



*Empowered lives.
Resilient nations.*

RESILIENCE SERIES

AGRICULTURE IN AREA C

MARCH 2017

UNDP/PAPP's Resilience Series is a series of reports highlighting practical solutions to Palestinian development challenges in line with the Transformative Resilience Framework.

For more information on the Transformative Resilience Framework, visit:

www.developmentmonitor.ps

Published by:

United Nations Development Programme - Programme of Assistance to the Palestinian People (UNDP/PAPP)

Occupied Palestinian Territory

© Copyright 2017 UNDP/PAPP
All Rights Reserved

UNDP encourages the use of information contained in this analysis but requests that full citation to the source be made.

This is part of UNDP's Resilience Series.

Contents

4	Executive Summary
6	Summary of Recommendations
8	Introduction
9	Palestine's Symbolic Olive Industry
12	Why invest in agriculture in Area C?
14	Challenges to the agriculture sector
14	Productivity
15	Accessing agricultural land
16	A sector neglected by the government and donors
19	The Paris Protocol
20	Climate change
23	Transformative Resilience: A New Approach
25	Solutions for Agriculture in Area C
25	Supporting the national agriculture strategy
26	The need for advocacy
28	Land reclamation
30	Boosting resilience through diversification
31	Drought resistant agriculture and access to water
33	Investing in processing, packaging and marketing
34	Conclusion
36	References



Executive Summary

Traditionally, agriculture has been central to Palestinian national identity and symbolic of the connection between Palestinians and their land. However, the past two decades have seen a slump in productivity, and a steep decline in the value of agriculture as a percentage of the Palestinian economy. The challenges facing Palestinian agriculture have also resulted in the sector's neglect by both the Palestinian government and donors.

Despite this, agriculture still holds huge potential in Palestine. The benefits to investing in agriculture could be huge for both individuals and Palestinian society if harnessed correctly. This includes huge economic growth potential and widespread low-skilled job creation (particularly among

vulnerable groups like women and youth), as well as benefiting land protection in Area C and reducing food insecurity and dependence on the Israeli economy. While the Gaza blockade remains in effect, it is clear that the potential for the development of export-focused agribusiness lies in Area C of the West Bank.

The challenges posed to Area C agriculture should not be understated. These include access restrictions, the binds of the Paris Protocol on Economic Relations, restrictions on access to water, and the impact of climate change.

Despite these challenges, there are effective measures that can be undertaken to boost the resilience of the agricultural

“The benefits to investing in agriculture could be huge for both individuals and Palestinian society if harnessed correctly.”

sector. These interventions must be in line with the Transformative Resilience Framework, which places community ownership, sustainability, and cooperation at the heart of development programming and policy.

Intervention must start with the formation of a comprehensive strategic national agriculture plan, with greater communication between stakeholders, including farming communities themselves, which focuses on investing in productivity and modernisation. Land reclamation is a key tool for growing the sector. There must be greater investment in research and development for drought-resistant agriculture, crop diversification, and improved processing, transportation, marketing, and branding. An export strategy must work towards expansion into high-value international markets.

Credit: UNDP/Rory Evans



Summary of Recommendations

- Structure all interventions in line with the Transformative Resilience Framework.
- Conduct meaningful advocacy to end the occupation and all its restrictions, which damage Palestinian agriculture.
- The Palestinian Government, with support from experts and international and national stakeholders, must develop a comprehensive strategy for agriculture, and commit to increasing funding for agricultural development.
- Undertake land reclamation activities. Rehabilitate farmland to bring it back into productive use, and reconstruct water access and agricultural roads.
- Diversify income streams and crop strains, with a focus on boosting livelihoods outside of harvest season.
- Invest in drought-resistant agriculture to combat climate change and water restrictions, including drought-resistant seed strains and new high-tech and low-tech innovations.
- Increase water efficiency by reusing wastewater, and following best practice from other drought prone contexts.
- Invest in processing, transportation and marketing to reduce waste, improve product quality and expand into international markets.



Credit: UNDP/Sharek Youth Forum

Introduction

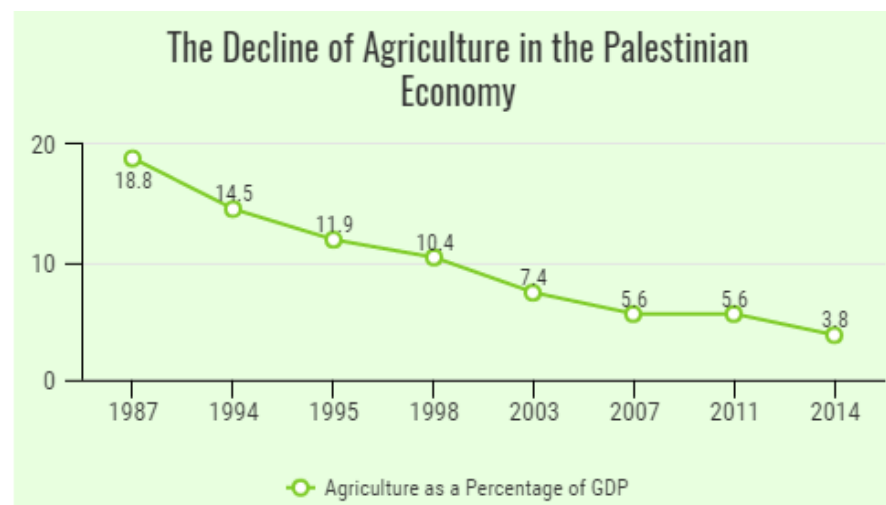
“Central to the Palestinian concept of *sumud*, or steadfastness, is the notion of Palestinian resilience through maintaining the traditional way of life on the land.”

Traditionally, agriculture has been central to Palestinian national identity and symbolic of the connection between Palestinians and their land. Agriculture is a key part of the indigenous Palestinian concept of *sumud*, or steadfastness; central to this is the notion of Palestinian resilience through maintaining the traditional way of life.

Historically, the Palestinian agricultural sector was the backbone of the economy, however this has been in serious decline over the past two decades.¹ The contribution of agricultural activities to the national GDP has been eroded from 18.8% in 1987 to 3.5% in 2015.² The percentage of

workers employed in the agricultural sector has been in steady decline, employing only 10.4% of the Palestinian workforce in 2015, compared with 14.1% in 2000.³ Between 2000 and 2015, GDP growth has been structurally unbalanced against sectors exposed to foreign competition like agriculture.⁴ While total GDP grew on average by over 3% in Palestine during this period, agriculture – the main sector influenced by foreign competition and a critical driver of inclusive growth – contracted.⁵

Despite this, agriculture remains a sector in the Palestinian economy that holds huge potential and deserves investment. 29.8% of land within Palestine’s 1967 borders is suitable for agriculture, equivalent to 1.65 million dunums.⁶ In 2014, agriculture, forestry, and fishing contributed 3.8% of



Palestine’s GDP, generating US\$286.4m of wealth.⁷ The sector is also an important labour-intensive employer in the Palestinian economy, particularly for unskilled workers and women, with the ability to absorb a large number of workers. The most recent labour force statistics show 292,000 people employed by the agricultural sector, of which 52% were full-time workers, and the rest part-time.⁸ Despite this, 90.6% of people working in the agricultural sector are unpaid family members,⁹ indicating the character of the sector as largely

Palestine's Symbolic Olive Industry

The olive tree remains an emblem of Palestinian peace, sovereignty, and national pride in the relationship between the Palestinian people and the land, culture, and heritage. The fruit, oil, sediment, wood, and leaves of the olive tree are used in everything from soap to fuel to crafts. Olive growing and processing remained a significant portion of agricultural output, in line with its position as a traditional and highly symbolic industry in Palestine. On average, the oPt exports 4000 tonnes of olive oil per year, and two-thirds of which are destined for Israel.¹⁰ Olive oil and olive production is concentrated in the north and northwest of the West Bank, with approximately 90,000 families relying on olive production for primary or secondary income.¹¹ The sector employs a huge number of unskilled labourers, including approximately 15% of working women.¹²

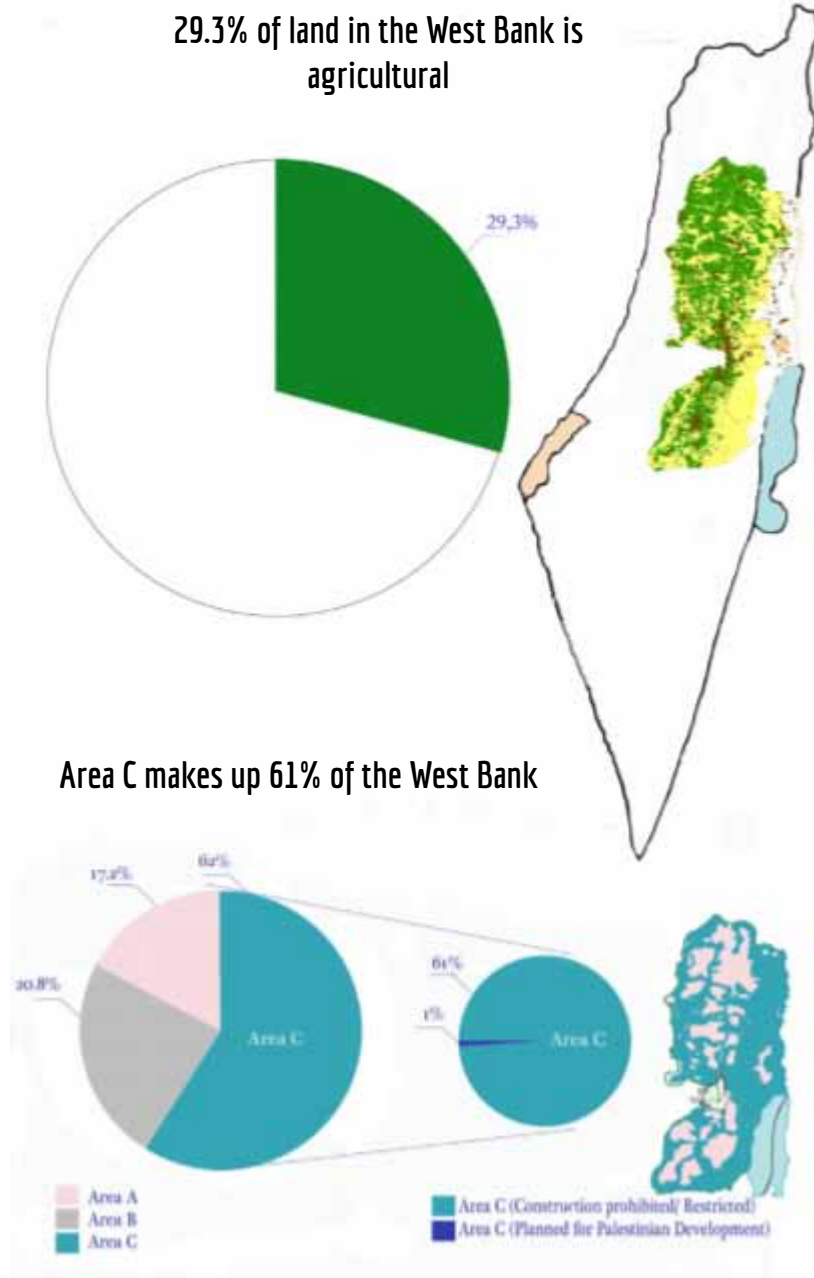
The number of active olive presses in Palestine has remained relatively steady in recent years, recorded as 289 in March 2016.¹³ In 2015 95,142 olives were pressed in Palestine, down from a bumper 2014 harvest of 108,379 olives.¹⁴ However, the 2016 harvest was disappointing, with just 20,000 metric tons of olive oil pressed,¹⁵ compared to 24,700 tons in 2014.¹⁶ The number of employees in the industry remained constant around the 1,350 mark.¹⁷ 70.1% of those employed were waged employees, compared to 29.1% who were unpaid.¹⁸ In total, olive presses contributed US\$10.3m to the Palestinian economy in 2015.¹⁹



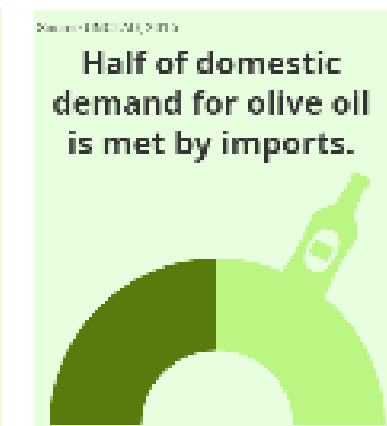
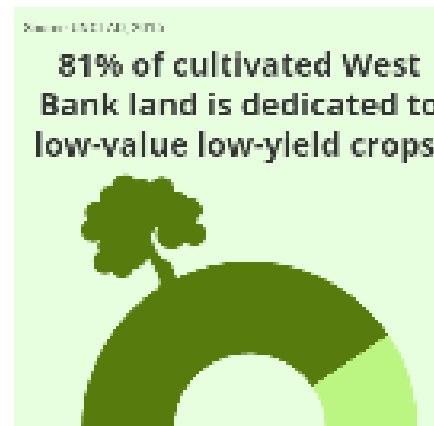
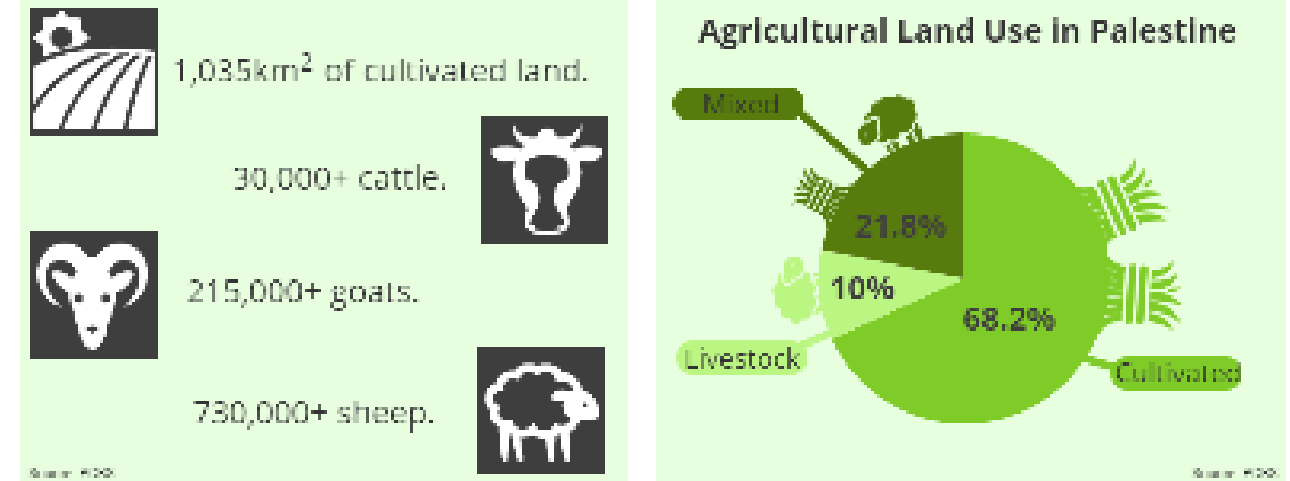
“It is clear that investment in Area C holds the greatest opportunity for growing the Palestinian economy and building a sustainable and resilient private sector.”

informal, small-scale, unplanned, and unregulated.

The majority of agricultural activity in Palestine takes place in Area C of the West Bank and in the Gaza Strip. In Gaza, continuing economic blockade and three consecutive wars have devastated the sector, and the potential for the development of a strong agricultural export industry remains slim until broader political solutions are found. However, Area C, which contains the majority of Palestinian arable land, has huge untapped agricultural potential even within the confines of occupation. For the immediate potential of Palestinian agribusiness, it is clear that investment in Area C holds the greatest opportunity for growing the Palestinian economy and building a sustainable and resilient private sector.



Palestinian Agriculture



Why invest in agriculture in Area C?

Protecting Palestinian land

Neglected, disused or abandoned Palestinian land is often an easy target for expropriation and is much more likely to be illegally acquired for Israeli settlements. Rehabilitating farmland and bringing it back into agricultural production reduces the opportunity for land-grabbing, clearly demonstrating Palestinian ownership and use and therefore protecting the land from illegal acquisition.

Growing the economy

As a productive industry, agriculture can make a huge contribution to the Palestinian economy, with agricultural exports generating vital foreign capital and encouraging further investment. Irrigating unexploited land in Area C could add \$704 million to the Palestinian economy (around 7% of GDP).²⁰ Capturing just a small fraction of this potential growth would have widespread benefits for Area C communities.

Creating jobs

As a labour-intensive field, agriculture creates low-skilled or semi-skilled jobs that contribute to reducing unemployment, particularly among youth and women. Traditionally, agriculture was a major

“Rehabilitating farmland and bringing it back into productive use reduces the opportunity for land-grabbing.”

employer of women, but the decline of the sector has constricted opportunities for women, who struggle to find work elsewhere due to patriarchal norms and the resultant gender-based segregation in the labour force. Even with the declining position of agriculture in the economy, the sector is the second largest employer of women, comprising 20.9% of the female workforce.²¹

Reducing dependency

A lack of local production has left Palestine heavily reliant on expensive food imports,

which has increased dependency on the Israeli economy.²² Only 60% of food consumed in Palestine is produced by Palestinians, and only 5% of cereals and pulses are local.²³ Likewise, only 20% of agricultural inputs like animal feed and fertiliser are produced in Palestine, while the rest are imported, usually from Israel.²⁴ Investing in agriculture is critical to reducing dependency on the Israeli economy, boosting economic sovereignty and food security, and lowering food costs.



Credit: UNDP Archive

Challenges to Agriculture in Area C

Productivity

Agriculture in Palestine is dogged by weak productivity, with agricultural yield per dunum half that of Jordan and only 43% of that in Israel, despite virtually identical agricultural conditions.²⁵ Wastage is another serious issue, with the olive industry losing more than US\$50m of product per year through outdated processing technology and inefficiency.²⁶

Between 1995 and 2011 the number of workers in the agriculture sector doubled while the productivity per worker simultaneously



halved.²⁷ Low productivity means low wages, as inefficiency means doing more work for less money. The average daily wage of agricultural workers (excluding those working in Israeli settlements) is estimated at NIS 47.5²⁸ (US\$12.33). Compared to an average daily wage of NIS 83.3 (US\$21.63) for all economic activities,²⁹ this makes agriculture one of the least desirable activities for skilled and un-skilled workers.

Accessing agricultural land

Israel's network of settlements, illegal under international law, have robbed Palestinians of their rightful agricultural lands, in many cases for settlement farming.³⁰ 70% of Area C, much of it valuable farmland, is off limits to Palestinians, with an additional 29% heavily restricted.³¹ The completion of the Separation Wall will conclude with a permanent loss of 8% of Palestinian agricultural lands.³² With just 18% of permit applications resulting in permission

“Between 1995 and 2011, the number of workers in the agriculture sector doubled while the productivity per worker simultaneously halved.”



for farmers to access their land,³³ many farmers have simply given up trying.³⁴ Of 67 access gates in the Separation Wall, 29 are never open.³⁵ As a result, communities in the Northern West Bank report an 80% decrease in the number of farmers regularly cultivating their land.³⁶

Despite marginal land access improvements during the 2016 olive harvest, 4,700 permit requests were still rejected in the northern West Bank alone.³⁷ Access restrictions to land beyond the separation barrier prevent farmers from undertaking year-round upkeep to their olive groves, like ploughing, pruning, fertilising, and weed and pest management. This has resulted in a 65%

A sector neglected by the government and donors

The agricultural sector has repeatedly been a low government priority, despite its productive and symbolic importance in the Palestinian economy. In fact, since the establishment of the PA in 1994, budget allocation to the agricultural sector has not exceeded 1% of the annual budget.⁴⁴ Moreover, 85% of this goes to staff salaries in the Ministry of Agriculture, rather than investment in productive capacity.⁴⁵

International donors have also disregarded the agricultural sector, allocating only 1.41% of donor aid to agricultural development between 1994 and 2000, which decreased to just 0.74% by 2006.⁴⁶ In addition, aid is often allocated to traditional agricultural activities like olive farming, rather than investment in research and technological improvements. Moreover, aid projects often focus on promoting export-oriented production, while neglecting the enhancement of local production that could meet Palestinian demand and thus boost food security and reduce dependency on Israel.⁴⁷

reduction in olive yield on the 'Israeli' side of the wall.³⁸

The Jordan Valley holds Palestine's most fertile, and therefore best, agricultural lands. However, Israel has designated 85.2% of the valley off limits to Palestinians on various pretexts, including closed military zones, nature reserves, settlements, and 'state land'.³⁹ As such, despite the favourable conditions, Jordan Valley farmland is some of the least cultivated by Palestinians, with just 5,000 hectares (or an eighth of its arable land) having been planted.⁴⁰ In contrast, settlers in the Jordan Valley enjoy generous water allocation and state subsidy, with settler communities having developed 3,200 hectares of intensive agricultural production, generating half a billion shekels annually for the Israeli economy.⁴¹ 60% of Jordan Valley settlers are employed either directly or indirectly by this industry, which exploits illegally held Palestinian territory at the expense of the Palestinian agricultural economy.⁴² It is estimated that regaining control of the Jordan Valley for



Since the establishment of the PA in 1994, budget allocation to the agricultural sector has not exceeded 1% of the annual budget. 85% of this goes to staff salaries at the Ministry of Agriculture.

full cultivation would add US\$1bn to the Palestinian GDP, an increase of 9%.⁴³

Water and agriculture

Military Orders 92, 158, and 291 grant authority of the oPt's water resources to the Israeli military, ban construction of Palestinian water infrastructure without Israeli permission, and annul all land and water-related arrangements that existed prior to the occupation.⁴⁸ This has allowed Israel almost total control of Palestinian water resources in the West Bank, resulting in an unequal and increasingly widening distribution gap between Israelis and Palestinians. As

"Irrigated land is, on average, fifteen times more productive than rain-fed land. As a result, the West Bank's 2.3% of irrigated land contributes almost half its total plant production"



a result, the percentage of Palestine's water resources allocated by Israel to Palestinians has shrunk to 13% while Israel's allocation has ballooned to 87%.⁴⁹ This unequal access to water is especially detrimental to Palestine's agricultural sector.

Developing agricultural water infrastructure in Area C, including wells and rainwater storage as well as connecting to the water network, requires a permit from the Israeli Civil Administration.⁵⁰ This system was established in the Oslo Accords under the guise of a 'Joint Water Committee', which in reality is monopolised by Israel.⁵¹ As such, Israel has an effective veto over the development and utilisation of Palestinian water infrastructure. Requests are often denied, delayed (sometimes for more than a decade), or even after approval, are rejected for undefined 'security concerns'.⁵² Constructing water infrastructure without prior approval frequently results in the issuance of demolition notices, and the Israeli military has even bulldozed water storage units constructed without permits by international donors.⁵³

As a result, protected irrigated agriculture makes up just 2.3% of cultivated land in the West Bank, with the rest being rain-fed.⁵⁴ A lack of irrigation has a severe impact on agricultural productivity, as irrigated land is, on average, fifteen times more productive than rain-fed land.⁵⁵ As a result, this 2.3% of irrigated land contributes almost half of the West Bank's total plant production.⁵⁶

WHAT IS THE PARIS PROTOCOL?



The 1993 Paris Protocol is an agreement signed between Israel and Palestine that created a "customs union" between the two countries

The 5-year temporary agreement was meant to expire when a permanent political solution was reached



The two countries were supposed to decide economic policy together in 'Joint Committees'

In reality, Palestine has no say, leaving Israel to dictate fiscal, trade and tax policy at the expense of the Palestinian economy



24 years later the Paris Protocol is still in effect.

The Paris Protocol

Even when they have agricultural products to sell and trade, farmers in Area C face serious challenges to accessing international markets. The Protocol on Economic Relations (PER), or Paris Protocol, which formed a customs and trade union under de facto Israeli control has had a serious effect on Palestine's agricultural sector. Subsequently, Palestinian farmers' ability to export their products to international markets is heavily restricted, while simultaneously Israeli-subsidised products flood the West Bank market.

At borders, Palestinians are required to use the back-to-back system, under which products have to be unloaded from

one truck and reloaded onto another at checkpoints. Not only does this system damage agricultural products, but it also imposes time delays and financial costs on Palestinian traders, unlike their Israeli counterparts.⁵⁷ It is estimated that the cost of importing and exporting inflicted upon Israeli producers is half the cost borne by Palestinians, and the amount of time required from Israeli shippers to finish import procedures is 25% of the time spent by Palestinians.⁵⁸

The Paris Protocol also limits the import of critical agricultural inputs. Restrictions on the import of fertiliser to the oPt is estimated to have decreased Palestine's agricultural productivity by between 20% and 33%.⁵⁹

Climate Change

Like everywhere on earth, man-made climate change is expected to have a serious and negative impact on Palestine. The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) predicts that the southern and eastern Mediterranean region will become warmer and drier due to the impact of man-made climate change. Alarming, projections forecast higher warming than the global annual average of 2.2-5.1°C, and a substantial decrease in annual rainfall, dropping by 10% by 2020 and 20% by 2050. Extreme weather conditions are also likely to accompany these changes, with an increase in the number of annual

"Climate change will create increasingly challenging agricultural conditions, which will seriously impact productive capacity unless immediate measures are taken to mitigate them."

days with temperatures over 30°C.⁷² These changes will create increasingly challenging agricultural conditions, which will seriously impact productive capacity unless immediate measures are taken to mitigate them.

Climate vulnerability is the tendency of people to be harmed by climate-related hazards in the context of other socio-economic and political shocks, which affect communities' ability to cope and adapt.⁶⁰ The agricultural sector is likely to face increasing challenges brought about by climate change, including recurrent droughts and increased desertification, higher demand for crop water, shortage of grazing land, decline in pasture production, and higher food prices. High seasonal variations and extreme weather conditions may also jeopardize heat and cold-sensitive crops.⁶¹

The damaging effects of climate change are already being felt in Palestine. A northern



Credit: Ahed Izhiman/UNDP

shift in wind patterns has reduced rainfall in the southern Mediterranean, and significantly increasing inland aridity over the past decade.⁶² In the West Bank, annual average rainfall was between 354 mm and 500 mm during 2007-2011, far lower than its historical average of 532mm.⁶³ The warmer, drier, and more unpredictable weather conditions brought about by climate change are likely to seriously impact agriculture in Area C, but this situation is worsened by the lack of sovereignty that prevents Palestinian farmers from taking measures to adapt to challenging conditions. Continuing occupation has resulted in a wide range of maladaptive practices that have frustrated the ability of Palestinian farmers to adapt to climate change. These include Israeli-subsidised water-intensive livestock farming by settlers, and the destruction of Palestinian olive groves.⁶⁴

Increasing aridity has exacerbated desertification, with 72% of the oPt (4,480km²) considered endangered.⁶⁶ Desertification or land degradation, aggravated by climate change, is the product of complex and interlinking social, political and environmental factors, including the unsustainable management of resources, and weak legislative and social oversight.⁶⁷ Restrictions in Area C that deny access for Palestinian herders to more than 85% of their pre-1967 pastures has led to an unsustainable ratio of livestock per dunum, resulting in overgrazing and environmental degradation.⁶⁸ Israel's control over Area C denies Palestinians the ability to tackle desertification, including barring them from accessing water resources and

“Israel’s control over Area C denies Palestinians the ability to tackle desertification, including barring them from accessing water resources and banning afforestation.”

banning afforestation.⁶⁹ While the exact economic cost of desertification in Palestine is unknown, in comparable countries it contributes to a loss of between 0.65% and 1.45% of GDP annually.⁷⁰

Increasing water scarcity is the most serious threat to Palestinian agriculture posed by climate change.⁷¹ Climate change is expected to have major repercussions on water resources, including an increase in water shortages as a result of lower rainfall and higher evaporation. Israel's control over water resources has already left Area C farmers vulnerable to climate change, while Israel's exploitation of Palestinian water resources leaves them much better placed to adapt to reduced rainfall. In addition, as water scarcity increases, the likelihood of conflict between Israel and Palestine over access to water will increase.

Transformative Resilience A Fresh Approach





Credit: Ahd Izhiman/UNDP

Credit: Whewes

In the face of occupation, a national unified strategy for recovering the agricultural sector is vital for boosting food security and ending the reliance on Israeli imports. This must be in line with the Transformative Resilience Framework forwarded by UNDP and partners, encompassing principles of long-term change, inclusivity, and sustainability.

When interventions are limited to learning to “cope” with the challenges at hand, this leads to eroding resilience over time. For agricultural communities, this means reducing yields, eroded productivity, and a sector dogged by increasing neglect. This is because individuals and communities are forced to repeatedly absorb shocks, but without mitigating measures to offset their repercussions. To manage adversity successfully, one must begin by “overcoming” the hardships (i.e. adapting to changing circumstances). Yet to truly

become resilient, communities must “grow” from the experiences of hardship, and strengthen themselves to become better able to deal with future challenges. In a nutshell, they must transform.

In line with the transformative resilience framework, a national agricultural resilience plan must take a holistic approach, targeting the most vulnerable communities, investing in the most promising domestic opportunities, and being realistic about the limitations of occupation. It must contain, at its core, strong partnerships across a range of actors; between government, donors, UN agencies, civil society, the private sector and – most critically – Palestinian communities themselves. The strategy must be developed in accordance with technological advancements in the sector, and focus on local production for local markets, as well as boosting export potential.

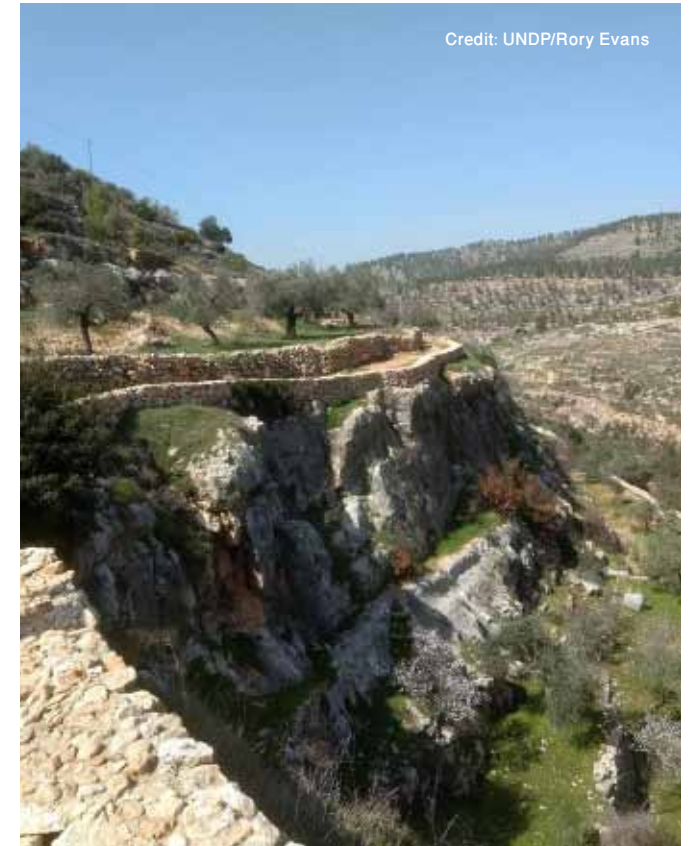
Solutions for Agriculture in Area C

It is clear that for policymakers keen to strengthen Area C's agricultural sector, ending the occupation through strong and sustained advocacy must be the first priority. However, while political solutions remain elusive, taking practical steps to develop Palestine's agriculture under occupation is critical for boosting food security, growing the economy, and raising living standards.

Supporting the national agriculture strategy

Overcoming the challenges faced by farmers and the agricultural industry in Area C requires the refocusing of national development strategies to place the sector at the very centre of government attention. A strategy must be formulated on the basis of strong evidence for best practice, taking into account the views of climate change and agricultural experts, and must be communicated effectively with Palestinian farmers to ensure their participation and awareness. The sectoral strategy must focus on every stage of the supply chain, from production to transportation and export.

Pushing ahead with this means increasing the share of the national budget allocated to agriculture, and refocusing Ministry



Credit: UNDP/Rory Evans

“The agricultural industry in Area C requires the refocusing of national development strategies to place the sector at the very centre of government attention.”

Agriculture without occupation: the need for advocacy

Problem analysis, rather than needs assessment, is a core principle of the Transformative Resilience Framework. This means ensuring that actions target the root causes of development challenges in Palestine, not just treating the symptoms.

Ultimately, Israel's occupation, its control of water resources, the Paris Protocol, and settlement construction, are the leading cause of agricultural weakness in Area C. Overcoming this will require sustained and committed advocacy from international partners to end the occupation or, at a minimum, seriously reduce current restrictions on trade, construction, and development. In particular, revising the Paris Protocol must be a priority, to allow Palestine to develop its own trade policies and reduce punitive border controls on Palestinian agricultural products. Palestinians must also have access to their sovereign agricultural lands in Area C, and settlement expansion and the exploitation of Palestinian natural resources, particularly discriminatory water allocation, must end. All this will require political solutions that have so far proved elusive.

The economic case for an end to occupation that would create a truly free and thriving agricultural sector is clear. The development of 50,000 dunums of land occupied by settlers in the Jordan Valley, for example, holds the potential to develop an export-oriented high-value vegetable, flower, and herb industry worth around a billion dollars per year.⁷³ In total, potential revenues from increased productivity in the West Bank have been estimated at US\$1.95 billion, or an extra 19% of the West Bank's GDP. In addition, private sector development in agriculture is challenging while occupation continues, as it creates uncertainty and high levels of investment risk that are off-putting to investors. In total, under occupation the potential of Palestinian agriculture has been estimated at US\$4.59 billion.⁷⁴ However, the withdrawal of restrictions on water use, access to land, and exports and tariffs sees that number leap to US\$5.93 billion.⁷⁵



Credit: Ahd Izhiman/UNDP

of Agriculture spending towards direct investment and research that will enhance agricultural productivity, encourage private sector growth, and create jobs. Donors must also urgently refocus their programmes towards agricultural development in Palestine.

Establishing an agricultural development bank would provide a strong mechanism for boosting agriculture development and productivity in Area C. Measures the bank

could take include: providing credit and insurance to farmers; funding investment in agricultural infrastructure; compensating farmers for uprooted trees and assisting in their replanting; developing programs and legal actions for land reclamation and improvement; applying modern agricultural techniques; and, developing better marketing.⁷⁶

Investing in large scale agribusiness is one way to expand the export potential

of Palestinian agricultural products and boost growth. However, the small-scale, often family-oriented nature of much of Palestine's agricultural sector is not necessarily wholly compatible with this vision. Strengthening farmers' cooperatives and increasing cooperation between farmers is therefore also a strong method for boosting exports. Together, farmers can share best practices, and collaborate on processing, transportation and export, cutting out middle-men, reducing collective risk and boosting rural livelihoods for some of Palestine's poorest. Agriculture unions are also a powerful voice for demanding greater resources for the agricultural sector from the government.

Land reclamation

Negativity surrounding Palestinian agriculture has often focused on a lack of access to land under occupation. But even within political

constraints there are neglected areas of Palestinian agricultural land that hold huge potential, but that require reclamation and investment to be made productive. Of the 742,575 dunums of land available to Palestinians in the West Bank that are uncultivated but not reserved for future urban expansion, 30% is suitable for fruit trees, 22% suitable for reforestation and the remaining 48% for pasture for

livestock.⁷⁷

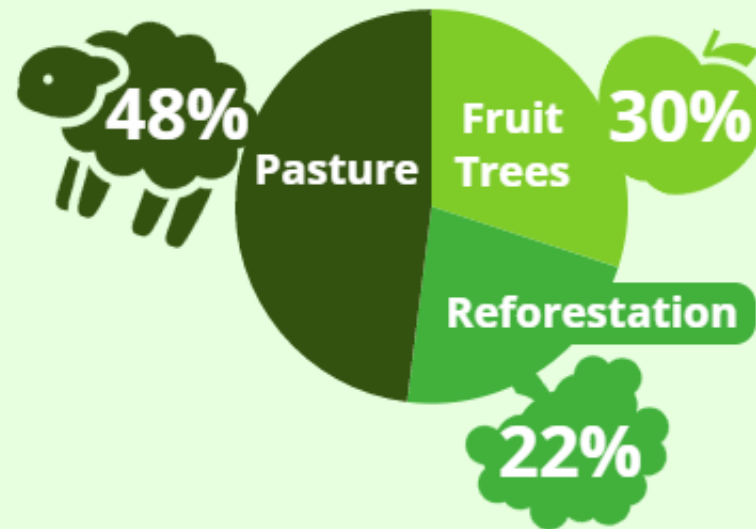
These interventions require strategic planning to ensure their viability within occupation strictures. A holistic approach is the only way to maximise potential benefits, with careful coordination between various actors enabling efficient resource-sharing, and the large-scale diversification of products in line with demand. With careful planning, agriculture is a highly sustainable

area for public and donor investment and intervention, offering lasting social and economic value that far outweighs the cost of intervention. Comprehensive cost-benefit analyses of full land reclamation from the land available to Palestinians in Area C, versus the potential economic benefits, demonstrates the huge value of these activities. Cultivating the 742,575 uncultivated dunum in Area C would require investment of US\$ 520 million,



Credit: UNDP /Sharek Youth Forum

Suitability for agriculture of available Palestinian land





Credit: UNDP Archive

security.

Agriculture development in Palestine often focuses on the Jordan Valley. However much agricultural land accessible to Palestinians in Area C lies outside this area, and is worthy of renewed focus for land reclamation. The potential revenue from increasing production in reclaimed land in Area C that not currently in use is estimated at US\$197.65 million.⁷⁹

Boosting resilience through diversification

At present, annual agricultural production in many areas is restricted to a few peak harvest months each year, hampering competitiveness, increasing the chance of crop failure due to unpredictable climate conditions, and leaving rural communities reliant on a single source of income. Put simply, a poor harvest can spell disaster. Improving the resilience of rural communities means moving to a year-round production cycle, removing seasonality in economic and employment opportunities in the agricultural sector. There is a need to experiment with other seasonal crop strains, investing in complementary income streams like beekeeping, and branching out into demand-driven high-value crops in new international markets. Utilising greenhouses and irrigation systems, where possible, will increase the ability of farmers to grow all year round. Adapting to shifting seasons and unpredictable conditions brought about by climate change will

but would yield yearly revenues of US\$ 197 million, indicating a huge profit from investment after three years.⁷⁸

Land reclamation involves a variety of activities, including upgrading agricultural roads, restoring farmland to bring it back to productivity, and constructing water harvesting wells to enhance irrigation. Over the past twenty years, UNDP has already reclaimed 40,000 dunums of land and brought it back under cultivation, planted 1.5 million fruit trees, constructed 450km of agricultural roads and created 6,000 cisterns with a capacity of more than 0.5m litres of water. These activities are vital for building resilient agricultural communities capable of producing high quality products for export and to boost Palestinian food

“Improving the resilience of communities means moving to a year-round production cycle, removing seasonality in economic and employment opportunities in the agricultural sector.”

require constant reassessment of crop usage to ensure the best outcomes.

Drought resistant agriculture and access to water

Overcoming restrictions on access to water and water storage requires a comprehensive and realistic strategy that utilises best practice from other drought-prone contexts, including both high-tech and low-tech solutions where appropriate.

Increasing water efficiency for Area C agriculture should be a top priority. Greater water efficiency is critical for ensuring that current water allocations are not diverted toward agriculture at the expense



Credit: George Azer/UNDP



of the local population. Mapping water usage, installing meters to limit waste, and focusing water allocation towards the highest value crops are all steps that could be taken to improve water efficiency. In particular, identifying areas where wastewater could be utilised in place of fresh water would allow the reallocation of precious fresh water to other areas. Treated wastewater can be used to irrigate fruit tree groves,⁸⁰ for example, as well as to grow fodder for livestock, reducing the need to import expensive Israeli fodder.⁸¹

Innovative farming techniques have revolutionised agriculture in drought-prone environments. Many of these are

“Mapping water usage, installing meters to limit waste, and focusing water allocation towards the highest value crops are all steps that could be taken to improve water efficiency.”

cost-effective and low-tech solutions that could significantly improve outcomes and provide a strong return on investment. This includes the use of drip irrigation, efficient sprinkler systems, and raised bed planting. Crop diversification efforts should focus on crops that require minimal water allocation and are resistant to drought-like conditions. Introducing new drought-resistant seed strains in drought-prone areas of Kenya, for example, has seen agricultural yields double,⁸² and more must be done to connect Palestinian farmers to best practice areas from other contexts, especially through south-south collaboration, to see if these successes can be replicated.

Investing in processing, packaging, and marketing

The processing of products and investing in attractive packaging and marketing can add huge additional value to agricultural products. This is particularly critical for ensuring a greater share of Palestinian products end up in valuable international markets, where competition is fierce between different brands, and consumers are used to high standards. Non-perishables like dried grains could be a particularly fruitful market for further exploration, as these are less likely to be ruined during lengthy customs delays and could benefit from branding that emphasises a traditional, wholesome

connection to the Middle East or the Holy Land. Marketing towards Palestinian consumers also has the potential to raise consumer awareness of the importance of buying Palestinians, undercutting Israeli products, boosting food security and reducing dependence.

Processing and supply chain infrastructure investment could also bring huge benefits to the sector. In particular, upgrading outdated olive presses and other processing technology could dramatically reduce wastage, raise product quality and boost agribusiness in Area C. Providing refrigerated trucks for the transportation of goods would prevent losses and keep products fresher for longer. International markets also require higher safety and processing standards, which means investment in technologically-advanced processing facilities are necessary to get the greatest value from agricultural products.



Conclusion

The central position of agriculture within the traditional Palestinian concept of *sumud* belies a sector that has been neglected by the government and donors at the expense of Palestinian independence and economic prosperity. Palestinian agriculture has suffered under occupation, with restrictions on access to land, water use, and export seriously constraining the development of the sector. Yet, the reality is that agriculture in Area C continues to provide huge benefits to rural communities by boosting food security, providing vital low-skilled jobs, and building resilient livelihoods. Despite the occupation, investment in Palestinian

agriculture can promise huge returns if targeted and strategised effectively. As such, agriculture in Area C must be repositioned at the centre of future national and donor development plans, to bolster Palestinian resilience and strengthen the enduring connection of Palestinians to the land.

Transforming Area C's agricultural sector as a driver of economic growth will require a multitude of interventions that simultaneously target every stage of the supply chain. Policymakers must invest heavily in research that integrates best practice from local and international

contexts and takes into account market needs. At the supply side, innovative and sustainable water efficiency and drought-resistant farming methods can boost yields and help farmers adapt to the challenges of climate change. Likewise, crop diversification will end farmers' reliance on individual crops, and recalibrate the Palestinian agricultural sector to year round production. Land reclamation must be at the core of agricultural development, utilising existing resources and focusing on innovative water efficiency methods. At the processing phase, strong investment in processing and packaging can add significant value to products and reduce wastage, helping Palestinian farmers penetrate high-value international markets and undermine a reliance on imported goods. Finally, at the export stage, supplying refrigerated trucks can assist in reducing product wastage, particularly given long transit times brought about by arduous border controls.

Critical to implementing this catalogue of interventions is the creation of a strong,

"Partnerships between the Palestinian government and technicians and donors is critical to developing an evidence-led approach that will bring lasting gains"



Credit: UNDP Archive

coherent, and holistic national agriculture strategy, which sets realistic goals within the political constraints and targets investment at research and development. Central to this is planning in line with UNDP's Transformative Resilience Framework, which emphasises community-ownership, sustainable development and strong and enduring partnerships for change. Partnerships between the Palestinian government and technicians and donors is critical to developing an evidence-led approach that will bring lasting gains to agriculture in Area C.

Credit: Ahd Izhiman/UNDP



References

1. UNCTAD (2015), 'The Besieged Palestinian Agricultural Sector'
2. PCBS (29.12.2015), 'Press report of economic forecasting for 2016', found at: <http://www.pcbs.gov.ps/site/512/default.aspx?tabID=512&lang=en&ItemID=1565&mid=3171&wversion=Staging>
3. PCBS (2015), 'Labor Force Survey 2014'
4. UNSCO (2016), 'Common Country Analysis: Occupied Palestinian Territory' (p.32)
5. Ibid.
6. UNDP/PAPP (2010), 'Agriculture Suitability Study'
7. PCBS (2015), 'Palestine in figures', found at: <http://www.pcbs.gov.ps/Downloads/book2188.pdf>
8. See: <http://www.pcbs.gov.ps/site/512/default.aspx?tabID=512&lang=en&ItemID=1073&mid=3171&wversion=Staging>
9. Ibid.
10. UNCTAD (2015), 'The Besieged Palestinian Agricultural Sector' (p.6)
11. OCHA (2016), '2016 Olive Harvest: Challenges Remain Despite Increase in Permit Approvals' found at: <https://www.ochaopt.org/content/2016-olive-harvest-access-challenges-remain-despite-increase-permit-approvals-and-reduced>
12. Ibid.
13. PCBS (2016), 'Olive Presses Survey', found at: <http://www.pcbs.gov.ps/Downloads/book2182.pdf>
14. Ibid.
15. Ministry of Agriculture
16. PCBS (2016), 'Olive Presses Survey', found at: <http://www.pcbs.gov.ps/Downloads/book2182.pdf>
17. Ibid.
18. Ibid.
19. Ibid.
20. World Bank, in: UNCTAD (2015), 'The Besieged Palestinian Agricultural Sector' (p.31)
21. PCBS (2015), 'International Women's Day 2015'
22. MAS (2015), 'Food Security Bulletin' (p.4)
23. ARIJ (2010), found at: <http://www.arij.org/publications/2010/Chapter%202.pdf> (p.36)
24. Panza, L. (2007), 'Palestinian foreign trade: current situation and future prospects' (p.36 - footnotes)
25. Ibid. (p.i)
26. Quote from the Minister of Agriculture, in Al-Hadath (23.03.2017)
27. World Bank (2013), 'West Bank and Gaza: Area C and the Future of the Palestinian Economy' (p.2)
28. PCBS (2015), 'Average Daily Wage in NIS for Wage Employees in the Agricultural Sector and all Activities in Palestine by Year and Region, 2010- 2014'
29. Ibid.
30. UNCTAD (2015), 'The Besieged Palestinian Agricultural Sector'
31. Ma'an (2014), 'Food Insecurity in the Occupied Palestinian Territories' (p.13)
32. UNCTAD (2015), 'The Besieged Palestinian Agricultural Sector' (p.9)
33. Ibid. (p.40)
34. Ibid. (p.9)
35. Ma'an, 'Food Insecurity in the Occupied Palestinian Territories' (p.13)
36. UNSCO (2016), 'Common Country Analysis: Occupied Palestinian Territory' (p.157)
37. OCHA (2016), '2016 Olive Harvest: Challenges Remain Despite Increase in Permit Approvals' found at: <https://www.ochaopt.org/content/2016-olive-harvest-access-challenges-remain-despite-increase-permit-approvals-and-reduced>
38. Ibid.
39. B'Tselem, 'Background on the Jordan Valley', found at: http://www.btselem.org/jordan_valley
40. Ibid.
41. Ibid.
42. Ibid.
43. Ma'an, 'Food Insecurity in the Occupied Palestinian Territories' (p.12)
44. Abdelnour et al. (2012), 'Farming Palestine for Freedom', London School of Economics
45. Ibid. (p.5)
46. Ibid. (p.5)
47. Ibid. (p.6)
48. Amnesty International (2009), 'Troubled Waters - Palestinians Denied Fair Access to Water' (p.18)
49. Corradin (2016), 'Israel: Water as a tool to dominate Palestinians', found at: <http://www.aljazeera.com/news/2016/06/israel-water-tool-dominate-palestinians-160619062531348.html>
50. EWASH oPt (2015), 'On the Oslo II 20 year anniversary EWASH calls on the International Community and local authorities to guarantee Palestinians' water rights', found at: http://ewash.org/sites/default/files/inoptfiles/EWASH%20Statement%20on%20Oslo%20Accords%2020%20Years_280915%20FNL.pdf
51. Amnesty International (2009), 'Troubled Waters - Palestinians Denied Fair Access to Water' (p.10)
52. Ibid.
53. EWASH, 'Water and Sanitation in Palestine'
54. UNCTAD (2015), 'The Besieged Palestinian Agricultural Sector' (p.29)
55. Ibid.
56. Ibid.
57. UNCTAD (2015), 'The Besieged Palestinian Agricultural Sector' (p.40)
58. Ibid.
59. Ibid. (p.i)
60. Ibid.
61. Ibid.
62. Kafle, H.K. & H.J. Bruins (2009), 'Climatic trends in Israel 1970-2002: warmer and increasing aridity inland', Ma'an (p. 63-77)
63. ARIJ (2012), 'Changes of the Palestinian Agricultural Land Use Under Drought'
64. UNDP, 'Climate Change Adaptation Strategy and Programme of Action for the Palestinian Authority', 2011 (p.xi)
65. Ibid.
66. "Desertification' is the land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities." See: UNCCD (2012), 'The National Strategy, Action Programme and Integrated Financing Strategy to Combat Desertification in the Occupied Palestinian Territory', (p.32)
67. UNCCD (2012), 'The National Strategy, Action Programme and Integrated Financing Strategy to Combat Desertification in the Occupied Palestinian Territory', (p.12)
68. Isaac (no date), 'Environmental Protection and Sustainable Development in Palestine', ARIJ (p.2), found at: http://www.arij.org/files/admin/Environmental_Protection__Sustainable_Development_in_Palestine.pdf
69. Ibid.
70. UNCCD (2012), 'The National Strategy, Action Programme and Integrated Financing Strategy to Combat Desertification in the Occupied Palestinian Territory', (p.35)
71. Ibid. (p.x)
72. UNDP (2011) 'Climate Change Adaptation Strategy and Programme of Action for the Palestinian Authority'
73. Gal et al. (2010), 'Economic Dimensions of a Two-State Agreement Between Israel and Palestine', (p.213)
74. UNDP (2013), 'Development Potential of Agriculture in Area C', (p.16)
75. Ibid.
76. Ibid. (pp.35-36)
77. Ibid. (p.10)
78. Ibid. (p.13)
79. Ibid.
80. UNCTAD (2015), 'The Besieged Palestinian Agricultural Sector' (p.5)
81. Ibid. (p.36)
82. See: <http://www.farmatfrica.org/latest/news/post/572-drought-tolerant-seeds-help-harvests-double-in-kenya>



*Empowered lives.
Resilient nations.*

Published by

The United Nations Development Programme -
Programme of Assistance to the Palestinian People
(UNDP-PAPP)

3 Ya'qubi St., P.O Box 51359
Jerusalem 91191

Tel: +972-2-626-8200
Fax: +972-2-626-8222