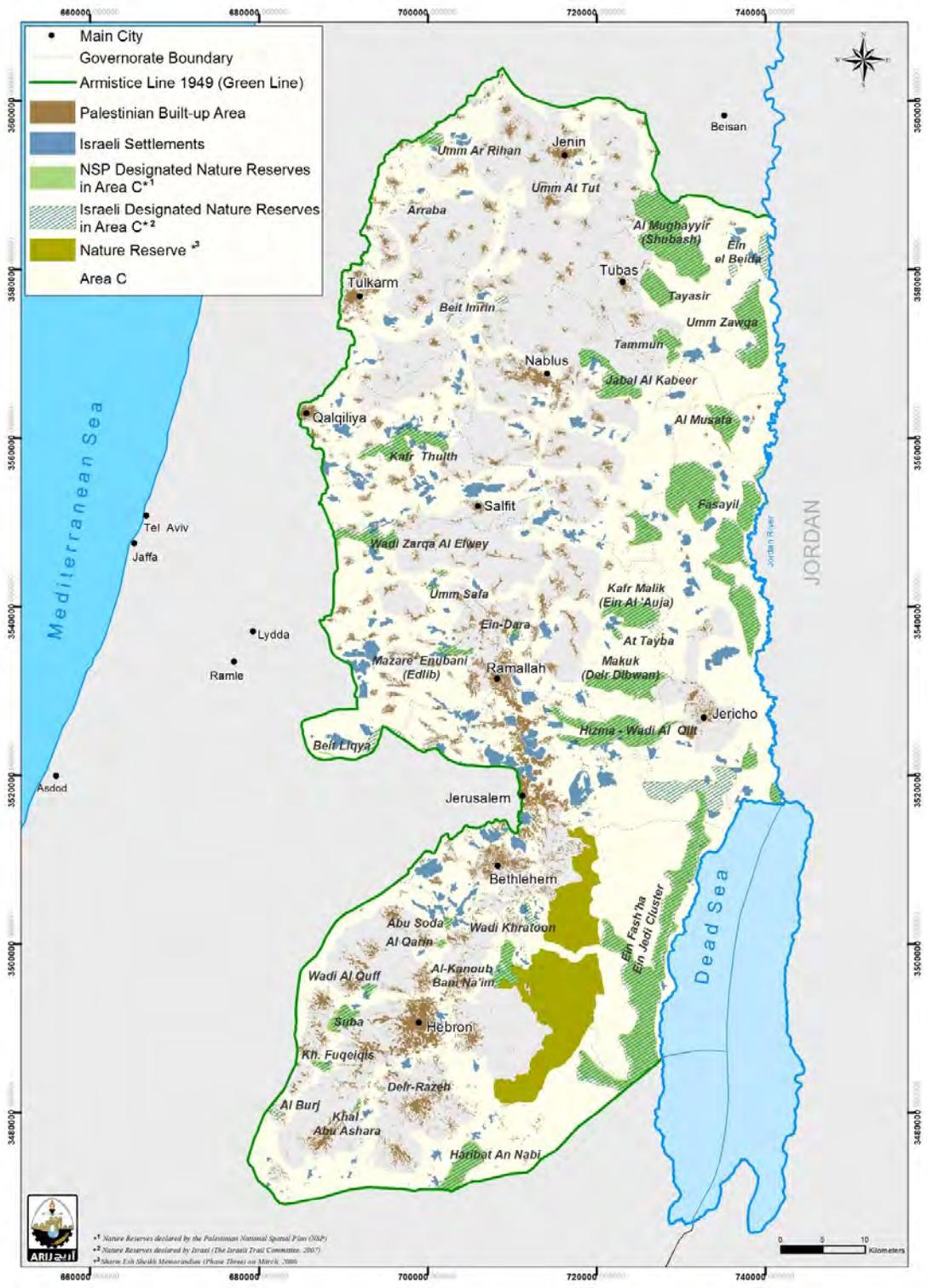
3.7 Constraints related to Palestinian NR system development

Several features related to the designated nature reserves confirm that these areas are part of the planning regime applied by the Israeli occupation in Area C. 86% of the Israeli designated nature reserves in the West Bank region are located in Area C. The reserves are distributed mostly over the Eastern Slopes and the Jordan Valley of the West Bank and are not thus representative of the phyto-geographic regions and agro-ecological zones observed in the West Bank. Up to 58.5% of the designated nature reserves in Area C exist in the Eastern Slopes region which is the most arid ecosystem in the West Bank region. The Eastern Slopes is known as a fragile ecosystem with mainly rangeland species (Map (3)) Nature Reserves according to NSP across the Agro-ecological Zones within Area C and Map (8). Only 26.5% of forested areas are located within the declared Nature reserves in Area C noting that the forested areas are the richest area in biological diversity and the most supporting habitat⁷⁷.

⁷⁵ The Israeli Trail Committee, 2007. Topographic Hiking Maps – Northern Judean desert.

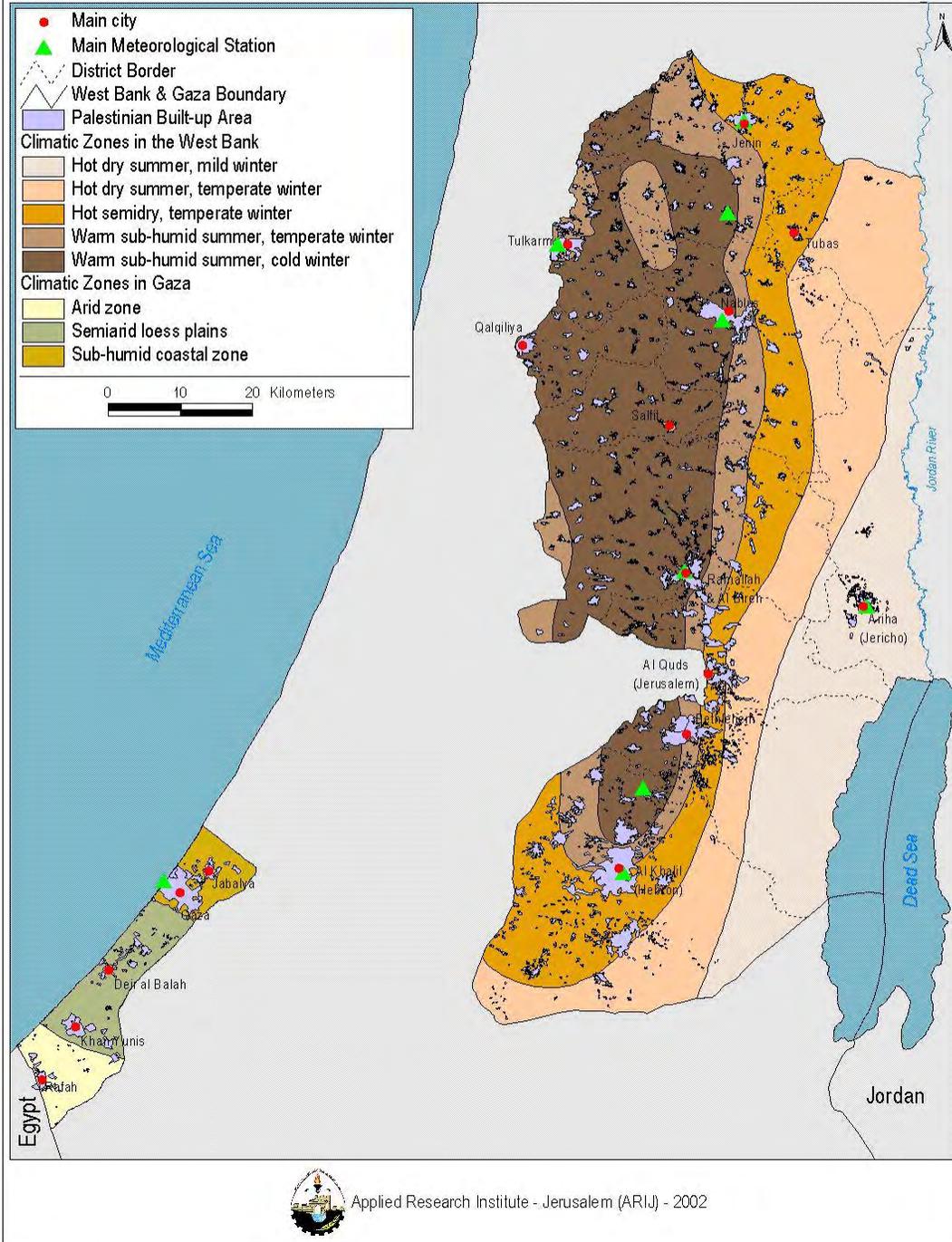
⁷⁶ On the West Bank level, approximately 9% of the West Bank Region is designated nature reserve forming 511,578 dunums, in which Palestinian development and /or management is prohibited. It is worth noting that the Israeli declared nature reserves form 12.35% of the West Bank region with a difference of 187,817 dunums from the NSP declared nature reserves area.

⁷⁷ ARIJ (The Applied Research Institute – Jerusalem) - GIS (Geographic Information System) and RS (Remote Sensing) Department, 2015. West Bank Land Use/ Land Cover analysis 2012. Bethlehem. West Bank.



Map (7): National Spatial Plan (NSP) Nature Reserves and the Israeli Declared Nature Reserves in Area C

Climatic Zones in the Palestinian Territories



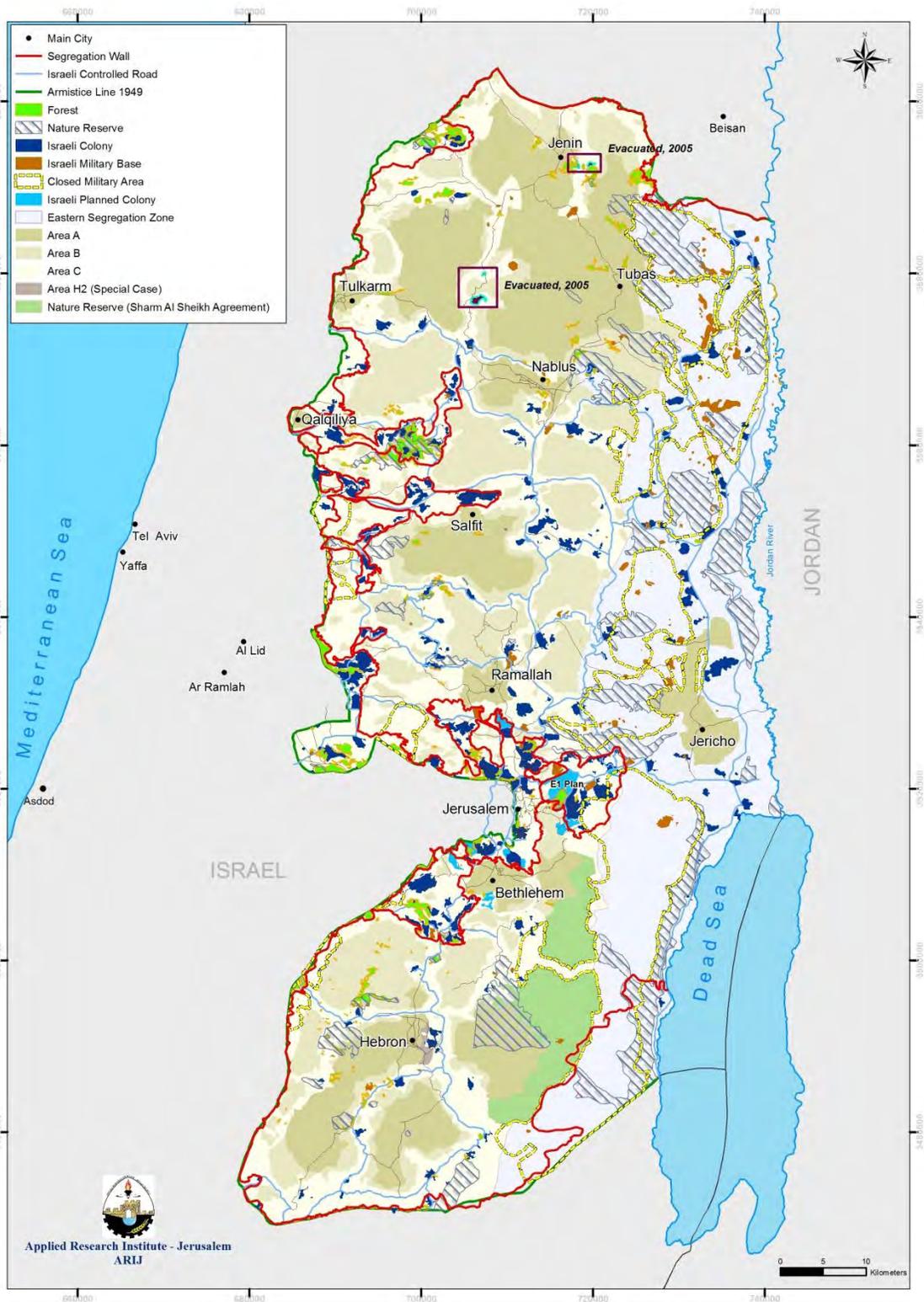
Map (8): Climatic zones in the West Bank region

Only short strip of the Jordan Valley ecosystem are declared nature reserves, comprising 11.9% of the declared nature reserves in the West Bank region⁷⁸; although the Jordan River Banks decorate the bare and desolate surroundings with an evergreen meandering strip and are populated with very rich biological diversity. It is also important to note that the biological diversity and the landscape structure in the declared natural reserves of the Jordan River have not been conserved as the lands are planted with land mines and the ecosystem is deprived of the minimum water requirements necessary to maintain key ecological processes.

Most surprising that up to 39.5% of the designated natural reserves overlaps the Israeli military bases and Israeli declared closed military areas. The later are used as military training ground and serve as firing zone. The movement of military vehicles in these grounds is a serious threat for the fragile ecosystem of the eastern slopes of the West Bank. In addition, up to 36.2% of the nature reserves overlap with the Israeli settlement designated areas. Up to 10 outposts exist within the borders of the designated nature reserves⁷⁹; causing changes in the topography, natural stream flow routing, loss of Plant genetic resources and increased soil erosion. This also creates management constraints; for example, there is no safe access for management personnel to Tayyasir nature reserves in Tubas Governorate because the area is used for military training by the occupying Israeli forces. See Map (9).

⁷⁸ ARIJ (The Applied Research Institute – Jerusalem) - GIS (Geographic Information System) and RS (Remote Sensing) Department, 2015. West Bank Land Use/ Land Cover analysis 2012. Bethlehem. West Bank.

⁷⁹ ARIJ (The Applied Research Institute – Jerusalem) - GIS (Geographic Information System) and RS (Remote Sensing) Department, 2015. West Bank Land Use/ Land Cover analysis 2012. Bethlehem. West Bank.



Map (9): Overlap between Forest, Natural Reserves and Israeli Activities across the Geopolitical Zones of the West Bank

Such utilization within the borders of the nature reserves doesn't respond to the international definition of a nature reserve mainly the call for biodiversity conservation. Accordingly, human influence and economic activities must be limited and often strictly regulated within the nature reserves. Most logging, hunting, agriculture, mining, or human settlements are banned. Such areas also need to be well connected, well managed, and well financed⁸⁰. The Aichi Biodiversity targets⁸¹ for the 2011-2020 period calls for: Strategic goal C: Target 11 *“By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.”* and Strategic goal B: Target 5 *“By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.”* Noting that it is also well known that the Community engagement in conservation is a key tenet of conservation; it helps support societal backing for wild areas and species. This is also not taken into consideration since Palestinians, which are the local and indigenous people of Area C have no access to these nature reserves and to larger areas in area C.

All above confirms several authors argue that the selection of the natural reserves by the Israeli occupation was not based on scientific reasons but on political reasons; taking control of land and designating areas off limits to Palestinian use. Thus, Area C is rich in natural resources, but it remains under full Israeli control; which effectively prevents the Palestinian people from using or managing their own natural resources⁸².

3.8 Opportunities for Effective NR System Development

Hence, to better explore the potential benefits of nature reserves, it is important to note that nature reserves are important tools for the conservation of biological diversity and are cornerstones of sustainable development strategies. Aside from their environmental benefits, they can also generate significant economic resources if they are well managed. The biodiversity benefits and ecosystem services that protected areas provide can create investment opportunities and employment.

Protected areas are economic engines. They provide for life's jobs and livelihoods as a traditional destination for the global tourism industry. Outdoor equipment industries have sprung up and are critical to regional economies. Significant employment is dependent on parks and protected areas. At the same time these areas protect resources of immense economic value such as water and fisheries. The pharmaceutical industry has benefited

⁸⁰ World Wide Views on Biodiversity, 2012. Information Booklet for Citizens. Copyright: The Danish Board of Technology. (<http://biodiversity.wvviews.org/>)

⁸¹ In decision X/2, the tenth meeting of the Conference of the Parties for the Biological Diversity convention, held from 18 to 29 October 2010, in Nagoya, Aichi Prefecture, Japan, adopted a revised and updated Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets, for the 2011-2020 period. This plan provides an overarching framework on biodiversity, not only for the biodiversity-related conventions, but for the entire United Nations system and all other partners engaged in biodiversity management and policy development.

⁸² UNCTAD/PRESS/PR/2014/035, Geneva, Switzerland, (02 September 2014)- (<http://unctad.org/en/pages/PressRelease.aspx?OriginalVersionID=204>)

greatly from the genetic diversity of species and safeguarding species in protected areas will ensure the possibility of discovery of future medicines⁸³.

It is now well established in academic literature and in broad international policy frameworks that there are both practical and ethical reasons for protected areas and other conservation initiatives to endeavor to contribute to poverty reduction. “Biodiversity should be conserved both for its value as a local livelihoods resource and as a national and global public good”⁸⁴. Moreover, with the increasing advocacy for and recognition of indigenous and local communities’ rights it becomes very difficult in any democratic country to justify approaches for managing protected areas which do not take those rights into account.⁸⁵

In order to increase the economic and social benefits of the nature reserves and protected areas for local and neighboring communities, it is important that the Palestinian Authority assume its responsibilities in managing the natural reserves in the West Bank, in addition, the Oslo II interim agreements in relation to the transfer of power and responsibilities of natural reserves and Area C to the Palestinian authority should be respected. Upon the previous achievement, an effective legal framework for the management of natural reserves should be established; taking into consideration that the lack of integrated environmental policy, power and responsibilities for the protection of wildlife inside and outside the natural reserves would render any wildlife protection policy ineffective. The main objective of managing natural reserves should always be to protect the areas’ unique and characteristic animal, plant and mineral forms from any undesirable changes in their appearance, biological composition or evolution.

The Israeli designated nature reserves that were adopted by the NSP should be reassessed by the Palestinian Authorities, from different aspects and in a scientific approach before declaring them as Palestinian nature reserve (or become part of the NSP) taking into consideration the biodiversity components, biodiversity value, socio-economic value, vulnerability, the ecosystems’ balances, the needed conservation measures; in a compatible manner with the related international frameworks such the Aichi targets, Strategic Plan for Biodiversity 2011-2020, Global Biodiversity Outlook 4 (GBOs), Strategic Development Goals (SDGs), Protected Planet Report, the Promise of Sydney 2014, the Human Dependency on Nature Framework (HDN), the global IUCN Red List of Threatened Species and others. Only those nature reserves that have a real biological and ecological value and compatible with international frameworks should be declared as Palestinian Nature Reserves or Protected Areas. Management plans also need to be developed for each nature reserve once experts and decision makers agree on the status of the nature reserve and confirm its declaration and initiation through joint and participatory approach with relevant stakeholders.

It is worth indicating that up to 22 protected areas were selected as candidate nature reserves by IUCN/ROWA in the year 2010 using international best practice methodologies including

⁸³The Secretariat of the Convention on Biological Diversity. 2008. Protected Areas in Today’s World: Their Values and Benefits for the Welfare of the Planet. CBD Technical Series No. 36. ISBN: 92-9225-082-5

⁸⁴ World Parks Congress, Durban 2003, Rec. 5.29.

⁸⁵ Scherl, L.M. 2005 Protected Areas and Local and Indigenous Communities. In McNeely, J.A. (ed.). *Friends for life: New Partnerships in Support of Protected Areas*, pp. 101-112. IUCN, Gland, Switzerland.

Gap Analysis for Key Biodiversity Areas (KBA analysis) and parts of the Rapid Appraisal and Prioritization of Protected Areas Management (RAPPAM) tools. Of those candidate nature reserves the following are located totally or partially in Area C: E'in Dara, Jabal Al Kabeer, Al Mughayyir (Shubash), Tayasir, Tammun, Umm At Tut, Wadi Al Dilib, Wadi Al Qilt, Ein Al 'Auja, Wadi Zarqa Al Elwey, Al Qarin, Deir Razeh, Deir Ammar, Sheikh Zeyd, Suba, Umm Safa, Bani Na'im (Jerusalem Wilderness), and Wadi Al Quff. These nature reserves are of diverse habitats including: (1) natural Mediterranean Wood and Shrub Forests represented by Aleppo Pine and Evergreen Oak Maquis, (2) Carob and Lentisk Maquis, savannoid Mediterranean vegetation (3) garrigue, semi-steppe bathas, and steppe vegetation (3) desert vegetation near the Jordan valley and Dead Sea.

The mentioned nature reserves in Area C are found of significant global and national biodiversity value; since 16 NRs were considered as KBA (Key Biodiversity Area)⁸⁶ based on their contribution to the conservation of species of global conservation value⁸⁷, as reflected in the global IUCN Red List of Threatened Species (IUCN 2009)⁸⁸ (Table (3.3)).

In addition to the KBA trigger species, a more general assessment of the biodiversity value according to national prioritization schemes, the conservation priority for nationally red-listed plant species. For this analysis, it was found that Bani Na'im (Jerusalem Wilderness), Jabal Al Kabeer, Tammun, Suba, and Ein El 'Auja had the highest scores for plant conservation value⁸⁹, while Jerusalem Wilderness, Wadi Zarqa Al Elwey, Ein Al 'Auja, Jabal Al Kabeer and Tammun had the highest scores for animal conservation value⁹⁰ (Table 3.1). According to all scores collected the Jerusalem wilderness, Ein Al 'Auja, Wadi El Zarqa Al Elwey and Wadi El Qilt had highest scores for their biodiversity value, in general.

⁸⁶ As a general rule, a site needs to occupy at least 5% of the global range or accommodate at least 5% of the global population of a species that is classified as vulnerable, endangered or critically endangered in the IUCN Red List, in order to qualify as a KBA. There are some exceptions and additional criteria to this rule but they do not apply to West Bank populations.

⁸⁷ Langhammer, P. F., Bakarr, M. I., Bennun, L. A., et al. (2007). Identification and Gap Analysis of Key Biodiversity Areas: Targets for Comprehensive Protected Area Systems. Gland,

Switzerland: IUCN.

⁸⁸ Of the KBA trigger species are four animal species (*Hyla heinzsteinitzi*, *Acanthodactylus beershebensis*, *Chalcides guentheri*, and *Telescopus hoogstraali*) and two plant species (*Iris atrofusca* and *Stachys zoharyana*).

⁸⁹ Plant species occurring in nature reserves were scored on a scale from one to four, according to the following scheme: very rare - 1 point; endemic to historic Palestine - 1 point; vulnerable to habitat loss - 1 point; very vulnerable to habitat loss: - 2 points.

⁹⁰ For animal species the scores were based on the highest IUCN threat category given to it in either the national or the international Red List (data deficient, near-threatened or vulnerable – 1 point; endangered - 2 points; critically endangered or “extinct” – 3 points).

Nature Reserves in Area C	Sum Conservation Priority Species for KBA trigger species	High Conservation Value Plant Score	High Conservation Value Animal Score	Key Biodiversity Area category ²⁵
Ein Dara	3	6	17	1
Jabal-Al kabeer	2	16	36	2
Al Mughayyir (Shubash)	3	9	29	2
Tammun	2	10	35	4
Tayyasir	1	6	28	4
Umm-Al Tut	1	3	12	4
Wadi Al-dilb (Edlib)	4	3	21	1
Wadi Zarqa Al-Elwey	5	7	44	1
Al-Qarin	1	5	8	4
Deir Razeh	1	0	11	4
Suba	1	12	11	4
Umm Safa	2	3	12	4
Wadi Al-Quff	0	1	31	-
Wadi Al-Qilt	6	6	31	1
Sheikh Zeyd	1	0	21	4
Ein El 'Auja	5	11	40	1
Bani Na'im (Jerusalem Wilderness)	8	16	49	1

Source: IUCN, 2010

Table (3.2): The biodiversity value scores of selected nature reserves in Area C

The main threats that face these nature reserves are mainly habitat destruction, drought, fires, grazing and logging (table (3.3)). There are important additional factors that threaten biodiversity throughout Palestinian nature reserves such as over-collection, hunting, excavations, waste, alien and invasive species, pests and diseases and use of pesticides. The identified threats and pressures should be taken into consideration for designing an appropriate management regime for each nature reserve. These pressures/threats require a different set of interventions to minimize its negative effect on the biodiversity of the nature reserves. Together with the biodiversity value and manageability information (as describe earlier) this can be used to design individual action plans for each nature reserve.

Nature Reserve	Main Pressures and Threats facing Nature Reserves in Area C
Ein Dara	Habitat destruction and drought
Jabal-Al kabeer	Fires and grazing
Al Mughayyir (Shubash)	Grazing and habitat destruction
Tammun	Grazing and habitat destruction
Tayyasir	Habitat destruction and grazing
Umm Al Tut	Logging and grazing

Wadi Al-dilb	Grazing and habitat destruction
Wadi Zarqa Al-Elwey	Habitat destruction and logging
Al-Qarin	Excavations and waste
Deir Razeh	Grazing, habitat destruction and logging
Suba	Logging and grazing
Umm Safa	Logging and fires
Wadi Al-Quff	Grazing and fires
Wadi El-Qilt	Grazing and drought
Sheikh Zeyd	Logging, habitat destruction and over collection
Ein El 'Auja	Grazing, logging and hunting
Bani Na'im (Jerusalem Wilderness)	Grazing, logging and hunting

Table (3.3): Main pressures and threats that face nature reserves in Area C

Of the proposed management plan for the selected nature reserves in Area C is describe per nature reserve in table (3.4).

Nature Reserve	Proposed Management Activities**
Ein Dara	Need for a water management scheme that is consistent with the conservation of species with high biodiversity value
Jabal-Al kabeer	Establishment of functional nature reserve for conservation purposes for species with high biodiversity value and management of its resources.
Al Mughayyir (Shubash)*	Establishment of a medium to low strict conservation area that reconciles sustainable natural resource use with biodiversity conservation. Management of both Shoubash and Um at Tut NRS areas in conjunction, based on a NR format that allows a combination of biodiversity conservation and sustainable natural resource use with strong community involvement (e.g. UNESCO Biosphere Reserve) would increase the effectiveness of both NRs.
Tammun	Establishment of a sustainable grazing regime at the site.
Tayyasir	Should the Israeli military use of the reserve cease, then there would still be a need to remove unexploded ordinance in order to make this NR manageable
Um Al Tut*	A participatory planning process involving all stakeholders that build at least part of their livelihood on resources from the area will be a first prerequisite for initiation of a management planning process. A potential perspective of sustainable tourism and nature education development, in the context of developing the area as a NR. Another favourable factor for establishing a NR at Um-Altutt is the proximity of Shoubash NR. Management of both areas in conjunction, based on a PA format that allows a combination of biodiversity conservation and sustainable natural resource use with strong community involvement (e.g. UNESCO Biosphere Reserve) would increase the effectiveness of both NRs.
Wadi Al-dilb	First step towards improving the preconditions for establishing NR at the site would be engaging the principal land owners and users of the site. Without the cooperation of landowners, land users (particularly the Bedouins who currently live at the site) and Awqaf, it will be impossible to establish a functional NR at Wadi Al-Dilb.
Wadi Zarqa Al-Elwey *	The more undisturbed areas on the flanks of the wadi could offer better preconditions for NR establishment, and at the same time contain a richer

	biodiversity. Concentration on these areas; potentially in conjunction with a clear and clearly enforced ban on further conversions and a more biodiversity friendly management of the olive groves, e.g. regarding pesticide use) is the way for developing the NR
Al-Qarin	It is a small NR surrounded by intensely used agricultural land, with easy access and multiple existing pressures, the preconditions for effective PA management at Al Qarrin are generally not favourable. But the reserve is entirely government-owned, access from the road could be limited quite easily, and there is already a ranger responsible for the area who could become involved in immediate measures to reactivate Al-Qarrin as a NR.
Deir Razeh	Deir Razeh is in private land ownership and the few remaining natural woodland and shrub fragments in this medium sized NR are closely entwined with agricultural land. The area is crisscrossed with tracks and roads. All these factors are unfavourable preconditions for the establishment of a functional NR at Deir Razeh.
Suba*	Although it is privately owned, the NR is among the best preserved Mediterranean oak forest fragments in the southern West Bank. Therefore, the responsible past management by the private landowner(s) makes the preconditions for effective PA management at the site more favourable. Of major interventions is to stop the recent conversion of parts of the area to olive groves.
Umm Safa*	It is well portected and is clearly delineated against the surrounding landscape. However, a potential problem for future NR management is the fact that Israeli settlers from the nearby street and Halamesh settlements have in the past harassed local people entering the area of the reserve and might behave in the same way to management personnel.
Wadi Al-Quff*	Developing a nature education/experience centre for the southern West Bank due to the steepness of the terrain. The easy access and great interest in Wadi Al-Quff as a recreation area offers this opportunity. Parts of the reserve could be managed for this purpose without jeopardizing the conservation of key species.
Wadi Al-Qilt	Opportunity to raise funds from tourism which could benefit alternative (to cattle grazing) livelihoods or support PA management. Determination of the carrying capacity of the ecosystem at Wadi El-Qilt and negotiation of a sustainable grazing regime with local Bedouins and other land users and resolving the issues of handing it over to the PNA will be an important prerequisite for the establishment of a functional NR there.
Sheikh Zeyd*	Establishment of community-managed PA and maintaining the relatively undisturbed character of the reserve taking into consideration the conservation objective
Ein El 'Auja²⁹	Same as Wadi El Qilt
Bani Na'im (Jerusalem* wilderness)	Negotiate with herders in the area an equitable management approach (zoning, agreement on sustainable carrying capacity, support to alternative livelihoods etc.) with current users and traditional land owners, as the key precondition for management of Jerusalem Wilderness as a PA. Managment activities to control desertification and land degradation through creating a sustainable use framework at the CPA, which would also contribute to its biodiversity conservation objectives. Stop the sporadic Israeli military training exercises conducted there which would further hamper safe access of PA management personnel to the reserve.

**Reserves has overall favorable preconditions for the initiation of NR management.*

*** According to IUCN, 2010*

Table (3.4): Proposed Management activities for selected Nature Reserves in Area

It is worth noting that the possible extension of the range of habitat types and species that will be conserved in a nature reserve context by PNA agencies on long-term, once the practical restrictions to the management of sites within zone C will be lifted, is exemplified by the nature reserves of Ein El ‘Auja and Wadi Al-Qilt. Both are wadis in the transition zone between the eastern slopes and the Jordan valley, with a Mediterranean savannoid habitat type. Both are among the nature reserves with the highest biodiversity. In addition, they represent a habitat type that is not represented in any nature reserve. This illustrates the need for relevant PNA agencies to look beyond the current set of nature reserves in the long term, but as soon as possible, in order to fulfill the PNA’s commitment – also related to CBD and other MEAs - to creating a representative NR system.

As defined in the CBD Aichi Biodiversity Target 11, a good progress would be made towards achieving 17% of protected area coverage of the land. At the moment and with all the aforementioned declarations of nature reserves in the West Bank region, only 9% of the total land area of the West Bank is designated as nature reserves (but not initiated yet as NR). So, of potential economic opportunity is to declare and initiate valuable and well-studied nature reserves (upon revision of existing ones) and to set eco-tourism development plans, recreation and educational plan, rangeland management plans and others for the benefit of the biological components, local communities at both individual and national levels; taking into consideration the conservation measures.

There are almost 46,552 dunums of forested areas located within the Area C that are not protected or declared as nature reserves but are of high potential for biodiversity conservation and other management purposes. Of the most interesting areas are Anin and Al Nasser forests which are both mixed and planted forests; forms almost 2967 and 1320 dunums respectively and are famous for *Pinus halepensis*, *Pinus pinea*, *Cupressus sempervirens*, *Quercus Calliprinos*, *Pistacia lentiscus*, *Ceratonia siliqua*, *Phillyrea media* and other species.

Of priority actions is to build management plans for these areas based on ecological and environmental surveys/assessment for the status, drivers of change, challenges and pressures and potential conservation measures (taking into consideration the adapted relevant global methods, tools and software). A selected Palestinian party; preferable with relevant experience, would be nominated for the running and management of these areas. This step should be done after reinforcing the Natural Reserves Directorate through intensive staff training and provision of financial support in order to build up a well-constructed administrative department. In addition, the Legal Framework for Nature Conservation should be amended to include specific laws governing nature protection and the empowerment of agencies to implement the legislative aspects of the Law.

Several management options can be applied for the benefit of both nature and the Palestinian local communities. The management options should be selected based on an

understanding of ecosystem functioning, biological inventory and integrated planning and monitoring systems at the NR level. Of these options are the following:

- Management plans for recreation and education purposes
- Management plans for eco-tourism purposes
- Management plans for forest restoration purposes
- Management plans for reduction of pressure on resources (including waste and pollution, overgrazing and overexploitation) purposes
- Management plans for resources utilization purposes
- Management plans for managed rangelands purposes
- Management plans for biodiversity conservation purposes
- Management plans for genetic diversity of species and research purposes

3.9 Concluding

The enabling environment for NR system development shows that the legal and policy basis is improving, that the general institutional setup is sound, and that there are numerous national strategies with cross-cuttings with the NR issues. However, there is a crucial lack of capacity among existing institutions to initiate NR system development, primarily due to a lack of funding. On the other hand, it crucial to start initiating on the ground a Palestinian Nature Reserve to come in response to the international agreements and conventions that Palestine has signed mainly the convention on Biological Diversity (CBD) and the Aichi targets.

Annex (1) : List of Localities in Area C

	Name of Locality	Governorate	Locality Type	Population (PCBS 2015)	Unemployment Rate(PCBS 2007) (%)	Dependency Ratio (%) (PCBS 2007)	Poverty Rate(%) (PCBS 2009)	Educational Attainment (PCBS 2007)	include Clinic inside Buffer 1 Kilo	include Schools inside Buffer 1 Kilo	include Settlement inside Buffer 1 Kilo	Access to Water network (PCBS 2015)	Access to Electricity network (PCBS 2015)	Access to Sewage network (PCBS 2015)
1	Jubbet adh Dhib	Bethlehem	rural	199	46.4	89.5	17.9	22.1	No	No	Yes	Yes	No	No
2	Khallat an Nu'man (Al Khas)	Bethlehem	rural	212	8.5	88	19.6	32.5	No	Yes	Yes	Yes	Yes	No
3	Khallet Sakariya (include Khallet 'Afana)	Bethlehem	rural	227	20	73.8	16.5	9.5	No	Yes	Yes	Yes	Yes	No
4	Ad Deirat	Hebron	rural	1,017	25.4	121	38.7	10.8	Yes	Yes	No	No	Yes	No
5	Al Baqa	Hebron	rural	1,558	22.5	87.0	20.6	16.9	No	No	Yes	No	Yes	No
6	Al Buweib	Hebron	Bedouins	777	61.8	105.6	83.1	11.3	Yes	Yes	No	Yes	Yes	No
7	An Najada	Hebron	Bedouins	528	8.2	119.7	53.2	13.8	No	Yes	No	Yes	Yes	No
8	'Arab al Fureijat	Hebron	rural	732	32	100	40.9	14.9	No	No	No	No	Yes	No
9	At Tawani	Hebron	rural	417	37.5	109.2	53.2	4.6	Yes	Yes	Yes	Yes	Yes	No
10	Fuqeiqis	Hebron	rural	347	22.0	87.9	24.5	26.2	Yes	Yes	Yes	Yes	Yes	No
11	Imneizil	Hebron	rural	499	33	134.6	53.2	6.3	No	Yes	Yes	No	No	No
12	Khashem Adaraj	Hebron	Bedouins	775	13.8	117.2	83.1	3.1	No	No	No	Yes	Yes	No
13	Khirbet al Fakheit	Hebron	Bedouins	296	8.8	91	53.2	2.0	No	Yes	No	No	No	No
14	Khirbet Asfai	Hebron	Bedouins	120	15	100	53.2	9.5	No	No	No	No	No	No
15	Khirbet Bir al 'Idd	Hebron	rural	147	15.6	66	53.2	10.7	No	No	Yes	No	Yes	No
16	Khirbet Tawil ash Shih	Hebron	Bedouins	233	0	124	53.2	7.5	No	No	No	Yes	No	No
17	Khirbet Zanuta	Hebron	Bedouins	76	0	53	40.9	14.0	No	No	Yes	No	No	No
18	Maghayir al 'Abeed	Hebron	Bedouins	21	0	0	53.2	0.0	No	No	No	No	Yes	No

19	Mantiqat Shi'b al Batin	Hebron	Bedouins	175	11	75.6	53.2	8.6	No	No	No	No	No	No
20	Om Adaraj	Hebron	rural	1040	13.0	152.7	83.1	10.3	Yes	Yes	No	Yes	Yes	No
21	Um al-Khair	Hebron	Bedouins	660	7.8	121.6	53.2	13.5	No	Yes	Yes	Yes	Yes	No
22	Zif	Hebron	rural	1085	24.5	89.0	38.7	16.1	Yes	Yes	No	Yes	Yes	No
23	'Aba	Jenin	rural	247	9.0	102.0	17.9	38.1	No	Yes	Yes	No	Yes	No
24	Al Hafira	Jenin	Bedouins	72	0.0	75.0	31.8	17.1	No	No	No	Yes	Yes	No
25	Al Mansura	Jenin	Bedouins	210	32.0	75.3	24.8	35.6	Yes	Yes	No	Yes	Yes	No
26	As Sa'aida	Jenin	Bedouins	85	20.0	48.0	22.9	24.6	No	No	No	Yes	No	No
27	Bir al Basha	Jenin	rural	1585	32.7	86.0	31.8	25.9	No	Yes	No	Yes	Yes	No
28	Dhafer al Malih	Jenin	rural	240	7.0	55.2	18.8	16.7	Yes	Yes	Yes	Yes	Yes	No
29	Dhafer al'Abad	Jenin	rural	440	48.0	83.7	19.8	22.0	No	Yes	No	Yes	Yes	No
30	Imreiha	Jenin	Bedouins	513	28.6	80.0	19.8	5.2	No	No	No	Yes	Yes	No
31	Khirbeh al Minthar al Gharbiya	Jenin	Bedouins	30	37.5	70.0	18.8	35.2	No	No	No	No	Yes	No
32	Khirbeh al Minthar al Sharqiya	Jenin	Bedouins	12	0.0	85.0	19.8	31.3	No	No	No	No	Yes	No
33	Khirbeh Mas'ud	Jenin	Bedouins	63	50.0	113.6	19.8	14.3	No	No	No	Yes	Yes	No
34	Khirbet 'Abdallah al Yunis	Jenin	Bedouins	167	13.0	46.0	18.8	3.0	No	Yes	No	Yes	Yes	No
35	Khirbet Suruj	Jenin	Bedouins	71	25	104	22.9	2.9	No	No	No	Yes	Yes	No
36	Tura ash Sharqiya	Jenin	rural	211	8.7	68.3	18.8	23.8	No	Yes	Yes	Yes	Yes	No
37	Umm ar Rihan	Jenin	rural	449	18.4	67.0	18.8	35.3	No	Yes	No	Yes	Yes	No
38	Wad ad Dabi'	Jenin	rural	498	1.1	97	17.9	23.1	No	Yes	Yes	Yes	Yes	No
39	Wadi Du'oq	Jenin	rural	149	13.0	118.0	24.8	26.8	No	No	No	Yes	Yes	No
40	Al Jiftlik	Jericho	rural	4,577	3.7	96.0	30.0	11.1	No	No	Yes	Yes	Yes	No
41	An Nabi Musa	Jericho	Bedouins	381	24.0	91.5	33.3	2.0	No	No	No	Yes	No	No

42	Deir Hajla	Jericho	rural	15	0.0	14.2	0.0	0.0	No	No	No	No	Yes	No
43	Al Ka'abina (Tajammu' Badawi)	Jerusalem	Bedouins	797	48.0	123.0	NA	2.4	No	No	No	Yes	Yes	No
44	An Nabi Samwil	Jerusalem	rural	296	19.4	74.0	NA	15.0	No	Yes	Yes	Yes	Yes	No
45	'Arab al Jahalin	Jerusalem	rural	828	42.0	96.7	NA	9.2	No	Yes	Yes	Yes	Yes	No
46	Jaba' (Tajammu' Badawi)	Jerusalem	Bedouins	83	42.8	100.0	NA	3.1	No	Yes	Yes	Yes	Yes	No
47	Kharayib Umm al Lahim	Jerusalem	rural	417	29.4	110.3	NA	8.5	No	No	No	Yes	Yes	No
48	Qalandiya Camp	Jerusalem	camp	10,144	18	80.5	NA	20.0	Yes	Yes	Yes	Yes	Yes	No
49	Ar Rajman	Nablus	Bedouins	19	0.0	40.0	22.9	0.0	No	No	No	Yes	Yes	No
50	Furush Beit Dajan	Nablus	rural	913	2.6	61.2	36.8	11.9	No	Yes	No	Yes	Yes	No
51	Tall al Khashaba	Nablus	Bedouins	32	0.0	160.0	25.7	0.0	No	No	No	Yes	Yes	No
52	Yanun	Nablus	rural	121	10.0	85.2	22.9	22.7	No	No	Yes	Yes	Yes	No
53	Za'tara	Nablus	rural	56	11.0	69.2	20.9	22.2	No	No	Yes	Yes	Yes	Yes
54	Ad Dab'a	Qalqilya	rural	407	6.0	101.9	4.7	21.8	Yes	Yes	Yes	Yes	Yes	No
55	'Arab Abu Farda	Qalqilya	Bedouins	141	33.0	111.3	6.5	5.7	No	No	Yes	Yes	Yes	No
56	'Arab ar Ramadin al Janubi	Qalqilya	rural	270	6.4	101.9	6.5	5.0	No	No	Yes	Yes	Yes	No
57	'Arab ar Rammadin ash Shamali	Qalqilya	rural	126	6.3	43.4	16.3	7.9	No	No	Yes	Yes	No	No
58	'Izbat at Tabib	Qalqilya	rural	281	3.0	95.7	17.9	26.4	No	Yes	No	Yes	Yes	Yes
59	'Izbat Jal'ud	Qalqilya	Bedouins	136	21.9	64.5	4.7	35.9	Yes	Yes	No	Yes	Yes	No
60	Wadi ar Rasha	Qalqilya	rural	188	22.8	75.6	4.7	10.4	No	No	Yes	Yes	Yes	No
61	Badiw al Mu'arrajat	Ramallah	rural	937	10.7	110.0	41.6	6.0	No	No	No	No	No	No
62	Beit Nuba	Ramallah	rural	310	0.0	77.7	26.0	22.8	No	No	Yes	Yes	Yes	No
63	'Izbat Abu Adam	Salfit	Bedouins	13	33.3	36.4	41.2	33.3	No	No	Yes	No	No	No
64	Al Farisiya	Tubas	Bedouins	194	0.0	65.0	18.7	15.8	No	No	Yes	Yes	No	No
65	Al Malih	Tubas	Bedouins	476	0.0	112.3	18.7	13.2	No	No	No	Yes	No	No

66	Al'Aqaba	Tubas	rural	134	9.7	75.4	20.9	8.8	Yes	Yes	No	No	Yes	No
67	ar Ras al Ahmar	Tubas	Bedouins	230	0.0	89.0	23.8	13.0	No	No	No	No	No	No
68	Ibziq	Tubas	Bedouins	272	0.0	120.0	33.9	20.9	No	No	No	No	No	No
69	Kardala	Tubas	rural	395	2.4	68.0	18.7	3.6	No	No	No	Yes	Yes	No
70	Kharbet Humsa	Tubas	Bedouins	171	6.0	57.0	23.8	16.0	No	No	No	No	No	No
71	Khirbet Yarza	Tubas	Bedouins	64	0.0	68.2	23.8	10.7	No	No	No	No	No	No
72	Al Masqufa	Tulkarm	rural	300	12.5	95.5	19.4	38.0	No	Yes	No	Yes	Yes	No
73	Khirbet Jubara	Tulkarm	rural	338	4.5	71.6	17.9	29.4	No	No	No	Yes	Yes	No

Annex (2):

Classification of Ranking Elements:

The higher the value used in ranking by indicator, the higher the assessment in terms of vulnerability. The scale used ranges from 1 to 5 (1 meant least vulnerable, while 5 is most vulnerable).

(1) Population number (2015):

Class	Rank Value
1-500	1
501-1000	2
1001-1500	3
1501-4000	4
4001 and above	5

According to PCBS (2015), http://www.pcbs.gov.ps/site/lang__en/803/default.aspx

(2) Unemployment Rate (2007):

The highest unemployment rate found among the targeted communities was 61.8%.

Class	Value
1-15%	1
15.1-30%	2
30.1-50%	3
50.1% and above	4

According to PCBS (2007), ARIJ calculation, Palestinian Central Bureau of Statistics, 2008. Census Final Results – Summary- (Population, Buildings, Housing, Establishments). Ramallah - Palestine

(3) Dependency Ratio 2007 (%):

The highest dependency ratio found among the targeted communities was 160%.

Class	Value
1-25%	1
25.1-50%	2
50.1-75%	3
75.1-100%	4
100.1% and above	5

According to PCBS (2007), ARIJ calculation, Palestinian Central Bureau of Statistics, 2008. Census Final Results – Summary- (Population, Buildings, Housing, Establishments). Ramallah - Palestine

(4) Poverty Rate (%):

The highest poverty rate found among the targeted communities was 83%.

Class	Value
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1-15%	1
15.1-30%	2
30.1-45%	3
45.1% and above	4

According to PCBS (2009), Palestinian Central Bureau of Statistics, 2013. *Atlas of Poverty in Palestine. Ramallah - Palestine.*

(5) Educational Attainment (secondary and above)

Class	Value
30.1% and above	1
20.1-30%	2
10.1-20%	3
0-10%	4

According to PCBS (2007), ARIJ calculation, Palestinian Central Bureau of Statistics, 2008. *Census Final Results – Summary- (Population, Buildings, Housing, Establishments). Ramallah - Palestine.*

(6) Access to Health Clinic (Clinic in proximity of 1 Km buffer zone):

According to ARIJ– GIS and Remote Sensing department, 2015.

A spatial analysis was conducted for a 1 Km buffer zone surrounding targeted locality, which was drawn from center of the targeted localities. The accessibility to health clinics was assessed based on availability of clinics in this buffer area.

Binary Ranking:

If Yes = 0

If No = 1

(7) Access to Schools (Schools in proximity of 1 Km buffer zone):

According to ARIJ– GIS and Remote Sensing department, 2015.

A spatial analysis was conducted for a 1 Km buffer zone surrounding targeted locality, which was drawn from center of the targeted localities. The accessibility to schools was assessed based on availability of schools in this buffer area.

Binary Ranking:

If Yes = 0

If No = 1

(8) Proximity to Israeli Settlements (settlements in proximity of 1km buffer zone)

According to ARIJ– GIS and Remote Sensing department, 2015.

A spatial analysis was conducted for a 1 Km buffer zone surrounding targeted locality, which was drawn from center of the targeted locality. Settlements were counted in proximity of the targeted locality once they appear in the buffer zone area.

Binary Ranking:

If Yes = 1

If No = 0

(9) Access to Electricity network

According to PCBS (2015), Distribution of Localities by Availability of Infrastructure Services. Ramallah. Palestine.

Binary Ranking:

If connected to electricity network - Yes = 1

If not connected to electricity network -No = 0

(10) Access to Water network

According to PCBS (2015), Distribution of Localities by Availability of Infrastructure Services. Ramallah. Palestine.

. Binary Ranking:

If connected to water network- Yes = 1

If not connected to water network -No = 0

(11) Access to Sewage network

According to PCBS (2015), Distribution of Localities by Availability of Infrastructure Services. Ramallah. Palestine.

Binary Ranking:

If connected to sewage network- Yes = 1

If not connected to sewage network -No = 0

Choosing the Top-Ranked Vulnerable Communities in area C by cluster

Name of Locality	Governorate	Locality Type	Total score
Imneizil	Hebron	rural	22
Badiw al Mu'arrajat	Ramallah	rural	20
Khirbet Tawil ash Shih	Hebron	Bedouins	19
Al Baqa	Hebron	rural	19
Al Buweib	Hebron	Bedouins	19
At Tawani	Hebron	rural	19
Khashem Adaraj	Hebron	Bedouins	19
Khirbet Asfai	Hebron	Bedouins	19
Mantiqat Shi'b al Batin	Hebron	Bedouins	19
Um al-Khair	Hebron	Bedouins	18
Khirbeh Mas'ud	Jenin	Bedouins	18
Al Jiftlik	Jericho	rural	18
'Arab Abu Farda	Qalqilya	Bedouins	18

Jordan Valley communities Cluster

Name of Locality	Governorate	Locality Type	Total score
Al Jiftlik	Jericho	rural	18

An Nabi Musa	Jericho	Bedouins	18
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Jerusalem communities Cluster

Name of Locality	Governorate	Locality Type	Total score
Al Ka'abina (Tajammu' Badawi)	Jerusalem	Bedouins	16
Qalandiya Camp	Jerusalem	camp	15
'Arab al Jahalin	Jerusalem	rural	15

Rural communities Cluster

Name of Locality	Governorate	Locality Type	Total score
Imnezil	Hebron	rural	22
Badiw al Mu'arrajat	Ramallah	rural	20
Al Baqa	Hebron	rural	19
At Tawani	Hebron	rural	19
Al Jiftlik	Jericho	rural	18
'Arab al Fureijat	Hebron	rural	18

Bedouin communities Cluster

Name of Locality	Governorate	Locality Type	Total score
Khirbet Tawil ash Shih	Hebron	Bedouins	19
Mantiqat Shi'b al Batin	Hebron	Bedouins	19
Al Buweib	Hebron	Bedouins	19
Khashem Adaraj	Hebron	Bedouins	19
Khirbet Asfai	Hebron	Bedouins	19
Khirbet al Fakheit	Hebron	Bedouins	18
Um al-Khair	Hebron	Bedouins	18
Khirbeh Mas'ud	Jenin	Bedouins	18
An Nabi Musa	Jericho	Bedouins	18
'Arab Abu Farda	Qalqilya	Bedouins	18

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