



Food and Agriculture  
Organization of the  
United Nations



European Union



# FOOD SYSTEMS PROFILE - PALESTINE

Catalysing the sustainable and inclusive  
transformation of food systems



Palestine



# **FOOD SYSTEMS PROFILE - PALESTINE**

Catalysing the sustainable and inclusive transformation of food systems

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# FOOD SYSTEMS PROFILE

## PALESTINE

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### Key messages

The Occupied Palestinian Territory comprises the West Bank and the Gaza Strip,<sup>1</sup> which have no geographical border with one another, being separated by Israel. The climate in the territory is predominantly Mediterranean (FAO, 2019b), though there is substantial climate diversity among regions and governorates, given different altitudes, proximity to desert areas and shorelines (including the Mediterranean Sea and Dead Sea). The Gaza Strip is a relatively homogeneous coastal plain, while the West Bank is more diverse, as it is in four climatic zones, namely the Jordan Valley, Eastern Slopes, Central Highland and Semi-coastal. The mean annual rainfall in the West Bank averages 420 mm per year (ranging from less than 100 mm to 650 mm per year, in the Eastern and Western Governorates, respectively), and 276 mm per year in the Gaza Strip (1989–2018) (EQA, 2016a).

The Occupied Palestinian Territory is a lower-middle-income economy with an estimated 2019 gross national income (GNI) per capita of USD 3 883 (USD 2 045) for females and USD 10 666 for males, which highlights significant gender disparity. The population was estimated in 2021 at 5.2 million people, 2.1 million living in the Gaza Strip and 3.1 million in the West Bank (PCBS, 2021a). Almost 80 percent of the population lives in urban areas. The territory has shown significant progress in all human development index (HDI) indicators. Between 2004 and 2019, HDI values increased from 0.651 to 0.727, a change of 11.7 percent – putting the Occupied Palestinian Territory in the high human development category (UNDP, 2023).

For more than 50 years, however, the Occupied Palestinian Territory has been under Israeli occupation, which has put it in a fragile security situation. It faces numerous restrictions on the movement of people and goods and on access to natural resources and markets. The protracted crisis, driven by the Israeli occupation, has led to various political, socioeconomic and developmental challenges, and resulted in the creation of a largely distorted economy based on non-tradable sectors, such as services, finance and public administration (UNTAD, 2022). These trends present significant challenges for the sustainability of food systems in the territory. The contribution of the agrifood sector is approximately 6.4 percent of gross domestic product (GDP); agriculture accounts for 3.6 percent of GDP and the share from agrifood processing is estimated at 2.8 percent. The agrifood sector accounts for almost one-third of the GDP generated in tradable activities (FAO, 2018).

Key issues for Palestinian food systems include:

- the restrictions imposed by the Israeli occupation on movements of people and goods between the West Bank and the Gaza Strip, particularly the blockade of the Gaza Strip and the partition of

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<sup>1</sup> In this document, the West Bank includes East Jerusalem.



the West Bank into Areas A, B and C,<sup>2</sup> with growing levels of administrative and military authority of Israel, has disrupted the proper functioning of markets, affecting the availability of food and physical access to it. According to United Nations General Assembly (2022), the cost of the restrictions imposed on Area C, which is the largest area and has the most valuable natural resources, is estimated at USD 2.5 billion per year. For the period 2000–2020, this implies a cumulative cost equivalent to three times the 2020 GDP of the West Bank and 2.5 times the GDP in the same year;

- rapid urbanization and population growth, through the continuous decline in the areas devoted to agriculture use, along with natural resource degradation and climate change, have further affected domestic food production, which has led to greater dependence on imported foods, further increasing vulnerability to macroeconomic, political (including conflict) and environmental shocks;
- approximately 30 percent of the population was living below the poverty line in 2017 (PCBS, 2018a), (with large disparities across regions) and the unemployment rate reached 26 percent in 2021 (being more prominent in the age groups of 15–24 years, at 42 percent, and 25–34 years, at 32 percent). This has had a significant impact on the economic access to food;
- as a result, the food insecurity situation in the territory is widespread and increasing, with almost one-third of the population deemed food insecure in 2020 and more than 60 percent of households in the Gaza Strip moderately or severely food insecure (MAS, 2021). Certain groups and regions tend to be more vulnerable, such as women, refugees, urban areas and Bedouin communities in Area C in the West Bank. The situation has worsened further due to the COVID-19 pandemic.
- high food insecurity has contributed towards rising levels of malnutrition. Stunting and wasting are not very prevalent in the Occupied Palestinian Territory, but overweight and obesity are alarmingly high. Micronutrient deficiencies are prominent and the situation is highly worrying for pregnant and lactating women, and very young children. Changing dietary habits and lifestyle and the lack of nutrition-sensitive awareness programmes have contributed to this issue;
- the dominance of Israeli occupation over agricultural land and natural resources has been affecting the territory's food systems by limiting access to critical inputs, especially water. The scarce and vulnerable natural resource base, limited availability of reliable and affordable energy sources, and the rising costs of inputs (such as feed and fertilizer) throughout the entire agrifood value chains have led to declining profitability. The impact of the Ukraine-Russia conflict has further limited access to agricultural inputs and fertilizers and exacerbated the cost of energy;
- moreover, the agriculture sector operates in an enclave economy in which access to foreign markets is limited, and inputs for food production and outputs to be marketed in international markets are to a large extent under the direct control of Israel. Palestinian borders and custom controls, as well as export and import regulations are controlled by Israel (in particular, for some agricultural inputs, such as fertilizers, that are classified as restricted according to the dual-use list system<sup>3</sup>). This is particularly challenging because the West Bank and the Gaza Strip are practically disconnected from the region (Arab countries), as well as from the rest of the world;

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<sup>2</sup> Areas A and B are subdivided into 166 islands with no contiguity and surrounded by Area C, which is the only contiguous part of the West Bank. Area C is largely inaccessible to Palestinian producers, although it is the largest area and has the most valuable natural resources, such as fertile land, minerals, stone, tourist attractions and ingredients for cosmetic products (UNCTAD, 2022).

<sup>3</sup> Dual-use goods are products and technologies normally used for civilian purposes, but which may have military applications. The full list is in annex II of the 2019 Economic Monitoring Report to the Ad Hoc Liaison Committee of the World Bank (World Bank, 2019).





- the low adaptive capacity of the food systems to sustainably use and manage the natural resources, along with weak regulatory and monitoring mechanisms, have led to unsustainable agricultural practices. These practices are contributing to environmental degradation and loss of biodiversity, which further threatens the long-term sustainability of food systems. The weak regulatory system and unsustainable agricultural practices have also contributed to food safety issues;
- lack of an adequate enabling environment and weak institutions (largely funded by external sources for recurrent as well as development expenditure) (EEAS, 2022) and governance, including restrictions on the development of critical infrastructure highly vulnerable to targeted destruction by Israel (UNCTAD, 2015b), have led to limited incentives for private sector investments, with the occupation further increasing uncertainty. On the positive side, recent developments and coordination between the government and development partners have allowed increasing alignment and harmonization of coordinated interventions to reverse the trend, especially for the development of the agrifood sector;
- the labour market is inefficient, characterized by high unemployment rates, a large disparity between the West Bank and the Gaza Strip, and a high generational gap. The economic restrictions on the territory's trade and development adversely affect the capacity to generate employment, and increase the intrinsic risks in the Palestinian economy that hamper entrepreneurship;<sup>4</sup> and
- finally, the zoning and separation of the West Bank from the Gaza Strip is a major issue, contributing to significant territorial inequalities.

Nevertheless, thousands of Palestinian families find their source of livelihood in the agrifood system and the agrifood sector are critical for food security and nutrition, and the resilience of Palestinian households and communities. In this context, the Government of the Occupied Palestinian Territory undertook a strategic thinking process in recent years, which led to the formulation of the National Policy Agenda 2017–2022 (NPA) and subsequently to the endorsement in October 2020 of the cross-sectoral National Food and Nutrition Security Policy in Palestine 2030 (NFNSP) and of the National Investment Plan for Food and Nutrition Security and Sustainable Agriculture 2020–2022 (NIP). The comprehensive strategic and investment framework is supporting the territory's effort to address the dispersed, imbalanced and uncoordinated policy and investment response.

This rapid Food System Assessment (FSA) represents the opportunity for continuity, highlighting under a renewed analytical framework, the key drivers to unlock the full potential of the food system in addressing the key food security and nutrition, socioeconomic and environmental challenges faced by the Palestinian society and territory. In the nationally agreed set of investment priorities for the food system indicated in NIP, the FSA process has made it possible to narrow the focus to the key drivers of change. These areas include: first, reverting exacerbating malnutrition levels through nutrition-specific and nutrition-sensitive investment; second, enhancing climate adaptation capacities and water resources management; third, developing inclusive and employment generating agrifood value chains; and fourth, addressing the peculiar territorial unbalances with appropriate policy and investment instruments.

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<sup>4</sup> As reported by UNCTAD (2017): "although the economy grew by an average 7.4 percent in 1969–1992 and 4.4 percent in 1994–2016 following the establishment of PNA and despite low labour force participation rates, the domestic economy has consistently failed to provide employment for more than one-third of the workforce".



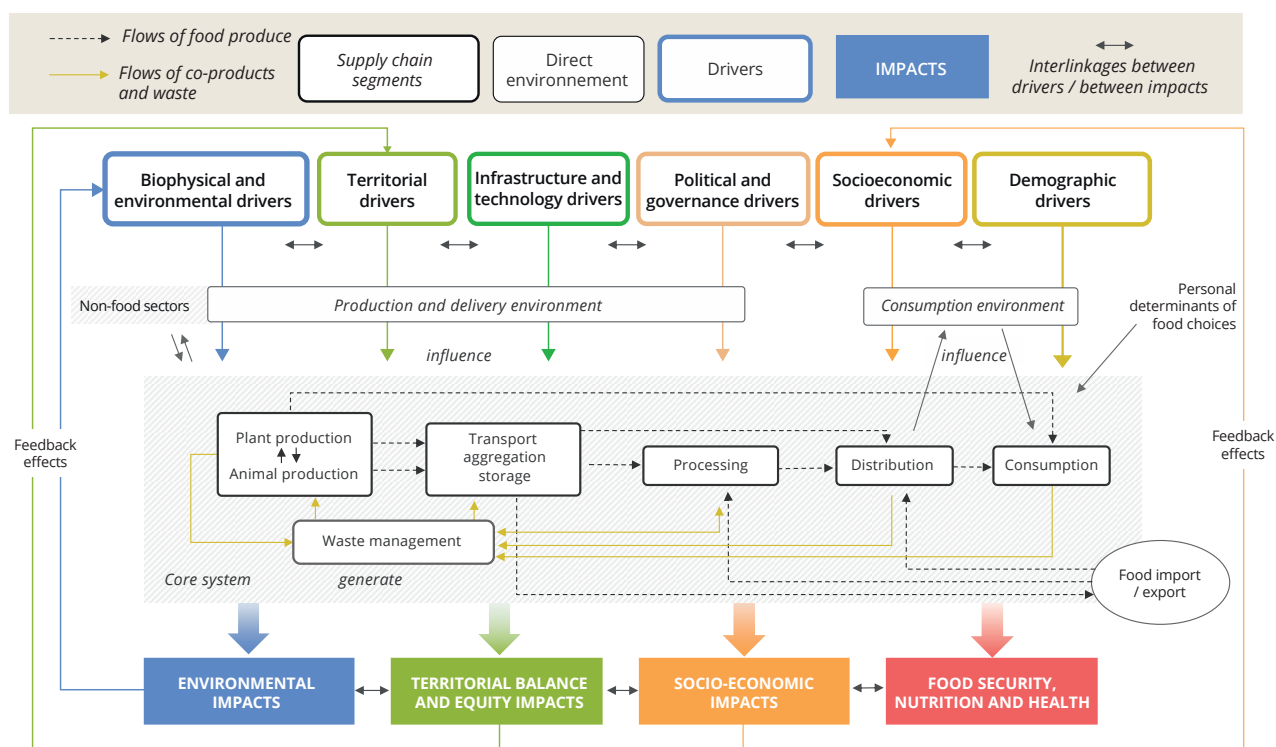
## Methodology and process

This profile is the result of collaboration between the Ministry of Agriculture, the **Palestinian Economic Policy Research Institute (MAS)**, supported by the Food and Agriculture Organization of the United Nations (FAO) and the European Union, in close consultation with national and international experts. It was implemented in the Occupied Palestinian Territory from July 2021 to September 2021. The methodology used for preparing this brief is the result of a global initiative of the European Union, FAO and CIRAD to **support the sustainable and inclusive transformation of food systems**. This assessment methodology is described in detail in the joint publication entitled *Catalysing the sustainable and inclusive*

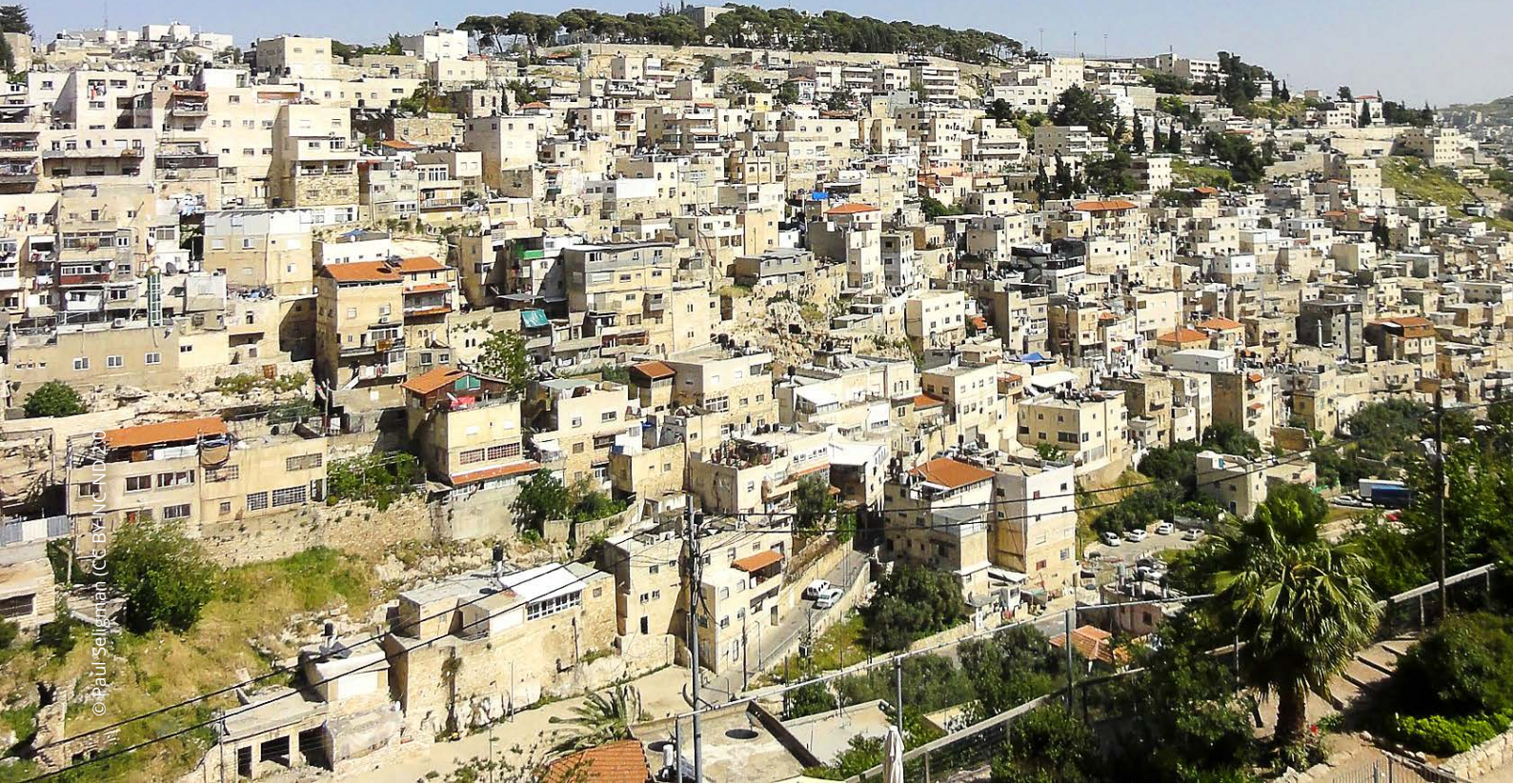
*transformation of food systems: conceptual framework and method for national and territorial assessment* (David-Benz et al., 2022).



Figure 1. Analytical representation of the food system



**Source:** David-Benz, H., Sirdey, N., Deshons, A., Orbell C. & Herlant, P. 2022. *Catalysing the sustainable and inclusive transformation of food systems: conceptual framework and method for national and territorial assessment*. Rome, Brussels and Montpellier, France. FAO, European Union and CIRAD. <https://doi.org/10.4060/cb8603en>



The approach involves a detailed understanding of the key challenges along the four dimensions of sustainable and inclusive food systems: (i) food security, nutrition and health; (ii) inclusive economic growth, jobs and livelihoods; (iii) sustainable natural resource use and environment; and (iv) territorial balance and equity. Aimed at identifying critical issues affecting the sustainability and inclusivity of food systems, the assessment is qualitative and quantitative in nature. Critical challenges and key food systems dynamics are specified in the form of **Key Sustainability Questions (KSQs)**, whose answers (see schematic representations for all KSQs) help identify **systemic levers** and areas of action that are essential to bring about desired transformations in food systems.

This approach is designed as a preliminary rapid assessment for food systems and can be implemented over a period of 8–12 weeks. The methodology has been applied in more than 50 countries as a first step to support the transition towards sustainable food systems.





## National context: key figures

The situation of the Occupied Palestinian Territory is unique in several aspects, including, among others, the geography of territory is comprised of two regions, namely the West Bank and the Gaza Strip, that are disconnected; both regions are de facto under Israeli occupation; and both are practically disconnected from the region (Arab countries), as well as from the rest of the world. The economy of the Occupied Palestinian Territory is not independent, but is a subeconomy of the Israeli economy. It does not have a national currency and depends on Israel for foreign trade and for a tax collection

system (UNCTAD, 2015a).<sup>5</sup> Moreover, Israel has complete control over its natural resources, particularly water, and dominance and control over border crossings. Consequently, inputs for food production and outputs to be marketed in international markets are under the direct control of the military authority of the Israeli occupation according to the dual-use list, and the economy is suffering from missed development opportunities (United Nations General Assembly, 2022). Table 1 presents a summary of relevant evidence on food Systems of the Occupied Palestinian Territory.

**Table 1. Country level data – Occupied Palestinian Territory**

| Food security and nutrition   | Demography   |
|---|--|
| <ul style="list-style-type: none"> <li>– Approximately 1.7 million inhabitants are food insecure – 80 percent in the Gaza Strip and 20 percent in the West Bank (MAS, 2021).</li> <li>– Accelerated increase in the prevalence of malnutrition in children under the age of 5 years – 8.7 percent suffer from moderate and severe stunting, 1.3 percent from wasting, 2.1 percent are underweight and 8.6 are overweight (PCBS, 2021b).</li> <li>– Overweight and obesity have been on an upward trend over the past two decades (United Nations, 2020), increasing by 10 percentage points for both men and women, to reach levels higher than regional and global averages (obesity: 39 percent for women, 26 percent for men; overweight: 70 percent for women, 64 percent for men).</li> <li>– 31 percent of pregnant women suffer from iron-deficiency anaemia (2013) (United Nations, 2020).</li> <li>– Heart diseases constitute the main burden of chronic diseases in the Occupied Palestinian Territory; deaths and years of life lost are higher in the Gaza Strip (40 percent, 9.8/1 000) compared to the West Bank (36.7 percent, 9.1/1 000) (Mosleh, Aljeesh and Dalal, 2016).</li> <li>– Generalized insufficient intake of fruits, legumes, omega-3 fatty acids; and red meat, including processed meat products (Daghlas, 2021), and consumption of salt and sugar-sweetened beverages are excessive (Stene <i>et al.</i>, 1999).</li> <li>– The share of food expenditure decreased to 30.5 percent in 2017 from 35.9 percent in 2011 (PCBS, 2018a).</li> </ul> | <ul style="list-style-type: none"> <li>– In mid-2022, the population of the Occupied Palestinian Territory is estimated at 5.36 million, 3.19 million in the West Bank and 2.17 million in the Gaza Strip (PCBS, 2021a); the annual growth rate was estimated at 2.3 percent in 2022 (UN, 2022)</li> <li>– In 2017, 77 percent of the residents of the Occupied Palestinian Territory lived in urban areas, 15 percent in rural areas and 8 percent in refugee camps (PCBS, 2018d)</li> <li>– Elderly people (age 65 and older) constitute only 5 percent of the population (Inas, 2019)</li> <li>– In 2022, life expectancy at birth for Palestinians was 74.4 years, compared to 56 years in 1971 (United Nations, 2022)</li> <li>– In 2022, the total fertility rate (children per woman) was 3.44 (United Nations, 2022)</li> </ul>  |
| Human capital   | Territorial imbalances   |
| <ul style="list-style-type: none"> <li>– The illiteracy rate among individuals 15 years and older has declined over the past two decades and was only 2.6 percent in 2019 – with males and females at 1.2 percent and 4.1 percent, respectively (PCBS, 2019).</li> <li>– The 2020 educational attainment for individuals (15 years and above) were 11.8 (elementary), 36.6 percent (preparatory), 21.7 percent (secondary), 5.9 percent (intermediate) and 17.1 percent (bachelor's degree and above) (PCBS, 2021a).</li> </ul>   | <ul style="list-style-type: none"> <li>– Dramatic increase in the proportion of the population living in urban areas. The urban population has more than doubled since 1990 and nearly 80 percent of Palestinians live in urban areas (United Nations, 2018).</li> <li>– The population density was 857 people per km<sup>2</sup> in 2020 with significant regional variation – very high in the Gaza Strip (5 693 inhabitants per km<sup>2</sup>) and moderate in the West Bank (545 per km<sup>2</sup>) (PCBS, 2021a).</li> <li>– The territory has 140 600 agricultural holdings, 82.4 percent in the West Bank and 17.6 percent in the Gaza Strip; 51 percent of them are classified as small (less than 3 dunums or 0.3 hectares)<sup>6</sup> (PCBS, 2022a).</li> <li>– Only 8.3 percent of farms (more than 20 dunums or 2 hectares) manage 50.4 percent of the agricultural area (PCBS, 2022a).</li> <li>– There are 3 500 km of paved roads and 445 km of unpaved roads in the West Bank; these are not distributed uniformly (PCBS, 2020).</li> </ul> |

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<sup>5</sup> As reported by UNCTAD (2015a, p. 5): "Israel collects taxes on Palestinian imports on behalf of the Palestinian National Authority and then transfers them to the Authority after levying 3 percent collection and processing fees. Effectively, this has left the Palestinian National Authority exposed not only to the actual withholding of revenue by Israel, but also to a continuous threat of withholding."

<sup>6</sup> 10 dunums = 1 hectare



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| Agricultural sector  | Imbalanced access to water resources  |
|--|---|
| <ul style="list-style-type: none"> <li>- The value added share of agriculture was estimated at 6.5 percent of GDP in 2021 (PCBS, 2021c).</li> <li>- The value added of agriculture in Occupied Palestinian Territory was nearly USD 980 million in 2021 (World Bank, 2023).</li> <li>- High fluctuation of prices on a daily basis due to the lack of a management system to coordinate activities is resulting in lack of information-sharing about supply and demand of many products (ARIJ, 2015).</li> <li>- Growth of input prices (Ammoniac and NPK prices tripled from 2019 to late 2022) has been reducing farm profitability (FAO, 2023)<sup>7</sup>.</li> <li>- Very low prices of selected products at the peak of the season due to dumping from the Israeli side.<sup>8</sup></li> <li>- Higher prices of selected agricultural products (e.g. seedless grapes) when demand on the Israeli market is high.<sup>9</sup></li> </ul> | <ul style="list-style-type: none"> <li>- More than 85 percent of Palestinian water sources are under the control of Israeli forces in the West Bank.</li> <li>- The daily allocation of water per capita for domestic purposes in the Occupied Palestinian Territory was 82 litres/capita (86 litres/capita in the West Bank versus 77 litres/capita in the Gaza Strip) – less than minimum recommended levels (PCBS and PWA, 2021)</li> <li>- Only 40 percent of households had access to safely managed water that was free of pollution, ranging from 66 percent of households in the West Bank to a mere 4 percent in the Gaza Strip.</li> <li>- More than 97 percent of the Gaza Strip coastal aquifer is not suitable for drinking purposes (PWA, 2015)</li> <li>- The amount of wastewater that is fully treated is quite low, below 20 percent in total (Ives <i>et al.</i>, 2018)</li> </ul> |
| Food losses  | Poverty and unemployment  |
| <ul style="list-style-type: none"> <li>- Moderate food losses range from 12 to 22 percent quantitative losses for selected food supply chains (MAS, 2020).</li> <li>- Significant losses in milk, particularly during summer (due to spoilage)</li> </ul>  | <ul style="list-style-type: none"> <li>- In 2017, 30 percent of the population lived below the poverty line.</li> <li>- In 2020, the unemployment rate was 25.9 percent, 22.5 percent for men and 40.1 percent for women (PCBS, 2021d)</li> <li>- Very high youth unemployment rate (42 percent for the age group 15–24 years – 70 percent for females, and 36.6 percent for males; and 32 percent for the age group 25–24 years – 51.5 percent for females, and 26.7 percent for males) (PCBS, 2021d)</li> <li>- Unemployment was 15.7 percent in the West Bank and 46.6 percent in the Gaza Strip (PCBS, 2021d)</li> </ul>  |
| Climate change challenges  | Energy cost and import dependency   |
| <ul style="list-style-type: none"> <li>- Both minimum and maximum temperatures have increased between 1989 and 2016 (ECMWF 1989–2016, cited in FAO, 2019b).</li> <li>- A general increase in seasonal mean temperature (of the order of 2.5 °C) is predicted by 2055, especially in winter and autumn (Hochman <i>et al.</i>, 2018).</li> <li>- Growing seasons are shifting and usage of pesticide is increasing to deal with the new pathogen outbreaks.</li> </ul>  | <ul style="list-style-type: none"> <li>- Approximately 91 percent of the energy available in the Occupied Palestinian Territory is imported, 8 percent is purchased from the Palestine Electric Company and only 1 percent is from self-generation and renewable energy (Government of Occupied Palestinian Territory, 2018).</li> <li>- The Gaza Strip has suffered from a chronic electricity deficit. There are frequent electricity cuts and the power is usually on for approximately 12 hours per day, on average (OCHA, 2023).</li> <li>- Energy prices increased by 9 percent and fuel prices by 12 percent in the first months after the start of the Ukraine-Russia war (WFP, 2022).</li> </ul>   |
| The impact of the Ukraine-Russia conflict  |   |
| <ul style="list-style-type: none"> <li>- Wheat flour prices increased by 36 percent, vegetable oil prices by 18 percent and fodder prices by 35–40 percent since the beginning of the war in Ukraine (WFP, 2022).</li> </ul>   |   |

<sup>7</sup> FAO, 2023 (unpublished). The Palestinian agricultural sector face to the global economic crisis. Interviews with key suppliers.

<sup>8</sup> As cited in stakeholder discussions during the consultation process.

<sup>9</sup> Idem.



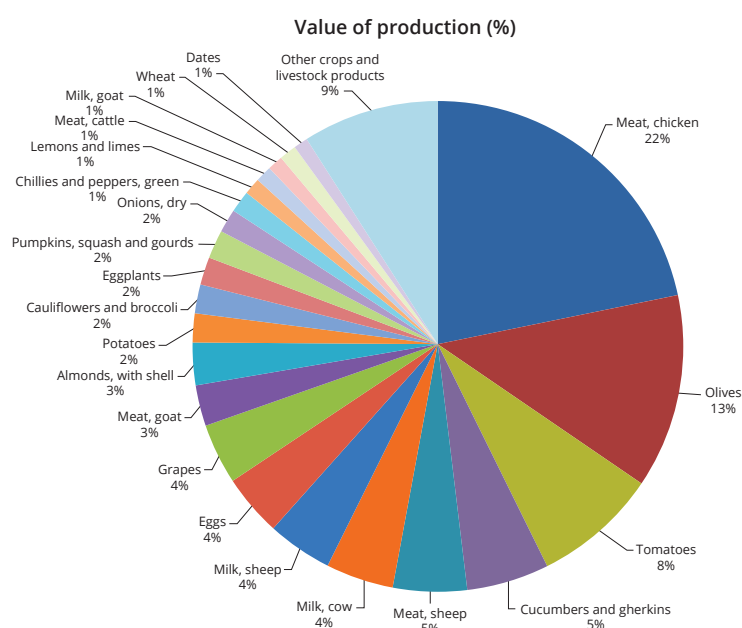
## Key figures and trends in food production, consumption and trade

Official data show that the contribution of the agricultural sector to the economy of the Occupied Palestinian Territory declined drastically over the past few decades. In 1967, a time when Israel occupied the West Bank and Gaza Strip, the contribution of this sector amounted to approximately 53 percent of the total GDP, whereas in 2016, it was approximately 2.8 percent in the West Bank and 4.0 percent in the Gaza Strip (UNSCO, 2016). These figures are misleading, however, in that they give the impression that the economic significance of agriculture is now marginal. They do not take into account informal agricultural activity and nor do they include agricultural industries, such as the processing of dairy products, olive oil and pickling cucumbers, which are recorded under “industry”. Furthermore, the agricultural activities on plots with areas less than 1 000 m<sup>2</sup>, as well as “part-time” farming, are not counted. Even

though the contribution to GDP has diminished drastically in recent years, the agriculture sector remains vital for the economy (Kittaneh, 2020).<sup>10</sup> It contributes highly to food security for a society living under occupation, particularly in marginalized rural areas, and creates employment opportunities (PCBS, 2021d).

In terms of value, Figure 2 shows the structure of production for the agriculture sector in the Occupied Palestinian Territory in 2019 (FAO, 2021). About half the value comes from livestock products – meat from chickens (22 percent), sheep (5 percent), goats (3 percent) and cattle (1 percent); milk from cows (4 percent), sheep (4 percent) and goats (1 percent); and eggs (4 percent). Olives (13 percent), tomatoes (8 percent), cucumbers and gherkins (5 percent), grapes (4 percent) and almonds (3 percent) account for notable shares, along with other fruits and vegetables.

**Figure 2. Structure of production (% of value ) in 2019**

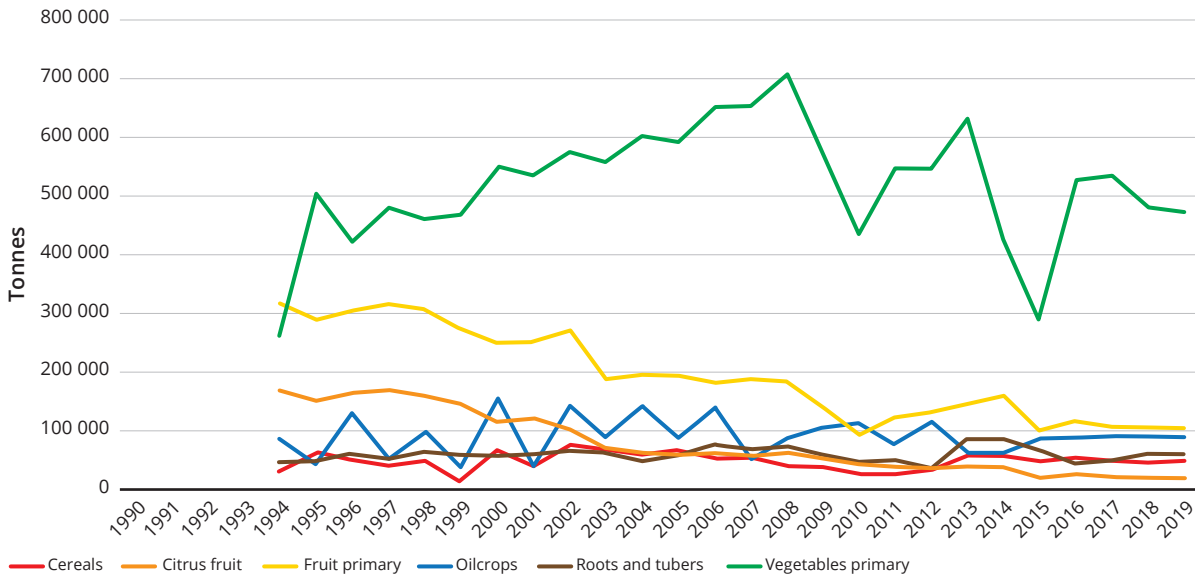


**Source:** FAO. 2021. FAOSTAT Production Database. In: FAO. Rome. Cited 20 March 2023. [www.fao.org/faostat/en/#data](http://www.fao.org/faostat/en/#data)

<sup>10</sup> The value of agricultural output increased from USD 700 million in 2006 to USD 2 500 million in 2018 (and the value added increased from USD 270 million to USD 1 100 million during the same period).



**Figure 3. Key agricultural commodities production volume (1990–2019)**



**Source:** FAO. 2021. FAOSTAT Production Database. In: FAO. Rome. Cited 20 March 2023. [www.fao.org/faostat/en/#data](http://www.fao.org/faostat/en/#data).

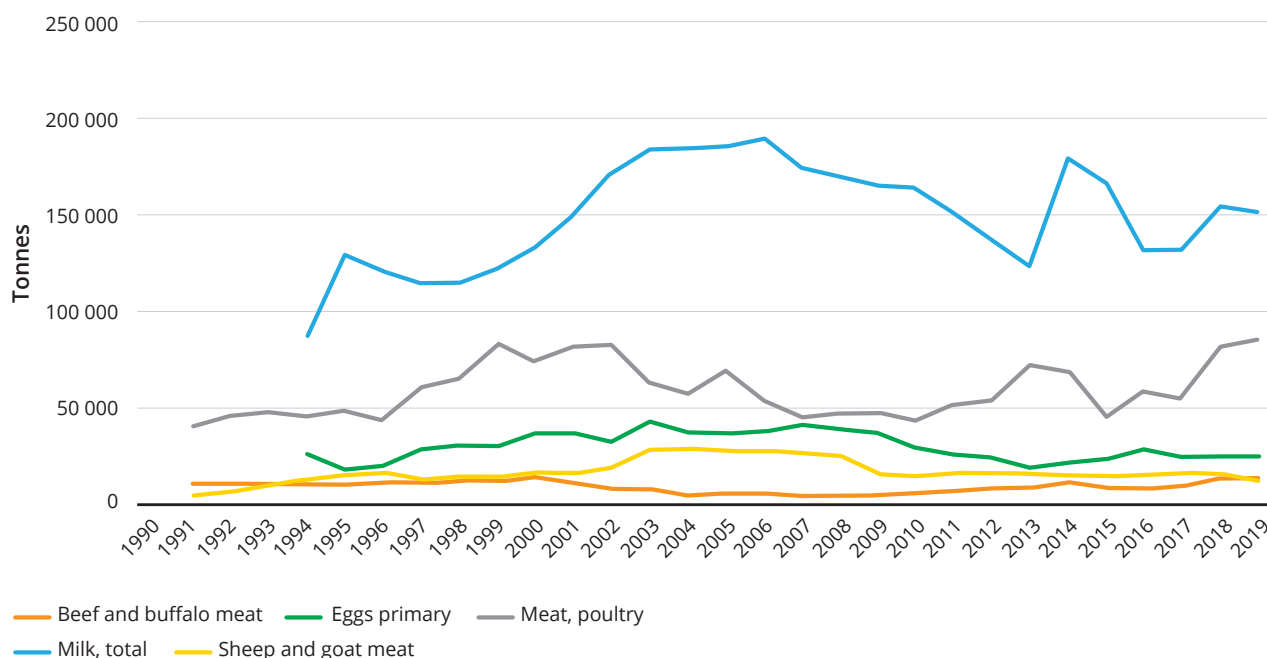
Figure 3 and Figure 4 present production trends for key agricultural and livestock commodities over the past 25 years, respectively. The production of fruits has decreased significantly, reflecting changes induced in the crop composition after 1967 by Israeli policies (which continued even after the establishment of the Palestinian Authority). In particular, there was a shift from dependence on oranges to the cultivation of vegetables and flowers in the Gaza Strip, coupled with a decline in the cultivation of commercial crops in favour of own consumption in the West Bank. Consequently, the production of vegetables increased somewhat, albeit during a declining trend in the past decade. According to the preliminary results of the latest agriculture census (PCBS, 2022b), olive tree cultivation covers the largest agricultural area – approximately 57 percent of cultivated land in the Occupied Palestinian Territory – and 85 percent of the horticulture cultivated area. Field crops, vegetables and other fruit trees occupy the remaining area, at 19.8 percent, 18.5 percent and 9.3 percent, respectively. Compared to the 2010 census (PCBS, 2010), the area cultivated with vegetables increased by approximately 58 percent. In the Gaza Strip, vegetable crops increased from 32 percent of the total cultivated

area to 53 percent, followed by olive trees and other field crops and fruit trees, respectively, occupying 26.2 percent, 16.4 percent and 4.6 percent of the total cultivated area in the Gaza Strip. It is important to note that almost 90 percent of the agricultural area is in the West Bank; only 10 percent is in the Gaza Strip.

The livestock sector accounts for approximately 45 percent of total agricultural value (FAO, 2021). Rural households raise livestock as a secondary activity to provide income, and women contribute greatly to this (FAO, 2013). In the past decade, particularly relevant is the growth of the poultry industry, as the number of birds more than doubled between 2010 and 2021 (PCBS, 2022a). While there has been significant growth in the Gaza strip, poultry farms are increasing in all governorates (both broilers and layers), aided by a high degree of modernization. Apiculture has also increased remarkably; the number of beehives increased by 68 percent between 2010 and 2021 (PCBS, 2022a). Dairy farms are also expanding, although mechanization is not at the level of poultry farms. As Figure 4 shows, milk and poultry meat production has increased over the years. Nonetheless, production in general has not kept pace with population growth in the territory.



**Figure 4. Key livestock commodities production volume (1990–2019)**



**Source:** FAO. 2021. FAOSTAT Production Database. In: FAO. Rome. Cited 20 March 2023. [www.fao.org/faostat/en/#data](http://www.fao.org/faostat/en/#data).

Another important element is the food processing industry. While it is still in its infancy in the Occupied Palestinian Territory, there has been steady development and growth of food industries, particularly for dairy products, olive oil and pickling. A significant portion of the inputs (cucumbers, dates, tomatoes, eggplants/aubergines, almonds and grapes) are obtained from local sources. Farmers and other stakeholders have welcomed this development, particularly considering that the food processing industry has spillover effects on other sectors and industries.

Increasing population growth, accompanied with rapid urbanization, has led to increasing pressure on the agriculture sector. The widening gap between local production and consumption has made imports increasingly important in meeting food needs in recent years. Even though the Occupied Palestinian Territory is largely, if not completely, self-sufficient regarding vegetables, grapes, figs, olive oil, poultry, meat, eggs and honey, at the national level, the territory is highly

food insecure and relies on imports for 40 percent of its main food items and more than 95 percent of its cereals and pulses requirements (MAS, 2017). The import dependency ratio, reflecting the share of food consumed from imports, has risen noticeably; it was 32 percent in 2022 (WFP, 2022), while agricultural production continued to decline. Even if domestic food production were to be promoted to enhance food security, the Occupied Palestinian Territory would need to continue to rely heavily on imports to meet much of its food needs (MAS, 2017).

Table 2 and Table 3 present the trends in foreign trade of key commodities and the composition of exports and imports of agrifood, respectively. Agricultural exports from the Occupied Palestinian Territory have been negatively affected by restrictions imposed by the Israeli occupation and political instability.<sup>11</sup> The territory has no control over most aspects of its international trade and suffers a chronic trade deficit.

<sup>11</sup> The share of exports in GDP in 2012 was only 7 percent, one of the lowest in the world.





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As can be seen from Table 2, animal feed and live animals represent the largest commodity groups among the territory's imports, accounting for a combined share of approximately 22 percent; tobacco and beverages follow, accounting for 17 percent. Declining animal productivity and access to feedstuffs defined the spiking trends in imports of live animals (+140 percent in 2020 compared to 2015), feeds (+89 percent), and dairy products (+80 percent). Flour and cereal preparations are another area of growth, rising 77 percent. Notably, imports of sugar and soda

beverages increased by 16 percent and 35 percent, respectively, reflecting strong shifts in consumption patterns towards Western lifestyles.<sup>12</sup> Overall, imports of foodstuffs have increased by 44 percent over the 5-year period. Subsequently, the conflict in Ukraine and economic sanctions imposed on the Russian Federation have resulted in a global shortage of essential products, such as oil, gas and cereals, for which the Occupied Palestinian Territory is highly dependent on imports from these two countries, and also has led to a rise in food prices (WFP, 2022).

**Table 2. Recent trends in agrifood imports to the Occupied Palestinian Territory (in USD million)**

| Rank | Commodity                  | 2015         | 2020         | Share in 2020 | 5 year compound annual growth rate |
|------|----------------------------|--------------|--------------|---------------|------------------------------------|
| 1    | Animal feed                | 148          | 280          | 13%           | 89%                                |
| 2    | Live animals               | 81           | 195          | 9%            | 140%                               |
| 3    | Tobacco                    | 134          | 191          | 9%            | 43%                                |
| 4    | Beverages                  | 143          | 172          | 8%            | 20%                                |
| 5    | Flour/Cereals preparations | 88           | 156          | 7%            | 77%                                |
| 6    | Dairy, eggs, honey         | 83           | 149          | 7%            | 80%                                |
| 7    | Fruit & nuts               | 103          | 140          | 6%            | 35%                                |
| 8    | Cereals                    | 148          | 96           | 4%            | -35%                               |
| 9    | Cocoa preps                | 48           | 94           | 4%            | 95%                                |
| 10   | Other                      | 522          | 688          | 32%           | 32%                                |
|      | <b>Total</b>               | <b>1 500</b> | <b>2 162</b> | <b>100%</b>   | <b>44%</b>                         |

**Source:** Trade Data Monitor. 2023. In: *Trade Data Monitor (2015–2020)*. Charleston, South Carolina. Cited 22 March 2023. [www.tradedatamonitor.com](http://www.tradedatamonitor.com)

<sup>12</sup> FAO calculations, based on Trade Data Monitor data (2023).



In contrast, agrifood exports declined by 14 percent over the 5-year period, with vegetables dropping the most, followed by tobacco (Table 3). Revenue from edible nuts and fruits, and

the preparations of them almost doubled. Key exports are olives, olive oil and fruits, accounting for almost 40 percent of the export value. Most of these goods are destined for Israeli markets.

**Table 3. Recent trends of agrifood exports from the Occupied Palestinian Territory (in USD millions)**

| Rank | Commodity                        | 2015       | 2020       | Share in 2020 | 5 Y CAGR    |
|------|----------------------------------|------------|------------|---------------|-------------|
| 1    | Fruit & nuts                     | 18         | 45         | 19%           | 152%        |
| 2    | Oils                             | 44         | 44         | 19%           | 1%          |
| 3    | Edible preps                     | 11         | 19         | 8%            | 81%         |
| 4    | Beverages                        | 9          | 18         | 8%            | 113%        |
| 5    | Fruit and vegetable preparations | 10         | 14         | 6%            | 43%         |
| 6    | Cocoa preps                      | 6          | 14         | 6%            | 114%        |
| 7    | Spice, tea                       | 15         | 13         | 5%            | -16%        |
| 8    | Vegetables                       | 69         | 12         | 5%            | -82%        |
| 9    | Tobacco                          | 38         | 9          | 4%            | -77%        |
| 10   | Other                            | 51         | 45         | 19%           | -13%        |
|      | <b>Total</b>                     | <b>270</b> | <b>232</b> | <b>100%</b>   | <b>-14%</b> |

**Source:** Trade Data Monitor. 2023. In: *Trade Data Monitor (2015–2020)*. Charleston, South Carolina. Cited 22 March 2023. [www.tradedatamonitor.com](http://www.tradedatamonitor.com)

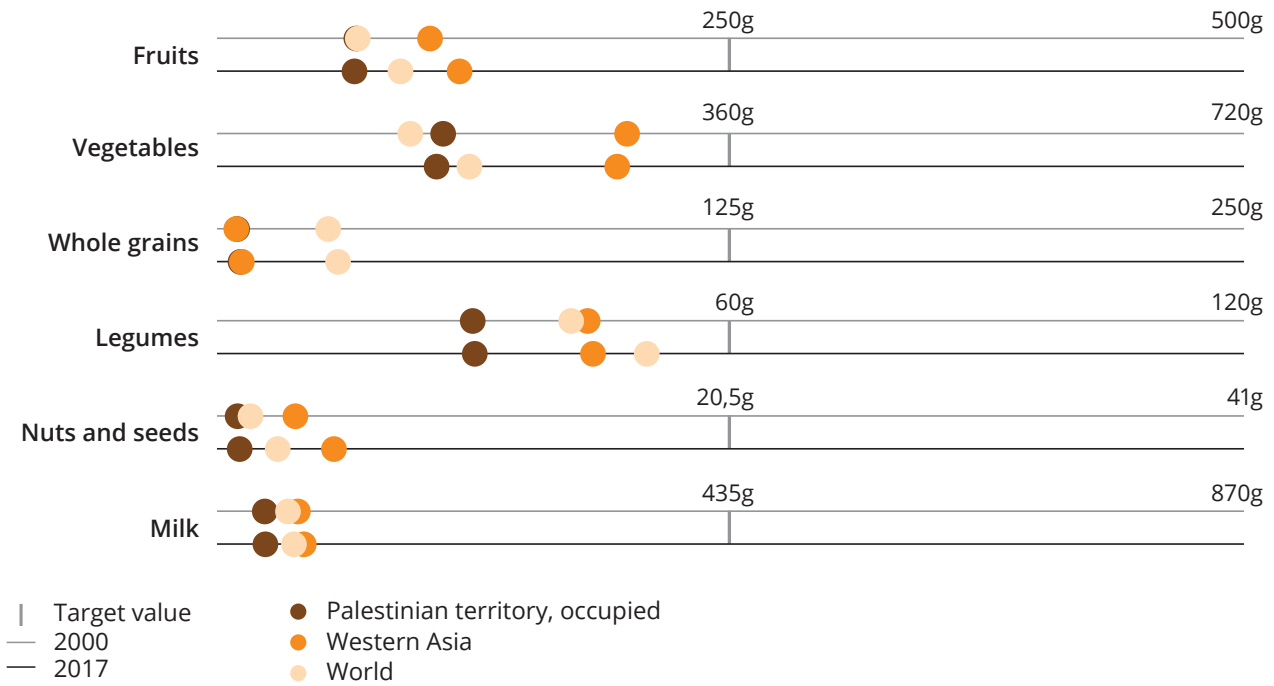
Consumption trends in the Occupied Palestinian Territory have changed significantly over the years, in step with globalization. While data on food consumption are not frequently gathered, relatively recent surveys, such as the Socio-Economic & Food Security Survey (SEFSec) 2014 (FSS, 2016), show that Palestinian households consume calorie-intensive diets with carbohydrates, such as cereals, sugar (empty calories) and fats, being the main sources of food energy. An estimated 86 percent of the study population consumed less than the recommended quantity of fruits and vegetables per day, which indicates that the majority of the population is missing foods rich in dietary fibre (Figure 5). Consumption of pulses was also low, being the least-consumed among all other food items (less than twice per week), despite being

cheap and nutritious. Consumption of suboptimal diets in the Occupied Palestinian Territory is closely related to poverty and widespread lack of nutritional knowledge. Data show that healthy foods – mainly fruits, vegetables and grains – are not affordable by a significant portion of the society. Some commodities (such as avocados and honey) are hardly affordable by poor Palestinians.<sup>13</sup> A snapshot of the diet of Palestinians in the Global Burden of Disease Study 2017 (Afshin *et al.*, 2019) has further confirmed that consumption of fruits and vegetables in the Occupied Palestinian Territory is below the minimum recommended levels – and lags intakes globally and in Asia. Equally alarming, intake of salt and sugar-sweetened beverages substantially exceeds recommended levels (Figure 6).

<sup>13</sup> Authors' estimates based on PCBS data (PCBS, 2019).

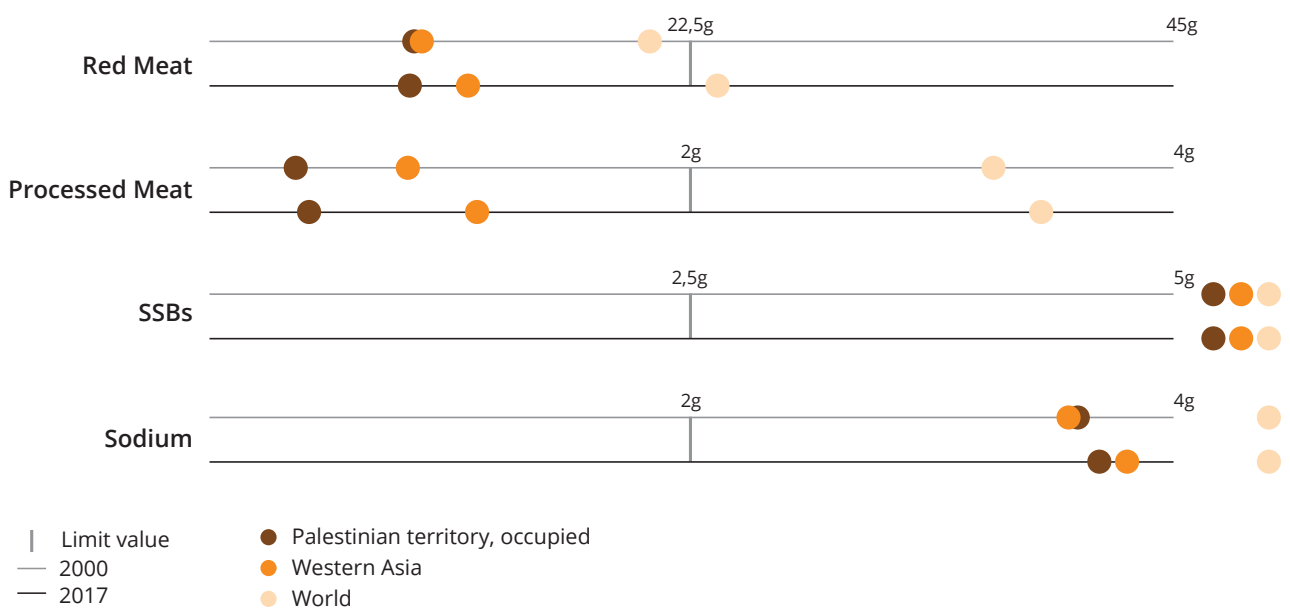


Figure 5. Estimated per capita intake of fruits, vegetables, whole grains, legumes, nuts and seeds, and milk (grams per day)



Source: Mosleh, M., Dalal, K. & Aljeesh, Y. 2018. Burden of chronic diseases in the Palestinian health-care sector using disability-adjusted life-years. The Lancet, 391: S21.

Figure 6. Estimated per capita intake of sugar-sweetened beverages, red meat, processed meat and sodium (grams per day)



Source: Mosleh, M., Dalal, K. & Aljeesh, Y. 2018. Burden of chronic diseases in the Palestinian health-care sector using disability-adjusted life-years. The Lancet, 391: S21.



## Characterization of the dominant actors in the food systems of the Occupied Palestinian Territory

This section draws on the Agriculture Census 2021 (PCBS, 2022a; 2022b); the Agriculture Census 2010 (PCBS, 2011); a study on small-scale agriculture in the Occupied Palestinian Territory (Marzin, Uwaidat and Sourisseau, 2019); and the National Agriculture Sector Strategy 2017–2022 (Occupied Palestinian Territory, Ministry of Agriculture, 2016), among other reports and research papers, as cited.

- The agrifood sector remains crucial for employment opportunities, particularly in rural areas. The number of workers in the sector, however, has declined significantly as a result of restrictions on development and low productivity. Agriculture accounted for 16.7 percent of the total labour force in 2006 (12.6 percent for men, 35 percent for women), which declined to 10.4 percent in 2014 and 8.7 percent in 2015 (Occupied Palestinian Territory, Ministry of Agriculture, 2016) and 6.7 percent in 2017. That said, a large proportion of the work is partial or seasonal. PCBS data from 2016 put the number of people working in the informal sector at approximately 33 percent of the labour force (Araji and Pesce, 2019).
- Agricultural holdings total 140 568, 82.4 percent are in the West Bank and 17.6 percent are in the Gaza Strip.<sup>14</sup> Of these, 73.4 percent are crop holdings, 14.2 percent animal holdings, and 12.4 percent mixed agricultural holdings.
- Land concentration is very high: 8.3 percent of the holdings (larger than 2 ha) manage 50.4 percent of the agricultural area while the smallest category of holdings (less than 0.3 ha), representing 50.5 percent of the total holdings manage only 7.2 percent of the agricultural area.
- Because of the inheritance system and land confiscation by Israel, landholdings are becoming smaller and significantly more fragmented. Approximately 50.5 percent of landholdings in 2021 were less than 3 dunums, 31.6 percent were between 3 and 10 dunums; 14.4 percent between 10 and 40 dunums and only 3.5 percent were larger than 40 dunums (4 hectares). The average size of an agricultural holding in 2021 was 8.6 dunums (9.6 dunums in the West Bank and 3.8 dunums in the Gaza Strip), representing a decline of 39 percent since 2010.<sup>15</sup>
- Some landholdings owned by a single person may be scattered across several village locations. These arrangements have a negative impact on the attractiveness of the agricultural sector to capital investment and further discourages the use of expensive agricultural technology. Fragmentation also discourages young entrepreneurs to venture into agricultural projects.



<sup>14</sup> In terms of area, 90 percent of all agricultural lands are in the West Bank and 10 percent in the Gaza Strip, according to the National Agriculture Sector Strategy 2017–2022 (Occupied Palestinian Territory, Ministry of Agriculture, 2016).

<sup>15</sup> The average landholding in 2010 was 12 dunums (13 dunums in the West Bank and 6 dunums in the Gaza Strip).



- Small-scale family farming is the prevailing type of agriculture in Occupied Palestinian Territory: 57.5 percent of the farms are geared towards subsistence and own consumption, while 27.3 percent produce mainly or solely for sale. Larger holdings tend to be more market-oriented, but 44 percent of them (80 dunums or more) produce solely or mainly for their own consumption. Palestinian farms depend mainly on family labour; only one-third of them hire workers. This figure is higher in the Gaza Strip, where 44 percent of holdings hire labour, either on a part-time or full-time basis. Only 6.1 percent of the holdings in the Occupied Palestinian Territory employ permanent workers.
- The recent agricultural census (PCBS, 2022a) showed substantial ageing among agricultural holders, with those under 30 years of age representing only 4 percent of the total in 2020. Agriculture holders over 60 years accounted for 29 percent and those in the 50–59 age group made up 28 percent. Most farmworkers are not full-time farmers and engage in other non-agricultural activities.
- The gender distribution of landholding has not changed over the past decade. The land is overwhelmingly held by males – some 92 percent of agricultural holdings. Although this represents an improvement relative to 2004/2005, when only 4.5 percent of landholdings was owned by females, women in agriculture are quite disadvantaged, as reflected in their limited economic opportunities, restricted mobility and limited technical skills and training. That said, however, the percentages of men and women employed in agriculture were estimated at 7.8 and 13.1 percent, respectively, in 2015, which indicates the relative importance of the agricultural sector to women.
- The food and agroprocessing industry is a substantial contributor to the economy of the Occupied Palestinian Territory; it also offers job opportunities in the local market. In 2017, the agroprocessing subsector accounted for approximately 24 000 employees (Marzin, Uwaidat and Sourisseau, 2019), working in 4 500 agrifood companies. This indicates that most of them were small businesses, with an average of approximately 5.3 employees per company.
- According to the Palestinian Food Industries Union (cited in ARIJ, 2015), a total of 18 factories specialized in the production of canned vegetables and fruits, and employed 545 workers; 13 factories specialized in the production of oils and vegetable fats and employed more than 295 workers; nine factories worked with wheat flour and grains and employed more than 236 workers; and five factories produced pasta and employed approximately 90 workers.
- There are 13 ruminant slaughterhouses (eight in the West Bank and five in the Gaza Strip), nine poultry plants in the West Bank and one in the Gaza Strip and 19 poultry hatcheries in the West Bank and four in the Gaza Strip. Production is difficult, given that feed supply is unable to cover existing needs, in terms of quality and quantity, and steadily rising feed prices have been increasing production costs. As a result, many farmers have resorted to selling their livestock or using low-quality feedstuffs. Heavy reliance on imported inputs has, therefore, resulted in reduced livestock productivity and deteriorating quality.
- The agricultural sector suffers from weak marketing capacity characterized by poor organization and coordination among its stakeholders, along with inefficient services. The territory's 12 central wholesale markets play a pivotal role in the marketing of agricultural produce. They are managed by local governorate units, either directly or through third parties. Local authorities receive a percentage of the wholesalers' revenue and rental fees from retailers who run stalls at the central markets, which offer a variety of fresh produce for local consumers, including vegetables, fruits and field crops.



- Vegetables sold at these markets are mostly produced locally (82 percent); the rest are imported from Israel. For fruits and field crops, local production accounts for 29 percent and 49 percent, respectively, while the rest is imported from Israel.
- Palestinian traders are integral in the channels moving agrifood commodities from farmers to end-consumers, as well as in supplying inputs and working capital to farmers. According to the Palestinian Central Bureau of Statistics (cited in ARIJ, 2015), an estimated 1 565 agricultural wholesalers and retailers were registered in the West Bank in 2010, but no estimates were made on the number of informal traders.
- Traders are categorized in three groups: (a) wholesalers, who purchase agroproducts either directly from the farmers, the local market or other wholesalers, and then sell the products to other intermediaries. They provide some marketing services, such as sorting, grading, storage and transferring products from one market to another; (b) retailers, who purchase agroproducts from wholesalers and sell them directly to end-consumers; and (c) agents/intermediaries, who work on behalf of their farmer clients, while the farmers retain ownership of their products. These agents receive a commission in exchange for their marketing services. Many wholesalers rely on farmers to deliver their own produce to the wholesale markets. Retailers purchase produce from the wholesalers in these markets, and then either transport the purchases to their stores themselves, or hire transporters who may also act as an intermediary between the retailer and the wholesaler.
- The majority of Palestinian farmers (60 percent) offer their products through central wholesale markets or use other sales points to reach consumers, passing through wholesalers, distributors and retailers. Some farmers (38 percent), prefer to bypass the wholesalers and sell their produce directly to local traders or processors. This can substantially affect trade on the wholesale markets. In the West Bank. For example, the Tulkarem central market receives only 20 percent of local production. Local produce accounts for approximately 8 percent to trade in the Hebron wholesale market. Only 2 percent of farmers export their products. The channels most often used for getting processed foods to market are agents and distributors (33 percent) or wholesalers and other intermediaries (33 percent).
- In general, 30–35 percent of the selling price goes to the farmer, after deducting input costs. The average mark-up for wholesalers typically ranges between 10 and 15 percent of the consumer price. For retailers this comprises approximately 40 percent of the sale prices.
- Agricultural cooperatives are underdeveloped and many lack expert knowledge or the skills to help farmers maximize their market returns. Marketing infrastructure is lacking, including packaging and canning of agricultural products, refrigerated storage and transport to deliver perishable goods to markets. Consequently, farmers still suffer relatively high losses of agroproducts, including spoilage. Prospects for exports are limited as they are hampered by a lack of financial capacity and physical resources.
- Many ministries and public institutions play key roles in the development, organization and the provision of services to the agricultural sector. A total of 35 non-governmental and civil society organizations work with the Ministry of Agriculture in implementing development projects, including land reclamation, agricultural roads and water-harvesting. The private sector and farmers' organizations play a key role in the agricultural production value chain, investing in the agricultural sector and providing services farmers need in their production and post-harvest processes. The private sector is the only player involved in processing.



## Key challenges to the achievement of core sustainable food systems goals

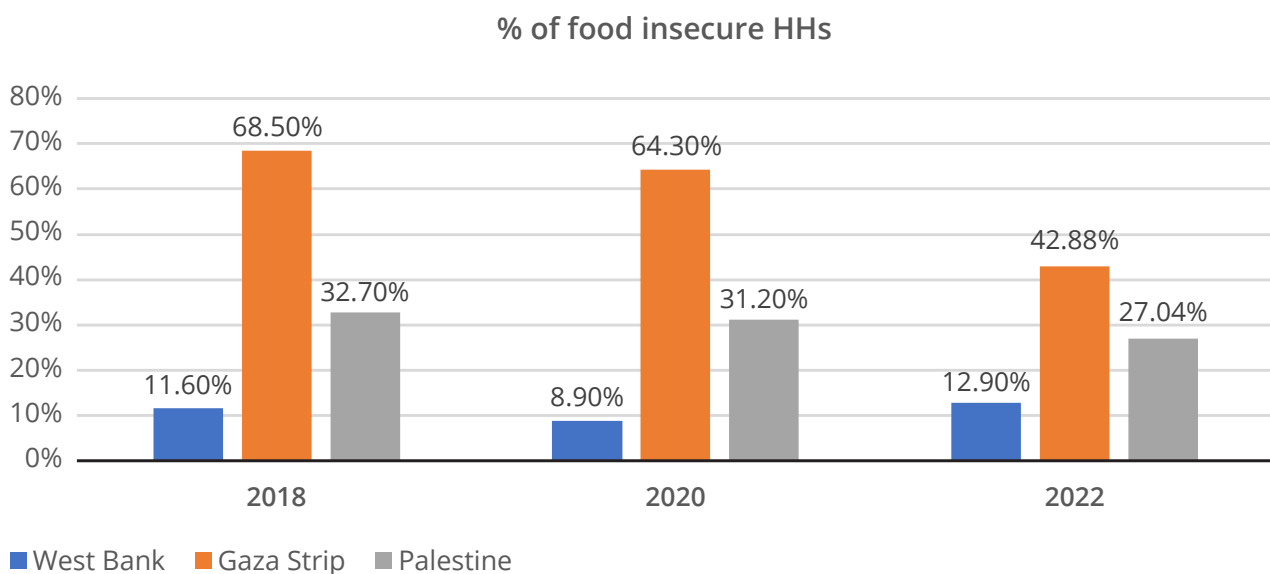
### Key Sustainability Question 1: What are the reasons behind the rise in food insecurity and malnutrition, and the widening gap between the West Bank and the Gaza Strip?

Various studies, including the Socio-Economic & Food Security Survey 2020 – SEFSec 2020 – (MAS, 2021), the Humanitarian Needs Overview 2020 (OCHA, 2019), and the latest Food Insecurity Experience Scale data indicated that food security has been swinging through Covid 19, but partially improving between 2018 and 2022, with still at alarming rates in the Occupied Palestinian Territory. In fact, almost one-third of the people were deemed food insecure (Figure 7). The situation further deteriorated because of the COVID-19 pandemic. Food insecurity was more substantial in the Gaza Strip, in urban areas and in the refugee camps, where almost two out of three people were moderately or severely food insecure. Some groups tended to be more vulnerable than

others. For instance, food insecurity was found to be higher among women (WFP, 2021) and the Bedouin communities of Area C in the West Bank, 60 percent of whom were found to be food insecure (OCHA, 2019).

High food insecurity has also contributed to rising levels of malnutrition. According to the Multiple Indicator Cluster Survey (MICS) 2019–2020, 8.7 percent of children under the age of 5 years suffer from moderate or severe stunting; 1.3 percent suffer from wasting; 2.1 percent are underweight; and 8.6 percent are overweight (PCBS, 2021e). That said, the prevalence of undernutrition (stunting and wasting) in the Occupied Palestinian Territory is actually low in regional and global terms. However, micronutrient deficiencies,

Figure 7. Food security in the Occupied Palestinian Territory



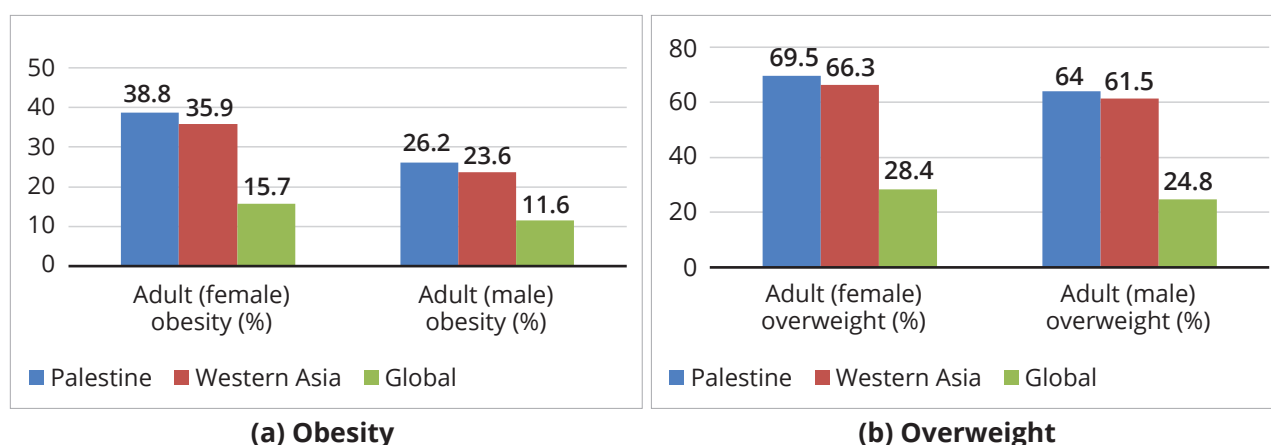
Source: PCBS. Mental Health Survey, 2022 (publication forthcoming). Food Insecurity Experience Scale - FIES 12 months recall.



overweight and obesity are alarmingly high (Development Initiatives, 2018). The prevalence of overweight and obesity, for instance, are significantly higher than global prevalence rates (Figure 8) and, according to an assessment conducted in 2019 (NCD-RisC, 2020), they were projected to further increase to 34.8 percent for men and 45.7 percent for women by 2025. Micronutrient deficiencies were quite common

in the Palestinian Micronutrient Survey of 2013 (Elmadfa, Abu Rub and Ben-Abdullah, 2014). This situation is of high concern for pregnant and lactating women, and very young children, as shown in Table 4. As with food insecurity, there are striking differences between the West Bank and the Gaza Strip with regard to malnutrition; the prevalence rates are much higher in the Gaza Strip.

**Figure 8. Prevalence of (a) obesity and (b) overweight, by gender (a comparison between the Occupied Palestinian Territory, West Asia and global averages – 2015)**



**Source:** Development Initiatives. 2018. *2018 Global Nutrition Report: Shining a light to spur action on nutrition*. Bristol, UK: Development Initiatives.

**Table 4. Micronutrient deficiencies in Occupied Palestinian Territory**

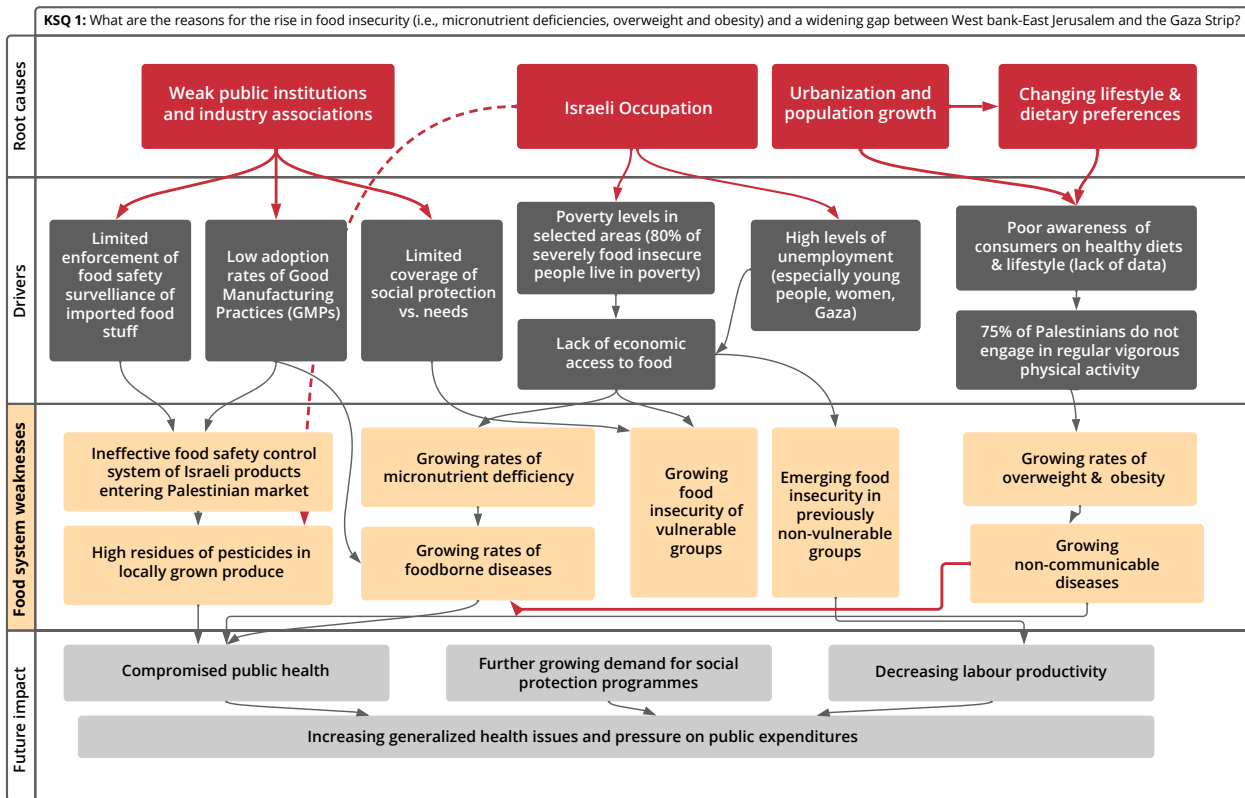
| Micronutrient deficiencies | Pregnant women (18–43 years) | Lactating women (18–48 years) | Under-five children (6–59 months) |
|----------------------------|------------------------------|-------------------------------|-----------------------------------|
| Vitamin A                  | 54.8%                        | 28.7%                         | 72.9%                             |
| Vitamin B12                | 62.80%                       | 20.60%                        | 10.90%                            |
| Vitamin D                  | 99.3%                        | 98.7%                         | 60.1%                             |
| Vitamin E                  | 21.6%                        | 44.1%                         | 64.3%                             |
| Zinc                       | 71.1%                        | 90.7%                         | 55.6%                             |
| Iron-deficiency anaemia    | 30.9%                        | 29.0%                         | 26.5%                             |

**Sources:** Elmadfa, I., Abu Rub, A. and Ben-Abdullah, K., 2014. Palestinian Micronutrient Survey (PMS) 2013. Final report. Occupied Palestine Territory, Ministry of Health and United Nations Children’s Fund (UNICEF) office in the State of Palestine; MAS, 2017. Strategic Review of Food and Nutrition Security in Palestine, 2017. [www.un.org/unispal/wp-content/uploads/2018/02/WFPREV\\_140218.pdf](http://www.un.org/unispal/wp-content/uploads/2018/02/WFPREV_140218.pdf)





Figure 9. Reasons for the rise in food insecurity and malnutrition in the Occupied Palestinian Territory



Source: Authors, 2022.

Several driving factors contribute to the challenge of chronic food insecurity and malnutrition in the Occupied Palestinian Territory (Figure 9), including, among them, the Israeli occupation and the blockade of the Gaza Strip, the weakness of public institutions and governance, demographic and sociocultural factors, such as urbanization and population growth, poverty and unemployment, lack of basic social services and infrastructure, inadequate support programmes for vulnerable groups, ineffective nutrition awareness programmes, weak regulatory and monitoring mechanisms, environmental degradation and climate shocks. These are discussed below.

The **continuous political conflict** has negatively affected food systems in the Occupied Palestinian Territory, resulting in distortions in the availability, accessibility and affordability of foodstuffs,

particularly in the Gaza Strip. Due to the **Israeli occupation**, there are many restrictions on transport and movement of goods. Access to critical inputs, such as water, is not under the control of the Palestinian authorities. Export and import regulations are, to a large extent, controlled by Israel and access to foreign markets is limited. Consequently, the agriculture sector operates under severe constraints and is characterized by low food production and underperforming value chains (see KSQ 3). **Rapid urbanization**, through continuous decreases in the areas devoted to agriculture use, natural resource degradation and climate change (discussed later in KSQ 2), have further affected domestic food production, leading to increased dependence on imported foods.

The **restrictions on movements of people and goods** between the West Bank and the Gaza



Strip, and the partition of the West Bank into Areas A, B and C, under increasing levels of Israeli administrative and military authority, has disrupted proper functioning of markets, affecting the availability and physical access of food. Furthermore, the logistics and food distribution affected by checkpoints in the West Bank has resulted in unreliable supply on shelves and excessive and fluctuating losses in some perishable products (e.g. strawberries and guavas). Despite this, foodstuffs are generally available in the West Bank – mainly on account of imports – while the Gaza Strip faces severe or critical shortages of some food commodities from time to time. An additional factor is that the people of the Gaza Strip are mostly refugees, who have **no home gardens**, in contrast to inhabitants of the West Bank. That means that people of the Gaza Strip are unable to cultivate any plants at home, whereas one-quarter of West Bank households depend, in part, on their gardens for some food.

Even more important than the availability and physical accessibility of food, however, is affordability or economic access. According to the latest available data, approximately 29 percent of the population was living below the **poverty** line in 2017, with substantial gaps between the West Bank (14 percent) and the Gaza Strip (53 percent) (PCBS, 2018c). Another major factor in the Gaza Strip is **high unemployment**, which was at 46.6 percent in 2020 (PCBS, 2021a). Furthermore, wages in the Gaza strip are much lower than those in the West Bank (MAS *et al.*, 2022). As a result, a large proportion of the population cannot afford healthy and nutritious foods, which tend to be more costly. The situation is much worse in the Gaza Strip, where almost 1 million Palestinian refugees depend on United Nations Relief and Works Agency (UNRWA) emergency food assistance to meet their basic food needs. Women, children and young people

are particularly badly affected. High levels of poverty, unemployment and an overstretched government safety net have been identified as the key drivers of food insecurity and malnutrition in the Occupied Palestinian Territory (MAS, 2017; WFP, 2021).

Food prices increased drastically between 1996 and 2020, as indicated in the consumer price index for food.<sup>16</sup> The reasons behind increasing prices are numerous but they are usually attributed to steady **increases in input** prices. This is mainly because access to agrochemicals (pesticides and fertilizers) has been typically limited by an oligopoly of few trade agencies, which determine prices without any effective control over them (ARIJ, 2015).<sup>17</sup> The vulnerability of the Occupied Palestinian Territory to international market shocks is significant due to the high dependency on imports (for consumption and as inputs for the agricultural sector, such as fertilizers and fodder). Economic access to food is also affected by price



<sup>16</sup> Prices have continued to increase due to the COVID-19 pandemic and the conflict in Ukraine, which has disrupted international trade in grains and fertilizer on which the Occupied Palestinian Territory is highly dependent.

<sup>17</sup> The war in Ukraine has further disrupted access, given the high dependency on exports from the Russian Federation and Ukraine. The price spikes for fertilizers and the energy crisis has greatly affected the agrifood sector in the Occupied Palestinian Territory.



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fluctuations on a daily basis, resulting from a lack of information-sharing about supply and demand of many products due to the absence of a **management system** that coordinates activities (ARIJ, 2015).

**An effective safety net based on clear-cut policies does not exist** in the Occupied Palestinian Territory (MAS, 2017). While assistance programmes (e.g. cash or in-kind) implemented by local and international actors have helped to reduce food insecurity for beneficiary households, long-term interventions are still required to overcome the root causes. Moreover, existing support programmes for vulnerable groups are inadequate and dependent on the availability of funding, which is largely external. Designing well-tailored policies could strengthen the livelihood component, especially in the context of structural vulnerabilities with respect to Israel and international price fluctuations.

**Changing dietary habits and lifestyles** are also factors affecting the territory's food security. Data on consumption data suggest that the population tends to have a poor diet quality. This is characterized by high intake of unhealthy

foodstuffs high in fats, refined carbohydrates and sugars, but low in fibre. Data are not often gathered in this domain, but relatively recent surveys, including SEFSec 2014 (FSS, 2016), show that Palestinian households consume energy-intensive diets, with food energy mainly coming from carbohydrates, such as cereals and sugar, and from fats. An estimated 85.9 percent of the study population consumed less than five servings of fruits and vegetables per day.<sup>18</sup> Consumption of pulses was also found to be low (less than two times per week) despite being a cheap and nutritious. A recent study on schoolchildren showed that overweight and obesity numbers were associated with time spent watching television and inversely associated with the number of days spent playing sports (Massad *et al.*, 2016). This was in line with the SEFSec 2014 findings that three-quarters of the population does not engage in regular physical activity. Poor maternal nutrition and suboptimal infant and child-feeding practices have also contributed to increased child morbidity and have long-term implications for cognitive development and labour market outcomes (FSS, 2016). These behaviours can be attributed to a **lack of nutrition-sensitive awareness programmes**

<sup>18</sup> FAO and WHO recommend 400 g edible fruit and vegetables per day as a population-wide intake goal for the prevention of non communicable diseases, as well as for the prevention and alleviation of several micronutrient deficiencies. This translates to roughly five portions per day (WHO and FAO, 2003).



to promote the consumption of fruits and vegetables, and encourage healthy lifestyles.

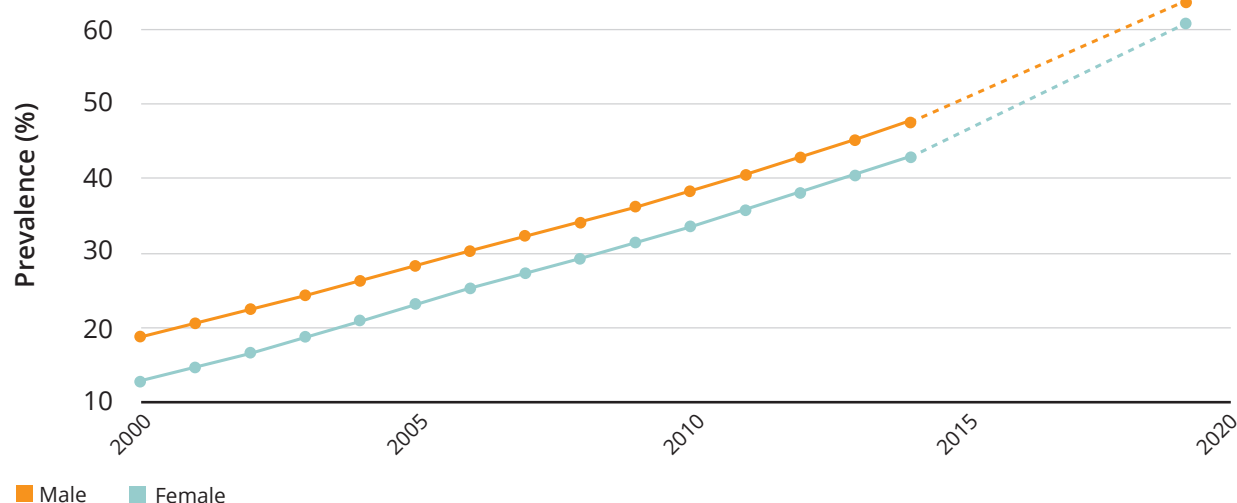
The **weakness of institutional mechanisms for consumer protection and food safety** is also an important element. In a context of poor public revenue and a relatively recent institutional setting, public institutions have limited ability to enforce market transparency and ensure functioning food-safety surveillance, and there is little incentive to adopt good agriculture and production practices. While food safety laws and regulations exist (e.g. Consumer Protection Law Number 21, 2005), and despite efforts to carry out inspections by relevant institutions, in practice, there is no enforcement. Consequently, there is ineffective safety control of Israeli food products entering the Palestinian market and high pesticide residues in locally grown foods.

The food security and nutrition situation in the Occupied Palestinian Territory poses significant and multifaceted challenges to the sustainability of food systems. Most important are the increases in communicable and non-communicable diseases that have increased the



need for higher expenditure on health services. Diabetes, for instance, has trended higher in the past two decades, and is estimated to affect 21 percent of adult women and 20 percent of adult men in the territory (Figure 10). According to the Palestine Health Profile 2015, the burden of non-communicable diseases causes 75 percent of all deaths in the West Bank (WHO, 2015).<sup>19</sup> In the Gaza Strip, non-communicable diseases accounted for more than 50 percent of mortalities in 2013 (Mosleh *et al.*, 2020). A large proportion of mortalities can be attributed to dietary composition (Figure 11).

**Figure 10. Diabetes prevalence in the Occupied Palestinian Territory**

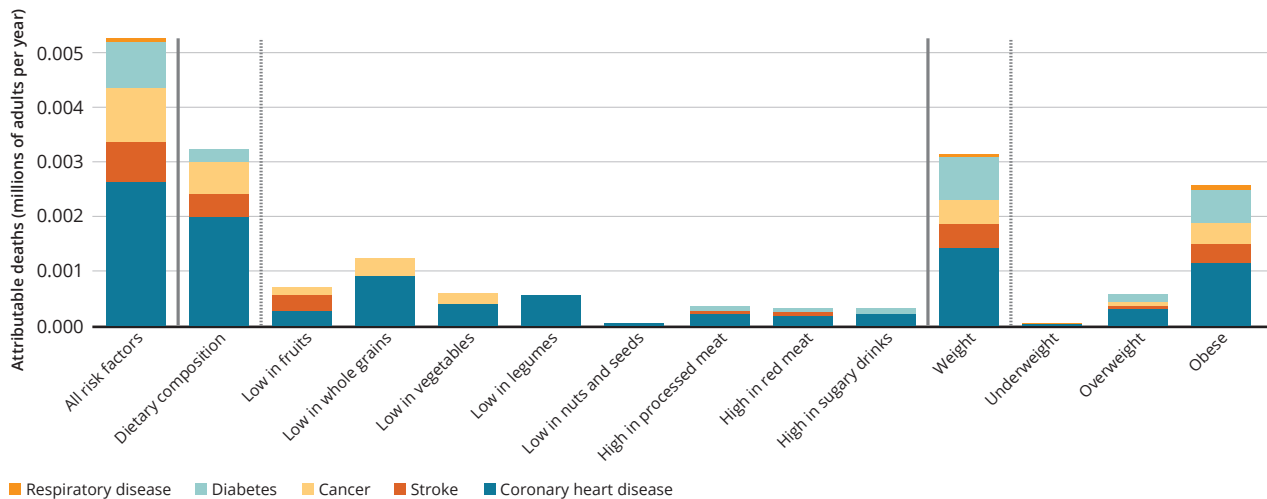


**Source:** Development Initiatives. 2022. *Global Nutrition Report 2022. State of Palestine: The burden of malnutrition at a glance. Global Nutrition Report: Stronger commitments for greater action.* Bristol, UK. Development Initiatives.

<sup>19</sup> Raised blood pressure, in adults more than 18 years of age, affects 36 percent of the population.



**Figure 11. Mortality attributable to dietary composition in the Occupied Palestinian Territory**



**Source:** Development Initiatives. 2022. *Global Nutrition Report 2022. State of Palestine: The burden of malnutrition at a glance. Global Nutrition Report: Stronger commitments for greater action.* Bristol, UK. Development Initiatives.

## Proposed systemic levers

Given the situation, two major levers have been identified to address issues in the Palestinian food systems: nutrition-specific investments; and diversification and increased production of nutrient-rich crops. These are in line with the overarching guidance provided by the investment plans, the National Investment Plan for Food and NIP, which are intended to reverse the trends of food insecurity and malnutrition (Occupied Palestinian Territory, Ministry of Agriculture, 2019).

### **Lever 1: Nutrition-specific investments**

**Nutrition-specific interventions** comprise investments that help address the immediate causes of malnutrition (Raza, 2019; Occupied Palestinian Territory, Ministry of Agriculture, 2019).<sup>20</sup> First, **data generation and use**, through research and improved monitoring of nutritional levels, to identify nutritional trends (nutrition surveillance system) and fine-tune analysis of

the underlying causes. This would also include dissemination of the results among health, food and nutrition stakeholders. Second, investment dedicated to **social behaviour change**, including communication campaigns to **raise awareness** of healthy diets and nutrition, through social media, particularly involving young people, and pregnant or lactating women. Specifically, this would include efforts to reduce the intake of salt, saturated fats, trans fat and sugar; promote dietary diversification; and enhance dietary and physical activity programmes. These interventions would also comprise **prevention and treatment of micronutrient deficiencies** through micronutrient supplementation; food fortification, protection, promotion and support for exclusive breastfeeding up to 6 months; promotion of appropriate, safely and timely complementary feeding of infants and dietary diversity for children; promotion of appropriate nutrition among schoolchildren; prevention and treatment of obesity; management of severe and moderate malnutrition; and improvement and expansion of the existing special food registration system.

<sup>20</sup> Details on these interventions can be found on NIP Component 1 – Nutrition-specific investments (Ministry of Agriculture, 2019).



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### ***Lever 2: Facilitate diversification and increase production of nutrient-rich crops***

An immediate lever to improve food and nutrition security would include mobilization of investment and expertise to enhance the production and marketing of highly nutritional and high-value horticulture, livestock and aquaculture products.<sup>21</sup> Such outcomes would require fostering public and private partnerships and interinstitutional collaborations (including the Palestine Trade Center (PalTrade) and the Palestinian Investment Promotion Agency) jointly with private sector actors. Aiming to expand business volumes (addressing employment and self-employment opportunities), the outcome of such interventions could include the expansion of export market volumes, and substitution of imports (including from Israel), with domestic horticultural products. In

addition, the development of mobile markets, especially during periods of high food prices, would improve the availability and accessibility of fruits and vegetables in areas with high prevalence of food insecurity and malnutrition. Finally, encouraging approaches that foster community linkages and territorial approaches and promoting partnerships between producers and consumers would also be a way to shorten the value chains and offer multiple benefits.<sup>22</sup> Specifically, producer and consumer partnership models would help to match supply to demand through planning and planting according to the needs of the families who engage with them, and the sharing of the harvests, by the consumers themselves, in the form of weekly baskets.<sup>23</sup> This may include developing mobile markets to improve availability and access to fruits and vegetables in areas with high prevalence of food insecurity and malnutrition.

<sup>21</sup> A detailed investment strategy is presented in NIP Component 3 – Sustainable and Inclusive Agri-food Value Chains Development (Ministry of Agriculture, 2019).

<sup>22</sup> The specific strategy of investment is described in NIP Component 6 – Territorial and co-responsibility approaches promotion (Ministry of Agriculture, 2019).

<sup>23</sup> A scheme based on successful models of consumer–producer partnerships, such as those organized since 2003 in the international URGENCI network (<http://urgenci.net/>), and recently set up a Mediterranean network of local and solidarity-based partnerships for agroecology. These agreements require the acceptance of models of co-responsibility and solidarity, mainly concerning the sharing of the risks and benefits of agricultural production.



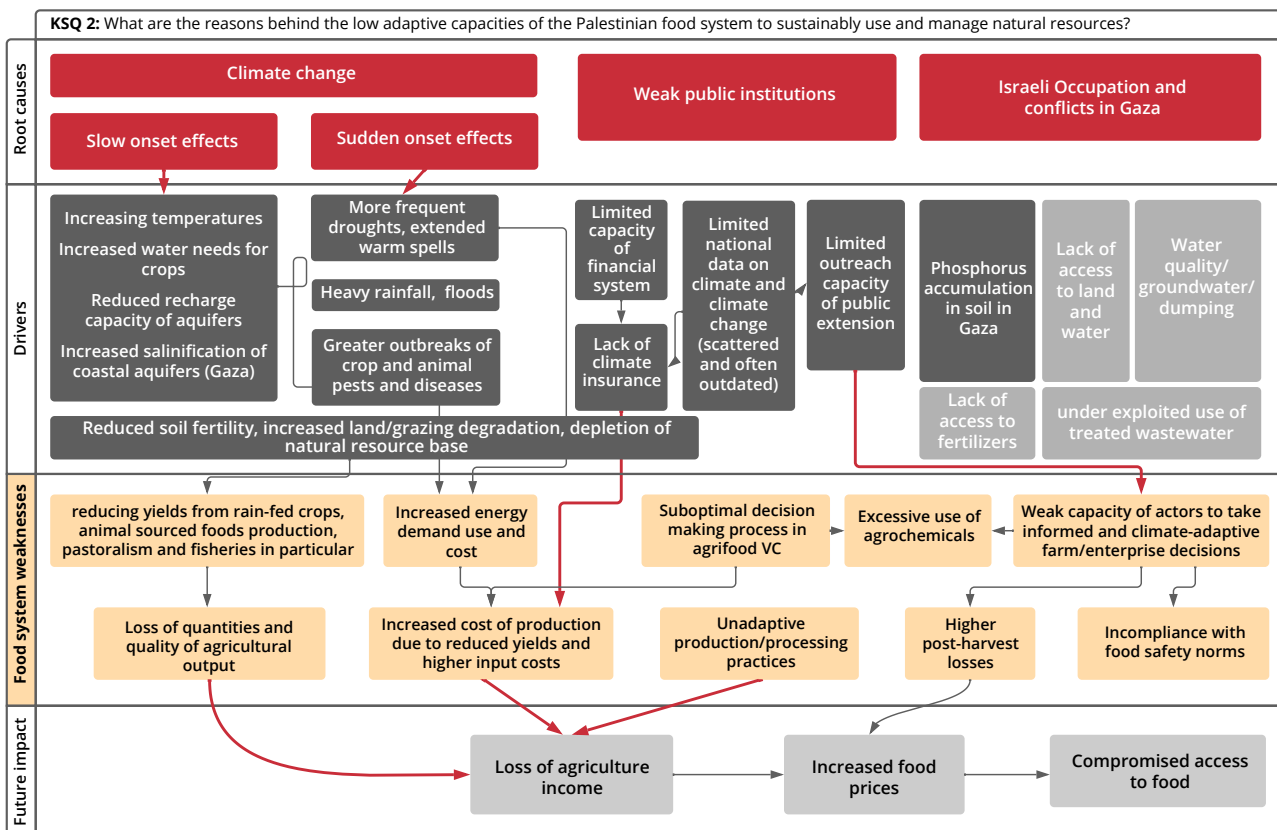
## Key Sustainability Question 2: What are the reasons behind the low adaptive capacities of the Palestinian food system to sustainably use and manage natural resources?

Food systems in the Occupied Palestinian Territory have not been able to use and manage natural resources sustainably. Some of the challenges in this regard are depletion of scarce water resources; excessive and uncontrolled use of pesticides, chemical fertilizers, hormones and antibiotics, which contribute to the high levels of water pollution; soil degradation and pollution; and loss of biodiversity. The low adaptive capacity of the food systems to sustainably use and manage natural resources has increased vulnerability to climate change and other shocks. A proper natural resources management sector in the context of climate change would

not only ensure food and nutrition security, but it would also be critical to ensure economic and social sustainability.

Drivers of these challenges are climate change, the Israeli occupation, and weak public institutions and policy frameworks, as shown in Figure 12. Combined with rapid urbanization and population growth, they have increased pressure on the scarce natural resources and led to unsustainable agricultural practices, which threaten the long-term sustainability of food systems in the Occupied Palestinian Territory.

**Figure 12. Reasons for low adaptive capacity and unsustainable natural resource management in the Occupied Palestinian Territory**



Source: Authors, 2022.



Water is widely recognized as one of the most critical inputs for Palestinian agriculture and food systems. However, control held by Israel over water resources, combined with inefficient water use and pollution of the limited available resources, present a significant challenge to the food systems.

More than **85 percent of Palestinian water sources are under the control of Israeli forces** in the West Bank.<sup>24</sup> Due to the Israeli West Bank Barrier, 95 percent of Palestinians are isolated from the water sources they historically used, forcing them to rely on privatized Israeli water, which is often unaffordable. The most recent estimates show that Palestinians extract only approximately 14 percent of the groundwater quantities in the West Bank, while Israel extracts more than six times as much, largely exceeding the allocation between the two parties according to the Oslo Agreement (FAO, 2019a; Occupied Palestinian Territory, Ministry of Agriculture, 2019). Further obstacles are the destruction of water connections and wells across the West Bank, the absence of water networks, difficulty in obtaining permits to construct water systems, and **restrictions on repairing and digging/drilling new wells and building water reservoirs.**

Lack of sufficient surface water sources and the restrictions on Palestinian investment in infrastructure for water resource development in Area C of the West Bank generate intense pressure on groundwater. Data from 2019 show that the exploitation of surface and groundwater from available water was high, averaging 79 percent. The **overexploitation of accessible water depletes the aquifers and contributes to the deterioration of their quality** (FAO, 2017). In the Gaza Strip, the amount of water extracted from the coastal aquifer for domestic use was 188 million m<sup>3</sup> (MCM) in 2019. This quantity was obtained through unsafe pumping, which has jeopardized the sustainability of the source given

that the basin's sustainable yield should not exceed 50–60 million m<sup>3</sup> per year – leading to the depletion of groundwater reserves.

The overpumping of groundwater also has led to **severe pollution and salinization**, especially in the Gaza Strip.<sup>25</sup> Nitrate levels exceed 150 mg/litre in most areas of the Gaza Strip, which makes the water undrinkable, given the World Health Organization (WHO) acceptable limit in drinking water is 50 mg/litre (Fanack Water, 2021). More than 97 percent of the water pumped from the coastal aquifer in the Gaza Strip does not meet the water quality standards set by WHO (PCBS and PWA, 2021). In the West Bank, as well, access to water and adequate sanitation continues to be a significant challenge. In Area C in particular, approximately 300 000 Palestinians – including 16 000 Bedouins – are directly affected by Israeli restrictions and control of water and sanitation infrastructure. In Area C, approximately 95 000 people each receive less than 50 litres of water per day, while more than 83 000 people consume bad-quality drinking water, being mainly



<sup>24</sup> Palestinians have been denied, by the Israeli occupation, rights to access and extract water from the Jordan River since 1967.

<sup>25</sup> The groundwater levels in the coastal aquifer reached 19 metres below sea level.





dependent on tankered water from unsecured sources, rainwater harvesting and good quality water stored in contaminated storage, or due to unsafe hygiene practices at the household level (OCHA, 2019).

The **contamination of groundwater by untreated wastewater** and the damaged water infrastructure have made groundwater increasingly unsuitable for agricultural use. Less than 20 percent of wastewater is fully treated (Ives *et al.*, 2018), which has led to food safety issues and associated health risks. Furthermore, salinization of water will ultimately lead to desertification of agricultural lands, which is evident in certain locations, including in the Jordan Valley. The consequences are the loss of valuable lands, higher prices for locally produced foods and increased reliance on imported foods.

In addition to the scarcity of water, overall **irrigation efficiency is only in the range of 60–75 percent** – mainly attributed to poor irrigation management. Irrigation quantities are based on a “time share or quota” rather than on actual crop water requirements, which is not incentivizing the maximization of value per drop of water.

In such a context, treated wastewater has emerged as a priority area for investment for

agriculture and food systems. Nevertheless, **lack of efficient irrigation schemes, limited capacity of enabling institutions for monitoring and investment, and a generalized limited understanding of the potential and the food safety** aspects of its use in agriculture limit expansion. Moreover, establishing wastewater treatment plants and other sanitation and water reuse infrastructure faces the same restrictions imposed by the Israeli authorities on other infrastructure. Currently, the quantity of treated wastewater in the West Bank is approximately 9 million m<sup>3</sup> from 11 plants annually, while the utilized quantity is only approximately 1.6 million m<sup>3</sup>. Similarly, in the Gaza Strip, the annual quantity of treated wastewater is 6 million m<sup>3</sup>, while the utilized quantity is approximately 4 million m<sup>3</sup> (Occupied Palestinian Territory, Ministry of Agriculture, 2018).

Increasing **urbanization and population growth** present a further burden on the few accessible resources. In 2019, the daily allocation of water per capita for domestic purposes among Palestinians was 82 litres/capita (approximately 86 litres/capita in the West Bank, versus 77 litres/capita in the Gaza Strip), representing a decline of about 6 litres/capita from the previous year (PCBS, PWA and PMD, 2020). In fact, the average Palestinian water consumption per capita is less



than WHO minimum recommended level of 100 litres per day, and is decreasing further as a result of population growth. Taking the high percentage of water pollution in the Gaza Strip, and calculating the quantity of water suitable for human use, the per capita share of fresh water is only 22.4 litres per day. Additionally, survey data indicate that only 40 percent of households in the Occupied Palestinian Territory has access to safely managed water that is free of pollution, 66 percent of households in West Bank to a mere 4 percent in the Gaza Strip (PCBS and PWA, 2021).

The water situation is further **exacerbated by climate change**, which is expected to increase the severity of water scarcity and droughts. In general, it is perceived that from 1989 to 2016, minimum and maximum temperatures (throughout the year) rose in the the West Bank and the Gaza Strip (European Centre for Medium-Range Weather Forecasts (ECMWF) 1989–2016, cited in FAO, 2019a). Despite a generalized perception among Palestinian farmers of precipitation changes, there is no consensus in the relevant literature regarding declines in seasonal or annual rainfall (FAO, 2019a). Nevertheless, ECMWF data gathered for nearly 40 years indicate possible negative trends in rainfall, with concentrations in autumn and winter, an apparent reduction in spring and being almost absent in summer (CHIRPS 1981–2019, cited in FAO, 2019a). The most recent Palestinian policy and strategic documentation, including the Initial National Communication Report (INCR, 2016) and the nationally determined contributions (NDCs) report (NDC, 2017), agree that with the **changes in temperature and possible changes in precipitation**, climate can no longer be considered stable and predictable, and is subject to increasing variability. Based on the literature and available data, the 2016 National Adaptation Plan (NAP) noted that 12 sectors of the economy are **particularly vulnerable to climate change** for which immediate action is

required to ensure adaptation (EQA, 2016b; FAO, 2019a).<sup>26</sup> These sectors are agriculture, coast and marine, energy, food, gender, industry, terrestrial ecosystems, tourism, infrastructure, waste management and water. Also noted in NAP are that the vulnerabilities result from the root causes of general insecurity and vulnerability of the Occupied Palestinian Territory, such as the conflict and occupation, which limits the capacity to manage natural resources and demographics, and increases pressure on resources, and the limited knowledge and capacity to respond to climate change (EQA, 2016b).

The **occupation has also restricted access to land resources**, especially in Area C of the West Bank and in the Gaza Strip. Israel has declared 40 percent of Area C as State land, banning all kinds of construction or economic activities. In the same fashion, 30 percent of Area C, which is mainly in the Jordan Valley, has been designated as military zones and natural reserves. Access to the remaining 30 percent of Area C is highly restricted. Effectively, less than 1 percent of Area C is available to Palestinians (Niksic, Nasser Eddin and Cali, 2014). In the Gaza Strip, up to 35 percent of agricultural areas were classified as access-restricted areas. The situation deteriorated after a flare-up in conflict in 2014, when almost one-third of the agricultural land was damaged and most of the fertile land was contaminated by explosive remnants (WFP, 2021).

Moreover, **unsustainable agricultural practices** have contributed to land degradation and pollution. Unlike traditional agriculture production systems that better preserve soils, modern food production systems in the Occupied Palestinian Territory are characterized by excessive use of fertilizers and low-quality water, particularly in the Gaza Strip and parts of the Jordan Valley. In the Gaza Strip, for instance, the poor quality of water and the contamination of groundwater with seawater have led to the drastic deterioration

<sup>26</sup> The NAP projections are the result of a literature review and incorporate analysis of projections for the region based on official communication to the United Nations Framework Convention on Climate Change (UNFCCC) from Israel, Jordan, Egypt and Lebanon (EQA, 2016b).



of soil over large areas, limiting the selection of cultivated plants and harming farm animals. Farmers of greenhouse vegetables were found to add 70 percent, 230 percent and 700 percent more of nitrogen, phosphorus and magnesium, respectively, than needed (Harb, 2019). This is reflected in the high levels of phosphorus and magnesium found in the soil, as well as in plant tissue tests, which show high nitrogen content (Harb, 2019). Moreover, restrictions on fertilizer imports have led to the use of **inferior fertilizers**, which are often diluted, adulterated and smuggled (MAS, 2017), and contributed further to soil degradation. Estimated consumption of pesticides is also quite high as well, with 5 percent of them classified as highly hazardous, and approximately 35 percent as moderately dangerous (EQA, 2018). Multiple factors drive the **excessive and uncontrolled use of pesticides, chemical fertilizers, hormones, and antibiotics**, particularly economic factors, such as attempts to secure higher yields and output and a **lack of an effective information system and ineffective extension services**.

The impact is evident based on the **compromised food safety**, as cases of severe diseases, mainly cancer, have skyrocketed. Research has found strong associations between the abuse of

pesticides and cancer cases in some areas of the territory (Safi, 2002) and stakeholder discussions have brought forward very strong opinions and concerns about the issue. This would be an important topic for deeper research, given the deeply held and widespread perceptions that the excessive use of pesticides and fertilizers is likely to further affect food systems, as pollution, soil degradation and chemical residues further compromises the safety of locally produced foodstuffs and contributes to worsening health problems.

Increasing urbanization and population growth, direct degradation arising from Israeli military operations, limitations in the implementation of environmental management measures, and threats from wastewater pollution and solid waste have put biodiversity in the Occupied Palestinian Territory at risk (UNEP, 2003). Furthermore, the systematic **tree uprooting policy of Israel** in the name of security led to the uprooting of more than one million trees in the Gaza Strip and the West Bank during the Second Intifada (ARIJ, 2015). The **loss of biodiversity** is a threat to the future sustainability of food systems.

Given the current climate trends and the low adaptive capacity of the Palestinian food systems to adequately use and manage natural resources, the agriculture sector is highly exposed to climate change, with irrigated vegetables, olives, grapes, stone fruits, rainfed crops (e.g. cereals and pulses) and livestock production being highly vulnerable (EQA, 2016b). Climate change impacts will potentially affect the entire food chain further, jeopardizing food security and nutrition (Tippmann and Baroni, 2017). Restricted access to land and water has hindered economic activity, affecting the livelihoods of communities, deepening poverty levels and further increasing vulnerability. It has adversely affected the possibility of absorbing young people in food systems, leading to drastic increases in unemployment and increased reliance on food imports, particularly fruits, animal feeds and cereals.



At the governmental level, the Palestinian Environment Quality Authority (EQA) has recently finalized the implementation plan of NDC for climate change and identified the agricultural sector as the major focus for interventions (EQA, 2022). One of their food systems-related goals is to increase carbon stock in plant biomass and soil organic matter through supporting an annual 2 percent increase in green areas in the Occupied Palestinian Territory. This is also reported in the National Policy Agenda (2017–2022) and the National Food and Nutrition Security Policy (2019–2030). In addition, the plan prioritizes climate-smart agriculture – with the aim that 50 percent of farms in the territory take this approach by 2040.

### Proposed systemic levers

The Palestinian policy and investment framework for food security notes that while access to critical natural resources for sustainable agricultural practices is restricted by the Israeli occupation, a priority is to improve efficiency in the use of resources that are available. Investment priorities accordingly include increasing water-harvesting capacity, use of unconventional water sources and improved water governance. Additionally, efforts to address climate challenges include enhancing knowledge and capacity at institutions and enterprises, and increasing access to renewable energy sources.

Given the context, and consistent with the overarching guidance provided by NIP, two major levers have been identified: enhancing climate change adaptation capacities; and, improving water resources management.

#### ***Lever 1: Effective and widespread investments for climate change adaptation***

Higher temperatures and increasing droughts and warm spells call for additional effort in optimizing the use of natural resources and in ensuring adoption of climate adaptive and energy efficiency approaches. This includes promoting the dissemination of information to the public

and farmers on climate change; supporting the adoption of energy-efficient processes and renewable energy in agribusiness; and enhancing climate research to obtain tailored projections, scenarios and forecasts. Specifically, public actions required to enhance capacities include three main typologies of action. First, **investing in knowledge and preparedness** of institutions, such as the Palestinian Meteorological Department, to understand and communicate local climate and its variations, and of farmers and agricultural entrepreneurs in understanding climate change impacts and risks. Second, investing in the **dissemination of climate adaptation practices**, including drought-resistant varieties and hydroponic agricultural technology. Third, **improving the energy-water nexus**, by supporting the adoption of energy-efficient processes and renewable energy in agribusiness, and investing in nonconventional water supplies (see also Lever 2).

#### ***Lever 2: Increased availability of water for agriculture, including treated wastewater***

This includes enhancing the development of alternative water resources, rehabilitating agricultural wells and springs, scaling up water-harvesting projects to increase water-harvesting capacity and improving water governance. **Investment in rehabilitation and use of treated wastewater has been identified as a priority**, both in necessary hard infrastructure (e.g. conveyance systems and plants), and in soft infrastructure, which is required to catalyse the utilization of treated wastewater, such as the formation of treated wastewater user associations, and boosting the capacity of extension staff and farmers in using and managing treated wastewater. In addition and in parallel, the priority also includes the **rehabilitation of agricultural wells and springs** to increase surface water availability, **investments in upscale small, medium and large water harvesting facilities** (targeting micro and small facilities that are not subject to the ban on large water infrastructure imposed by Israeli authorities) and investments in cisterns.



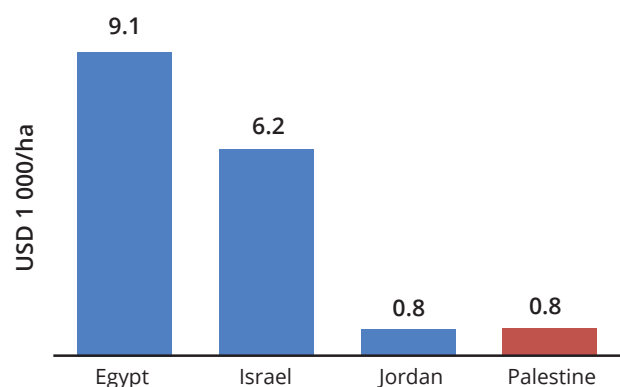
### Key Sustainability Question 3: What are the reasons behind the underperformance of a number of agrifood value chains, which is threatening their long-term sustainability?

A thriving agrifood sector is essential for sustainable food systems transformation. In the Occupied Palestinian Territory, however, this sector operates under severe constraints and faces several challenges. Political instability, Israeli control over Palestinian natural resources, limitations on the movement of people and goods, Israeli settlement expansion, fragmentation of the West Bank and the blockade on the Gaza Strip have led to the decline of the agriculture and manufacturing sectors, resulting in a largely distorted economy based on non-tradable sectors, such as services, finance and public administration (MAS, 2017). During the Second Intifada of 2000–2005, and the associated mobility restrictions, which were mostly concentrated in the West Bank, agricultural production declined significantly.<sup>27</sup> During that time, the Gaza Strip fisheries sector was also substantially disrupted.<sup>28</sup> Although production picked up in the following years, it exhibited a declining pattern again after 2011.<sup>29</sup> As noted earlier, the contribution of the agrifood sector has fallen in recent decades, to 6.4 percent of GDP (FAO, 2018). Nonetheless, it remains an important source of livelihoods and is critical for the resilience of Palestinian households and communities.

Coping with the occupation for more than 50 years now, part of the Occupied Palestinian Territory – the Gaza Strip – is immersed in poverty and a humanitarian tragedy, while the West Bank is challenged by land fragmentation and weakened public institutions. As a result, its agrifood value chains have become frail and disadvantaged. Industry associations cannot generate high-quality analytics or lead genuine

public-private dialogue, making it difficult or even impossible to maximize the value of primary agriculture. Labour productivity in agriculture declined by more than 50 percent between 1995 and 2011, resulting in a reduction in agricultural wages and incomes (UNCTAD, 2015b). Furthermore, the weak market infrastructure – wholesale markets, retail outlets and food safety labs – makes the transition of fresh produce “from farm to fork” complex and inefficient. This is reflected in the low returns on Palestinian farmlands compared to Egypt or Israel (Figure 13). From a World Bank study conducted in 2013, it was concluded that the agriculture value added potential of Area C of the West Bank in the absence of restrictions was more than USD 704 million – approximately twice as much as the agriculture value added in 2012.

**Figure 13. Agriculture value added per hectare of agricultural land (2016 data)**



**Source:** FAO. 2021. FAOSTAT Production Database. In: FAO. Rome. Cited 20 March 2023. [www.fao.org/faostat/en/#data](http://www.fao.org/faostat/en/#data)

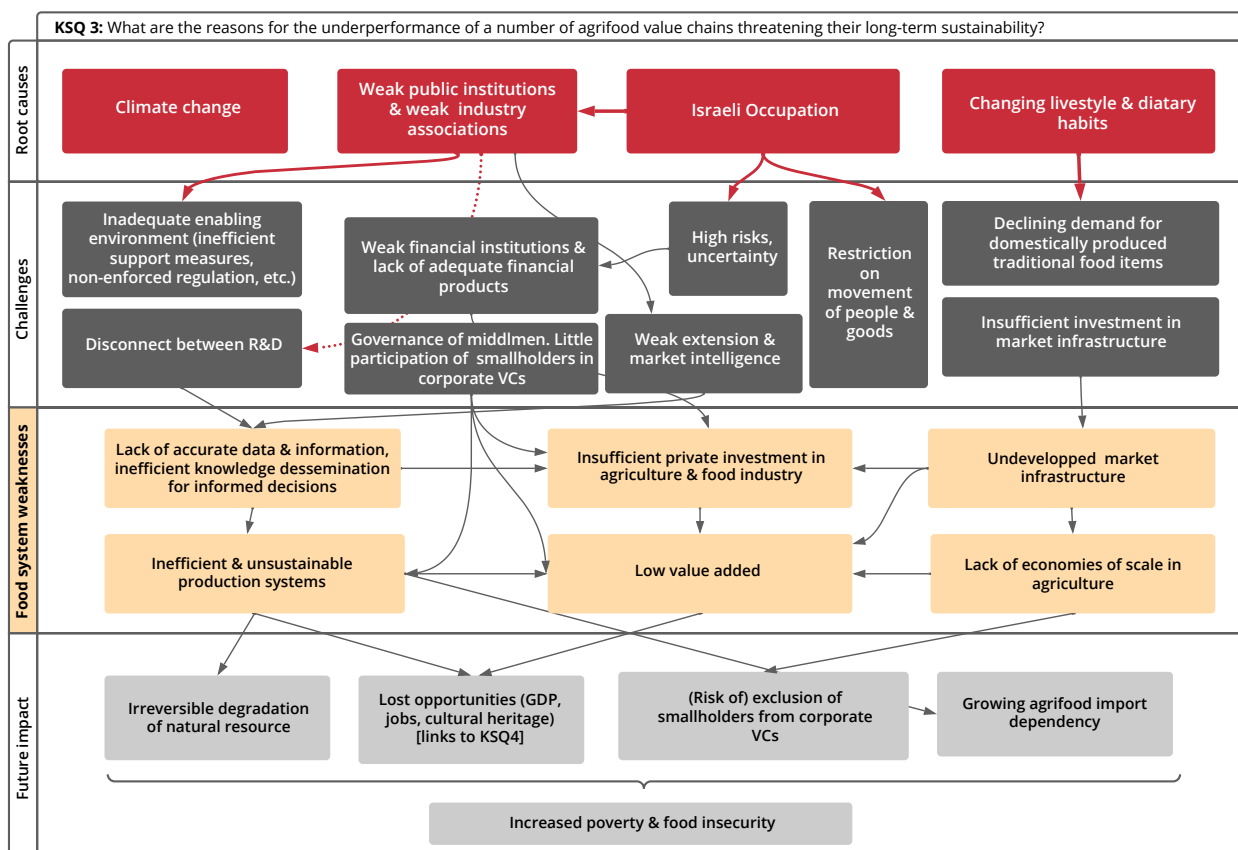
<sup>27</sup> The Second Intifada, the second mass resistance movement against the Israeli occupation, lasted from 28 September 2000 to 8 February 2005.

<sup>28</sup> Challenges to the fisheries and aquaculture sector in the Gaza Strip include institutional structure, constraints on the movement of people and goods, degraded infrastructure and deteriorating vessels (World Bank, 2020).

<sup>29</sup> Similar trends are also observed for manufactured foods (food processing).



Figure 14. Reasons for the underperformance of agrifood value chains in the Occupied Palestinian Territory



Source: Authors, 2022.

The **Israeli occupation** is a key impediment to developing a vibrant agrifood sector, as Palestinians are unable to control and manage critical natural resources, such as land and water (as discussed in KSQ 2). In the West Bank, almost all the land that is suitable for agricultural production is in Area C, but **access is to it is severely restricted or prohibited**. Figure 15 shows the changes in land available for field crops, vegetables and fruit trees in the West Bank and the Gaza Strip over the period 1968–2011. Since the 1990s, following the imposition of restrictions on Area C, agricultural land in the West Bank has declined significantly.

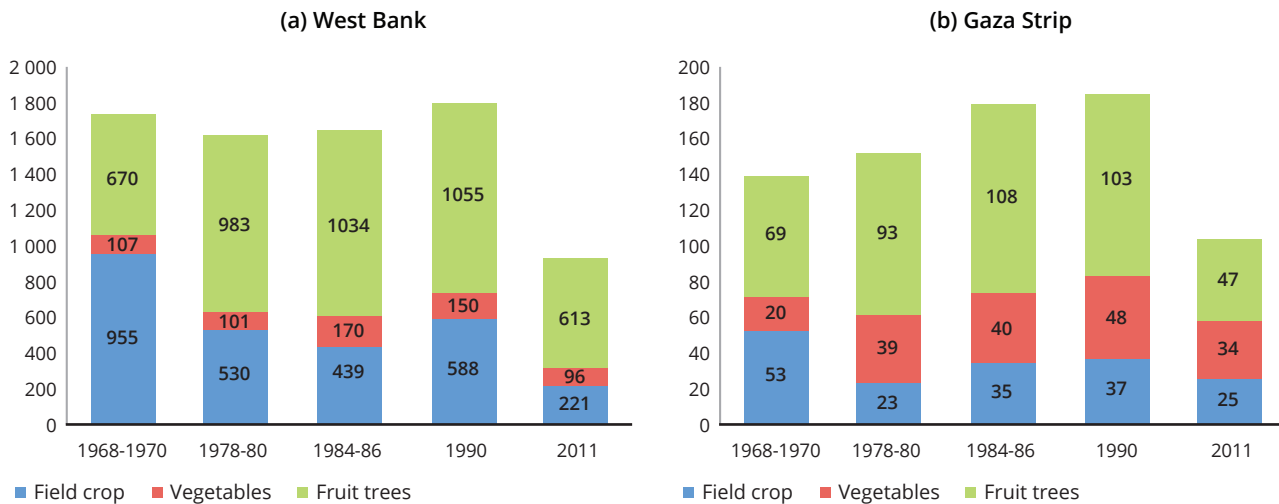
As reported during the consultations for the FSA, in the Gaza Strip as well the **prolonged blockade since 2007 and the recurrent conflicts** have left the agriculture sector in ruins, a situation compounded by the ban on Palestinian farmers

in accessing most agricultural and grazing land near the border with Israel. Due to barriers established to separate Israeli and Palestinian land, many Palestinian-owned farms have been lost to the Israeli side of the borders, and farmers are forced to try and obtain a permit to use their own land. Overall, some 3 000 farmers, with land in or beyond the areas along the fence, face access restrictions and have difficulty in engaging in agriculture, leaving 20 percent of arable land in the Gaza Strip unplanted.

Another factor that has hampered the agriculture sector is the systematic **tree uprooting policy** of Israel in the name of security (ARIJ 2015). Farming is even more difficult on lands near Israeli settlements due to settler violence. The high uncertainty due to the occupation **reduces incentives for private investment**.



Figure 15. Patterns of change in agricultural land, 1968–2011 (in dunums)

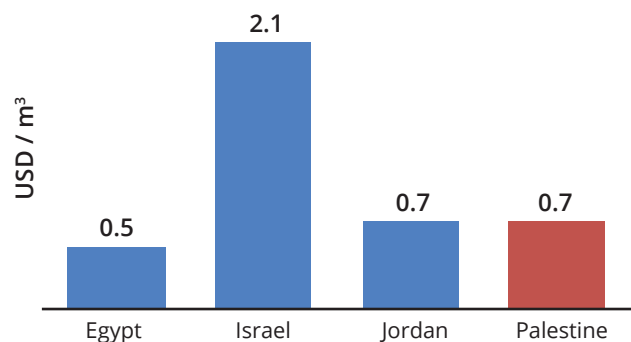


Source: MAS (Palestine Equity Policy Research). 2017. Strategic review of food and nutrition security in Palestine, 2017. [www.un.org/unispal/wp-content/uploads/2018/02/WFPREV\\_140218.pdf](http://www.un.org/unispal/wp-content/uploads/2018/02/WFPREV_140218.pdf)

Moreover, **complete control held by Israel over water resources and restrictions on the development of critical infrastructure** has led to chronic shortages in water supply. Almost 95 percent of cultivated land is rainfed (UNCTAD, 2017a). Water at more than NIS 30/m<sup>3</sup> has become a costly commodity, especially in remote areas and in the eastern slopes of the West Bank. The demolition and confiscation of homes and livelihood structures, extensive destruction of agricultural structures, water connections and wells,<sup>30</sup> severe limitations imposed on basic maintenance and repair/rehabilitation of productive assets, difficulty in obtaining permits to construct water systems and restrictions on drilling new wells, have substantially reduced the potential of the Palestinian agriculture sector and contributed towards the deterioration of livelihoods and the socioeconomic environment (WFP, 2021). Furthermore, as discussed previously, the rapidly **deteriorating quality of irrigation water** threatens the future sustainability of farming activities in the region, especially in the Gaza Strip where groundwater has become increasingly unsuitable for agriculture use due to excessive contamination

by untreated wastewater and unrepaired and damaged water infrastructure. In addition to scarcity and quality issues, the efficiency of water use is quite poor. Figure 16 shows efficiency of water use (value added per m<sup>3</sup> of water) in the Occupied Palestinian Territory in comparison to Egypt, Israel and Jordan.

Figure 16. Efficiency of agriculture water use (value added in USD/m<sup>3</sup>)



Source: UN-Water. 2018. *Progress on Water-use Efficiency – Global baseline for SDG indicator 6.4.1*. Geneva and Rome, UN-Water and FAO. [https://www.unwater.org/sites/default/files/app/uploads/2018/10/SDG6\\_Indicator\\_Report\\_641-progress-on-water-use-efficiency-2018.pdf](https://www.unwater.org/sites/default/files/app/uploads/2018/10/SDG6_Indicator_Report_641-progress-on-water-use-efficiency-2018.pdf)

<sup>30</sup> As of November 2019, a total of 134 agricultural and 83 livelihood structures were partially or fully demolished in 2019, and approximately 700 trees were vandalized by settlers (WFP, 2021).



The situation is further worsened by the **restrictions on movement of goods and people**, which makes it difficult for farmers to access their land and also **limits their access to markets**, both locally and externally.<sup>31</sup> The West Bank and the Gaza Strip are practically disconnected from Arab countries in the region, as well as from the rest of the world. Consequently, inputs for food production and outputs for regional or global markets must be transported through Israeli ports and the land it controls, and are, therefore, under the direct control of the military authority of the Israeli occupation. Furthermore, Palestinian trade is subject to permit requirements,<sup>32</sup> and import bans on certain products under a restrictive Israeli dual-use system, in addition to strict phytosanitary requirements. Farmers in the Gaza Strip, for example, have replaced citrus groves with nurseries to grow flowers for export. But the subsequent blockade cut off such exports, while at the same time Israeli producers flooded the Palestinian food market with cheaper citrus fruits produced under more favourable conditions. This has severely damaged the livelihood of many Palestinian farmers (MAS, 2017). The separation of the West Bank from the Gaza Strip presents further challenges. Prior to the blockade, for instance, the Gaza Strip economy was largely export-oriented, but exports to Israel have been banned and trade with the West Bank severely restricted under the blockade (MAS, 2017).

The limited **access to agriculture inputs** at affordable prices is another obstacle. Israel has restricted access to inputs and agriculture machinery with dual use, such as fertilizers, chemicals and steel pipes, among other items. The **restrictions on fertilizer imports** have been shown to create problems, such as soil degradation, resulting from using inferior



fertilizers that are often smuggled, diluted and adulterated.<sup>33</sup> Agricultural productivity declined by 20–33 percent after the enforcement of restrictions on fertilizer imports (UNCTAD, 2015b). There are also **restrictions on the importation of seedlings and improved varieties of livestock and seeds**. The livestock industry is adversely affected by the the poor quality fodder brought in from Israel and **unreliable and costly supply**. Palestinian production is also undermined by Israel flooding the Palestinian market with cheap, often substandard, agricultural goods produced under more favourable conditions with support from the Government of Israel (2015b).

The **fishing industry has also been affected** by the occupation restrictions. Palestinian fisherman, for instance, can no longer sail beyond 3–6 nautical miles offshore – down from 20 nautical miles, as articulated in the Oslo Accords. Despite the on-off expansion of the fishing zone off the Gaza coast up to 15 nautical miles in 2019, there is **limited capacity to fish**. Ageing boats, nets, engines and other equipment need to be rehabilitated or replaced. Long-term access constraints, in addition to **restrictions on the import of essential equipment**, continue to

<sup>31</sup> Agriculture-dependent communities, particularly the Bedouins and herders in Area C, face significant challenges in accessing grazing lands, water and animal health services.

<sup>32</sup> Palestinians, for instance, are required by Israel to obtain a permit in order to transport goods. This has become increasingly difficult due to the country's control of movements to and from East Jerusalem, as well as the many checkpoints Palestinians must go through, increasing the costs of transporting agricultural output to markets.

<sup>33</sup> Testifying to the suboptimal use of fertilizers, Palestinian farmers use approximately 40 percent of the fertilizer used by Jordanian farmers and often use lower quality fertilizers, lowering agriculture productivity (ARIJ 2015).





undermine the livelihoods of fishers in the Gaza Strip.

Despite having similar soil and climate, Palestinian agricultural output and productivity have lagged that of Israel and other countries in the region. Although the sector operates under the constraints of the occupation, other contributing factors behind the production and productivity gaps are technical, organizational and managerial factors, which are at least partially under Palestinian control (UNCTAD, 2015b). The United Nations Conference on Trade and Development (UNCTAD) lists among them the lack of application of available modern agricultural systems and techniques; limited research; and lack of success in securing improved seed and crop varieties and livestock breeds with high productivity; veterinary services; plant protection; marketing; financing; and post-harvest services.

During the past decade, efforts to develop value chains in the Occupied Palestinian Territory mainly focused on vegetables, olives, fruits, such as grapes and figs, and almonds. Farming practices that could boost contributions to value chains are, however, constrained by restrictions on the use of water and land and on imports of materials and technologies. Almost 95 percent of agriculture is rainfed, and farmers, in their pursuit of better yields and production volumes, tend to overuse chemical fertilizers, herbicides and pesticides, destroying soil health and biodiversity.

**Climate change** will further exacerbate strains on water management structures, reduce soil fertility, aggravate land degradation, worsen crop and livestock diseases, and increase food losses. Reduced rainfall and increased evapotranspiration already affect yields from rainfed agriculture and pastoralism. Climate-smart agriculture techniques are seldom applied or promoted in the territory's production systems, and traditional farms are generally unaware of regenerative agriculture to increase yields. There is also a need to consider sustainable, self-sufficient permaculture approaches, given the fragile environment, and limited land and water

resources. Evidence suggests that the **industrial agriculture model** (largely monoculture with heavy use of agrochemicals) is not the right formula for the agrifood value chains, as it leads to water depletion, soil degradation and loss of biodiversity. In fact, relative to intensive farming operations, smallholder farmers offer higher value returns, leave a lighter environmental footprint and are more resilient to climate change. Furthermore, high productivity in intensive agriculture often comes together with significant State support to farmers. Producer support, for instance, is estimated at 21.4 percent in Israel and at 19.3 percent in the European Union (Organisation for Economic Co-operation and Development (OECD) producer support estimates). Valorizing the cultural heritage driven by family farms could constitute a substantial step towards progress, given the consumption shift towards essential, natural and healthy foods.

The lack of sufficient water for irrigation and for better genotypes, improper irrigation scheduling and fertilizer application, the ineffective information and extension system, and the lack of effective agricultural cooperatives have resulted in very low productivity of rainfed agriculture and the medium productivity of irrigated agriculture. In addition, increases in input prices have further reduced the profitability of farmers, particularly the smaller farmer (ARIJ, 2015). Animal health and food safety issues remain a serious concern, especially in the Gaza strip, considering the limited capacities to predict and address associated risks. Moreover, the **farm structure in the Occupied Palestinian Territory is highly fragmented**. More than 90 percent of the agriculture is shaped by smallholder farms, herders and fishermen, of which many are not connected to corporate markets. Value chains that include them are often governed by middlemen with all the ensuing consequences, such as unfair pricing and delays in payments, which make farmers constantly short of cash, jeopardizing their expansion potential, and void in information flows. Furthermore, agribusinesses strive to source high-quality raw materials. This results in suboptimal farming practices,



unsustainable use of the natural resources, unstable access to markets and unfair producer prices, especially in the West Bank, where the commercialization rate of smallholders' produce is as low as 18 percent (Marzin, Uwaidat and Sourisseau, 2019).

**Agricultural infrastructure is weak** and has continued to deteriorate in the context of conflict and Israeli control over sector inputs and resources. Moreover, significant differences exist between various governorates, which are attributed to topography, the relative importance of agricultural sectors, and interventions by the government and non-governmental organizations. Recent assessments reveal that most farms are connected to **agricultural roads**, and at least 50 percent of farms are connected to paved roads. The impact of unpaved roads on food losses and the deterioration of commodities – in particular perishable plant products – is moderate, less than 3 percent out of 20 percent of the quantitative losses recorded for a set of food supply chains.

**Another driver is the inadequate access to energy resources, specifically in the Gaza Strip, which suffers from a chronic electricity deficit** (OCHA, 2023). Data show that electricity is available for the majority of farms.<sup>34</sup> However,

farmers complain that the existing supply of electricity is unreliable and not sufficient to operate heavy equipment. This undermines the introduction of modern techniques, including digitalization. The situation in the Gaza Strip is much worse than in the West Bank, as electricity is very unreliable and available for just a few hours each day. The lack of electricity negatively affects all aspects of life, including food safety, and makes it almost impossible to operate food processing units effectively.<sup>35</sup> In the territory, fuel and energy costs are among the highest in the Middle East and North African region, and the power sector is highly dependent on the imported power supply (88 percent from Israel and 3 percent from Jordan and Egypt). Projected changes in climate parameters (e.g. temperature and rainfall), along with demographic growth, are expected to further affect the overall costs of agricultural production by increasing costs of energy and water. There is high potential for renewable energy sources – particularly solar power – which can be used for pumping water, in rural electrification, and for desalination of brackish water and seawater, mainly in the Gaza Strip (Yamin, 2023). Consequently, demand for solar panels and installation of such equipment is increasing. An FAO assessment of the demand and related investment costs has found that, despite high initial outlays, the investment

<sup>34</sup> In January 2015, 99.9 percent of Palestinian households were connected to the public electricity network.

<sup>35</sup> Of particular importance in this respect are the fisheries in the Gaza Strip.



is financially and economically profitable (FAO, forthcoming).<sup>36</sup> Efforts to promote the establishment of solar systems and strengthen the existing electricity system is crucial for sustainable development in all governorates, with priorities extended to agricultural communities, such as the southern region of Hebron governorate, where most sheep farming takes place.

Lack of **financial inclusion** remains a constraining factor. The providers of financial services find it unattractive and risky to invest in agriculture. Existing literature and recent diagnostics highlight a very conservative and risk-averse attitude of the banking system.<sup>37</sup> There is some reluctance to lend in the sector and agreements stipulate onerous collateral requirements. Development funds and microcredit can play a role in improving access by adding liquidity into the system. Many farmers and herders, however, are not considered bankable and resort to borrowing through informal, personal or family channels. Existing institutions, such as the Palestinian Disaster Risk Reduction and Insurance Fund (PADRRIF) and the Palestine Insurance Federation, are developing capacity and pilot schemes, but these remain in their infancy and have had no real impact yet. The growing modern sector (e.g. date palm plantations and poultry farms) is able to secure finance more easily.

The **lack of an enabling environment**, with conservative financial institutions, inadequate financial products, inefficient support measures, lack of regulatory enforcement and weak extension and market intelligence have created a disconnect between research and development, and contributed to low adoption rates of good practices and efficient technologies, including digitalization. Less than 1 percent of the farms in the Occupied Palestinian Territory are certified to good agricultural practice standards. **Unable to comply with food safety standards** for local and international markets, most smallholders

are trapped in informal channels. The Occupied Palestinian Territory markets significant quantities of herbs and spices, for example, but packaging companies source most of the produce from abroad. Spices, such as aniseed, fenugreek, coriander seeds, sumac, sesame seeds and other higher-value crops, could be grown in the territory, but are either not cultivated because of lack of market intelligence, or are grown, but do not meet food safety norms and quality requirements. Demand for them is mostly met through imports from Turkey, Syria, Egypt, India, Sudan and Ethiopia. Market-oriented cropping decisions and adoption of good practices could effectively increase farmers' incomes by 4–6 times, or even more. The cumulative value of the imported spices that could have been grown domestically between 2015 and 2020 is USD 175.4 million (Trade Data Monitor, 2023). An undeveloped almond value chain is another example of a lost opportunity.

**Undeveloped processing capacity, inadequate production technology**, such as lack of modern greenhouses and limited choice of varieties, and **disorganized supply chains**, leave many opportunities for the Palestinian food industry unrealized. Domestic production of fruit juices and other healthier alternatives to carbonated drinks is negligible, even though consumption is booming. The agrifood value chains could benefit from increasing their capacity to guarantee production volumes and quality (food safety) to generate value added and reduce price fluctuations.

**Failure to generate accurate data for informed decision-making** compromises the territory's capacity to mitigate future shocks and help the economy to prosper. Businesses, the government and development partners have difficulty in taking evidence-based decisions in the absence of accurate, and up-to-date data. The lack of clear supply-demand indicators, production structure/functions, commercialization rates,

<sup>36</sup> Analysis is in a forthcoming FAO publication from an exercise conducted in 2021: "The participated roadmap of the solar energy – Gaza Strip".

<sup>37</sup> A recent diagnostic was carried out by MAS and FAO in 2021, titled "Baseline Diagnostic Study of Agricultural Finance in Palestine".



and consumption patterns lead to uninformed decision-making processes, which results in inefficient and unsustainable production systems.

Moreover, rapid population growth, high urbanization, the expansion of Israeli settlements, land use changes and the unsustainable use of natural resources have put severe pressure on the ecosystem. The **urbanization** has occurred rapidly with inadequate planning.<sup>38</sup> The restrictions on construction activities in Area C have contributed significantly to expanding urbanization into agricultural land in Area A and Area B. **Population growth** has also contributed to the increase in land value, leading to the sale of land for urban infrastructure and buildings on agricultural lands. Available data show that between 1993 and 2003, approximately 15 percent of the population in the West Bank built houses on their agricultural land (ARIJ 2015). The **political situation limits the policy space** and impedes efforts to address natural resource scarcity and challenges associated with urbanization challenges. Between 1992 and 2015, the land area under artificial surfaces increased from 1.4 to 4.3 per cent, whereas the area under vegetation cover decreased. This change in land use increases vulnerability to extreme weather events, including flash floods. The area under cultivation decreased from 36.5 percent to 24.4 percent between 1997 and 2015. Rangelands have been exposed to overgrazing for long periods of time, leading to the disappearance of plant species and to soil erosion. And the proportionate increase in built-up areas in the Gaza Strip – from 8.25 percent in 1982 to 25 percent in 2010 – has also reduced groundwater recharge (ARU, 2015).

The chronic decline in food and agriculture production, and the underperformance of agrifood value chains, has led to increasing reliance on imports to meet domestic food consumption needs. This has exposed them to price shocks in the international market and contributed to rising food insecurity. In addition, it

affects rural livelihoods and incomes, contributing to poverty and unemployment, which are key drivers of food insecurity and malnutrition. There are concerns about food safety as well. The agrifood sector is estimated to be operating at a quarter of its potential. Increasing investment in rural infrastructure and agricultural research and development, correcting and preventing trade distortions in world agricultural markets, and adopting measures to ensure the proper functioning of food commodity markets, timely access to market information, developing food reserves and introducing measures to prevent food price volatility could go a long way in improving the performance of the sector.

## Proposed systemic levers

In the light of this discussion, and taking into account the stakeholder consultation workshops held in the Occupied Palestinian Territory, three priority action areas were identified that would enable the transition towards sustainable food systems.

### ***Lever 1: Public-private dialogue on policy shifts towards value chain integration***

Such dialogue should involve all stakeholders and be sector-specific, constructive, evidence-based, and transparent. It would aim to form the basis for progress through the appropriate legal and regulatory frameworks to draw up a road map for the recognition of the Palestinian agricultural heritage by defining goals and designating responsible stakeholders, activities, deadlines and performance measures. Shifting investments and policy attention in favour of smallholders' empowerment is vital to secure the future of the agrifood value chain in the Occupied Palestinian Territory. To this end, the prime priority areas of dialogue would be the following:

- inclusion of smallholders into corporate value chains; and

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<sup>38</sup> The urban population has almost tripled in the past 25 years.



- transparent implementation of social and environmental standards for agribusinesses sourcing raw materials from smallholders.

At the same time, agribusinesses need assistance in adopting such social and environmental responsibilities and standards. In this regard, partnerships between family farms and auditable and transparent agribusinesses can ensure fair distribution of profits among value chain actors and the resilience of the chain as a whole.

The aim of integrating small farms into agribusiness-led value chains would be to increase their prospects for engaging in long-term commercial transactions, stable market access and better producer prices, knowledge transmission, good practices and technologies to help farmers improve their operations. Together these would maximize the value of Palestinian land and water and gain successful places on domestic and international markets.

This result would spark a process of expanding labour demand along the chain, ultimately

contributing to a stronger economy, and a healthier territory. Palestinian family-farm driven agriculture has the potential to reduce imports and dependence on Israeli products, substituting them with domestic production. Unlocking this potential would not only benefit the economy, but it would also help to preserve the environment and sustain rural livelihoods. In parallel, existing intensive farming could be transformed through smart subsidies for large, monoculture farms, incentivizing sustainable production.

For the upscale of the compliant production protocols and of traceability measures and circulation of or access to information, policy shifts should also take into account action on standards and regulations for quality control and quality assurance. Implementation could occur by initiating policies, training and capacity-building for all stakeholders. An example of this would be the process quality during farming, with consistency in packaging and technical quality controls that take into account international food safety standards.





Finally, after finalization of a short-term transition, the long-term perspective could consider broadening the agribusiness support landscape to include:

- sponsorship of a Palestinian pavilion at major food trade shows;
- implementation of norms and certifications; and
- product development.

### ***Lever 2: Professional advisory services to farmers, including consultancy on the use of digital technologies***

This lever would aim to catalyse the adoption of market-oriented, sustainable practices and technologies, pursuing value chain integration. As international experience shows, support programmes subsidizing access to professional advisory services are effective. These services would include the provision of capacity building for farmers, producers and the private sector with regard to farming tools, technologies, crop and breed selection, technical requirements and contracting conditions as set by the buyer. Better knowledge and accurate data would enable direct business transactions between smallholders and agribusinesses for integration throughout the value chain.

Areas to be tackled include:

- food safety (demonstrated with traceability);
- good agricultural and post-harvest practices;
- natural resource use efficiency (focus on water and soil health);
- fair pricing and improved value chain governance to improve farmer margins;
- institutional development (organic establishment of farmer groups);
- product quality and market positioning (focus on authenticity); and
- market intelligence.

Farmers would also largely benefit from the development of organized farming associations



that represent their interests in formulating agricultural policies and in issues, such as taxes, tariffs, domestic demand and potential exports.

### ***Lever 3: Public investment in aggregation and market infrastructure***

Value chain integration requires reinforcement of market infrastructure, backed by public intervention in partnerships with the private sector. Insufficient investment in market infrastructure accentuates fragmentation of providers, and lags in the adoption of good practices, such as in cold chain management and food safety control. To render the transition of fresh produce from farm to fork efficient and reliable, investments in physical and technological infrastructure need to target collection centres, wholesale markets, cold chain elements and food safety labs, so that adequately equipped facilities are available at each step, preserving the added value and reducing food losses.

The overall goal of these interventions should be to increase farm profitability, drive implementation of social and environmental standards by agribusinesses and ensure an adequate policy framework, which would be conducive to greater private investment.



#### Key Sustainability Question 4: What are the reasons behind the limited employment and entrepreneurship opportunities in the agrifood sector in the Occupied Palestinian Territory, especially for women, young people and people with disabilities?

Unemployment in the Occupied Palestinian Territory for individuals aged 15 years and above reached 25.9 percent in 2020 – approximately 335 000 people, of which more than half (198 000 people) were in the Gaza Strip, and 137 000 were in the West Bank (PCBS, 2021d). The labour force participation rate for this group was 40 percent. Moreover, there are significant socioeconomic and territorial inequalities; unemployment was much higher in the Gaza Strip (46.6 percent) than in the West

Bank (15.7 percent). Labour force participation for women was only 16 percent with an unemployment rate of 40 percent, compared to the men's labour force participation rate of 65 percent and unemployment rate of 22.5 percent (Table 5). Unemployment is also very prominent among young people.

The COVID-19 pandemic has worsened the unemployment situation since the PCBS survey.

**Table 5. Labour force status and unemployment rate in the Occupied Palestinian Territory in 2020 (for individuals aged 15 years and above)**

| (in thousands, unless specified as %) | Total | Outside labour force | In the labour force | Unemployed | Unemployed, % |
|---------------------------------------|-------|----------------------|---------------------|------------|---------------|
| <b>Occupied Palestinian Territory</b> | 3 153 | 1 862 (59%)          | 1 291 (41%)         | 335        | 25.9%         |
| <b>Males</b>                          |       | 35%                  | 65%                 |            | 22.5%         |
| <b>Females</b>                        |       | 84%                  | 16%                 |            | 40.1%         |
| <b>Young people (ages 15-24)</b>      |       | 74%                  | 26%                 |            | 42.1%         |
| <b>Young People (ages 25-34)</b>      |       | 44%                  | 56%                 |            | 32.4%         |
| <b>West Bank</b>                      | 1 951 | 1 084 (56%)          | 867 (44%)           | 137        | 15.7%         |
| <b>Gaza Strip</b>                     | 1 202 | 778 (65%)            | 424 (35%)           | 198        | 46.6%         |

**Source:** PCBS. 2021d. *Palestinian Labour Force Survey Annual Report 2020*. Ramallah, Occupied Palestinian Territory, PCBS

An important consideration in agricultural employment is that more than 70 percent of workers in the sector are women. As many of them are engaged in informal work, however, their complete numbers are not included in official statistics. Additionally, even though women represent this critical share of the agrifood workforce, gender disparities are rampant, and the situation has worsened further since the COVID-19 pandemic. Women have

higher unemployment rates, receive lower wages, and are subject to increased discrimination and gender-based segregation (ILO, 2020). In addition to the significant gaps in remuneration, female work is often characterized as casual and unpaid family labour. Moreover, women in the territory are subject to various social, economic and hurdles that impede their ability to advance in formal employment, and they must endure the negative implications of restrictions imposed by



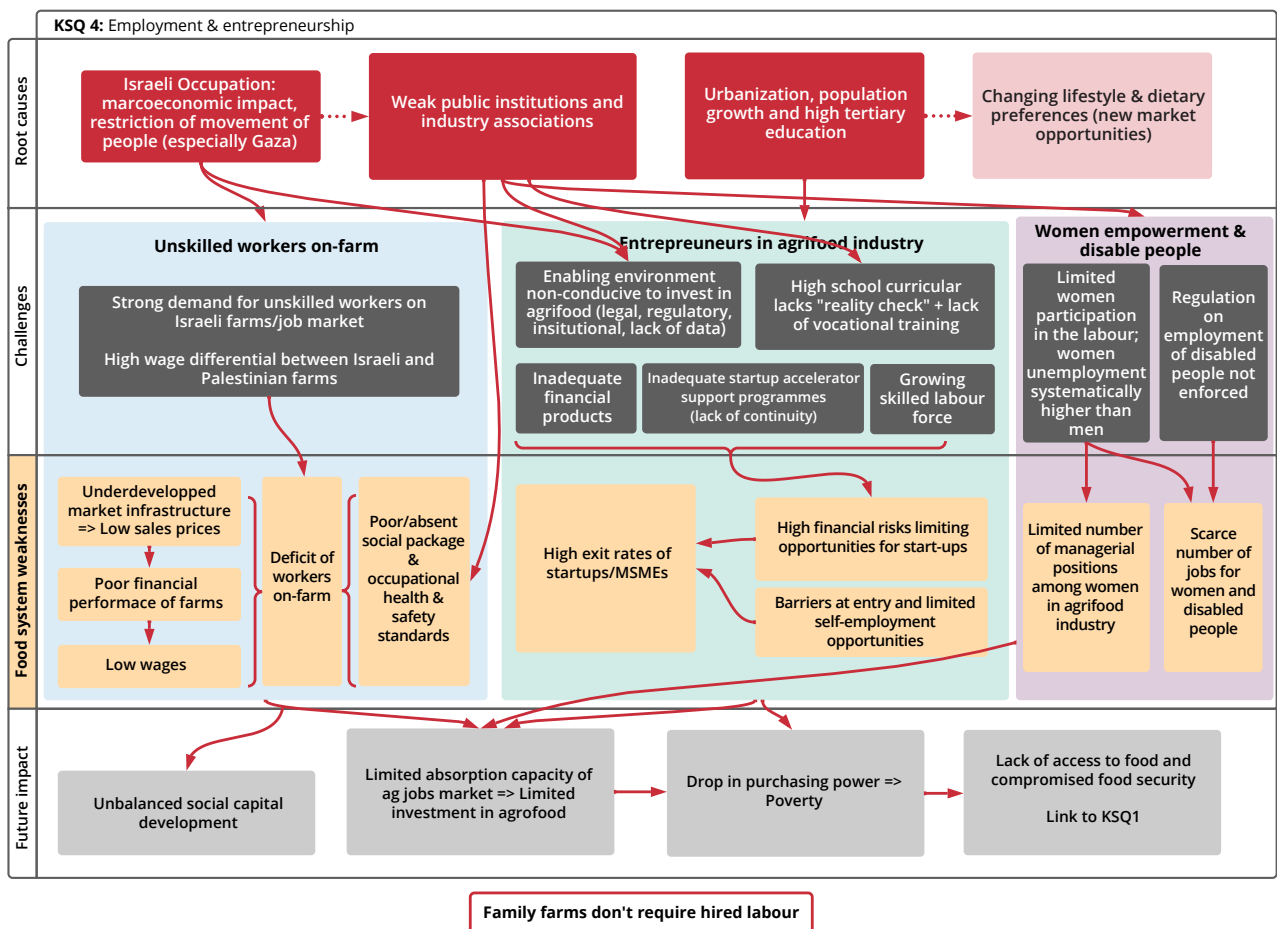
the Israeli occupation. According to Palestinian agribusiness experts, women occupy only a fraction of managerial jobs (one out of 15) in the Occupied Palestinian Territory. Only 13 percent of national parliamentarians are women while female politicians account for just 8 percent of the members of the Palestinian National Council.

Another vulnerable social group is people with disabilities. As service sector and non-governmental organization resources are stretched thin, Palestinians are struggling to meet their basic needs, especially people with disabilities, who are often overlooked and lack proper representation in development and relief efforts. People with disabilities must contend with discrimination at every level of

society, in particular in the areas of education and employment. This situation is especially problematic for women with disabilities and the mothers of children with disabilities (Humanity & Inclusion, 2023).

Several key factors contribute to the lack of adequate employment and entrepreneurship opportunities in the Occupied Palestinian Territory. Among them are the Israeli occupation and the continuous blockade of the Gaza Strip; limited absorptive capacity of the different Palestinian employment sectors; low productivity and seasonality of agriculture; lack of coordination between the education system and labour market; weak public institutions and industry associations; and financial exclusion (Figure 17).

**Figure 17. Reasons for poor employment and entrepreneurship opportunities in the Occupied Palestinian Territory**



Source: Authors, 2022.





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The macroeconomic impact of the **Israeli occupation** and restrictions on the movement of people and goods, particularly in the Gaza Strip, negatively affect the **job market** for Palestinians. Weak public institutions and industry associations fail to provide an **enabling environment** for the development of primary producers and agribusinesses.

At the farm level, the gap in the demand and supply of labour is widening. While expansion of intensive farming operations has led to increased demand for labour, fewer workers are willing to work on Palestinian farms. An important aspect is the high **wage differential between Israeli and Palestinian farms**, with the former offering significantly higher wages. As discussed in KSQ 3, profit margins on Palestinian farms are low due to myriad factors, ranging from the use of suboptimal technology to the fragmented, and often non-existent, market infrastructure. As a result, they do not offer competitive wages to workers. An average farm in the West Bank offers NIS 96/day (approximately USD 29/day) to a skilled worker.<sup>39</sup> In the Gaza Strip, the daily wage is even less, at NIS 25/day (approximately USD 8/day). At

the same time, Israeli agriculture offers wages that are twice as high, while construction sites offer wages that can be six times or more higher. A similar situation is observed with the unskilled workers as well. Given the difficult situation, Palestinian farms and processing companies are unable to offer adequate occupational health and safety standards or good social packages to their workers.

**Palestinian labour in Israel has a dual impact on the demise of productive sectors and the rise of trade-related activities** in the Palestinian economy. First, higher wages have attracted workers to the Israeli market, distorting the wage structure in the local economy and leading to higher domestic wages and increasing costs for Palestinian producers. Second, the income of Palestinian workers in Israel has created substantial purchasing power that has outpaced domestic productive sectors. The additional income was channelled either into construction or into ever-increasing levels of imports, with the latter leading to unprecedented trade deficits (Shikaki, 2021).

<sup>39</sup> For an eight-hour working day, according to data from the Ministry of Labour published in 2021.



Farmers face significant **market and political risks** as well. Stakeholder discussions have cited market risks related to price fluctuations and heavy price drops resulting from the dumping of Israeli goods. The dumping has resulted in heavy post-production losses. Political risks, such as attacks by settlers and by the Israeli army, results in the destruction of crops and infrastructure, and losses of approximately USD 8 million each year. According to OCHA, during the period 2010–2015, approximately 2 500 farmers were affected by political risks, with a total loss of USD 47 million. Such risks are particularly high in Area C of the West Bank and in the Gaza Strip, where the estimated damage from 2014 to 2015 was USD 350 million. The Palestinian investment rate, which was in the range of 15 to 20 percent of GDP a decade ago (World Bank, 2017), continues to fall, underlining the weakness of the productive economy and the inability of public investment to lead and crowd-in private investment. If anything, private investment dominates the Palestinian economy, comprising mainly household investment in residential and commercial property. Consequently, **incentives for private investments are limited**, which, in turn, affects job opportunities. Within this context, understanding whether market and political risks can be covered by insurance providing rapid compensations are essential.

**Access to finance** is also an area of concern. Small and medium size enterprises (SMEs) represent 99 percent of enterprises in Occupied Palestinian Territory. Almost 45 percent of them are informal (in agriculture, this rate is even higher) and they employ 28 percent of the labour force in the private sector (MED MSMEs, 2023). In agriculture and agribusiness, almost 97 percent of micro, small and medium enterprises (MSMEs) are microenterprises. While the latest data are not available, it appears that the share of MSMEs operating in agribusiness that access agricultural loans is only approximately 6 percent.

Smallholders in need of loans often contend with find inadequate collateral and guarantee conditions imposed by financial institutions. Small businesses are usually seasonal and only become profitable over the long term. In contrast, most microfinance institutions impose short terms for repayment at regular intervals, with an average annual interest rates of 15–16 percent. Unable to rely on financial institutions, more than 80 percent of MSME founders inevitably cover start-up costs and running expenses through personal savings. Though efforts are under way to address gaps in these areas, limited financial literacy and lack of consumer protection still create financial exclusion, especially among the rural populace.

The current situation does not provide an **enabling environment** conducive to investing in the agrifood industry, from legal, regulatory, institutional and data availability perspectives. There is neither a legal classification for startups in the Occupied Palestinian Territory nor laws enacted to regulate startups and accelerators.<sup>40</sup> Moreover, the excessive bureaucracy aggravates the situation. This seriously affects opportunities for young people to develop into a vibrant business community – or to be attracted to working in the territory's agrifood systems. **Startup accelerator support programmes** are inadequate and often lack continuity, and combined with inappropriate or insufficient financial products, these problems force three out of every ten Palestinian startups in agriculture and food-processing to leave the field.

Higher wages offered in Israel have distorted the local economy and have gradually led to young people abandoning agriculture. Even in cases in which there are possibilities within the territory, young people tend to prefer a more modern, urban lifestyle. Young people are also disadvantaged by the **inadequate quality of high schools, vocational training and extension**

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<sup>40</sup> The draft law on startups and accelerators, which was introduced in 2018, has not been adopted. Even existing laws, such as the Law on Employment of People with Disability, are often not enforced.



**system curricula**, which lack information about opportunities, innovation and the potential for value addition in agriculture (based on interviews with the Union of Agriculture Work Committees (UWACS)). This has negatively affected their employability, with **youth unemployment** growing at an alarming rate in the Occupied Palestinian Territory. The share of **unemployed young people** rose from 35 percent in 2007 to 40 percent in 2019 and worsened further to 45 percent in 2020 (PCBS, 2021d). There is also significant gender disparity: youth unemployment rates of 62 percent for females compared to 33 percent for males (PCBS, 2022c). Stakeholder discussions have revealed that a significant portion of the young people enrolled in university after high school, but graduated after four years into a market that cannot accommodate them. Some graduates, mostly males, find work in Israel. The majority of female graduates may spend years searching for proper jobs and end up accepting temporary jobs that offer less than USD 350 per month. Others may marry and stop looking for employment, particularly in rural areas. The highest rates of unemployment among those aged 18–29 years were recorded among graduates, including those holding an intermediate diploma or higher (53 percent). Again there is a clear gender disparity: 39 percent unemployment for males and 66 percent for females (PCBS, 2022c).

Training of university graduates to take up other jobs, including work in agriculture, is nonexistent, and a lack of technical and business skills makes establishing their own enterprises difficult. Closing the curricular gaps requires updates to incorporate modern knowledge in agriculture, livestock, and aquaculture to foster innovations in farm operations. Potential interventions here would be effective **on-the-job training and mentorship programmes**.

The weaknesses in the food system are likely to lead to unbalanced social capital, limited



absorption capacity of agricultural jobs markets and, accordingly, limited private investment in agriculture and agroprocessing. This will lead to decreasing Palestinian purchasing power and potentially increase poverty and food insecurity. Adequate access to knowledge and training are crucial to catalyse the transformation of the entire food system in the Occupied Palestinian Territory for there to be any scope for tapping into the prospects offered by increasing urbanization, population growth, changing lifestyles and dietary preferences, and the new market opportunities these present. MSMEs could unlock numerous business opportunities in agriculture, livestock and fisheries, given the right enabling environment.

### Proposed levers

Competing with the Israeli job market is difficult. An alternative could be to empower family farms (that rely on family labour only) and organize them into market-oriented clusters connected to different value chains. According to the Palestinian Agribusiness Accelerator,<sup>41</sup> more than a thousand startups in the West Bank and the

<sup>41</sup> More details are available at [www.agbusinesshub.ps/en](http://www.agbusinesshub.ps/en).



Gaza Strip are ready to scale up their activities in the agriculture and environmental sectors. Accordingly, the proposed levers are aimed at addressing the limited absorption capacity of the agricultural job market; the unattractiveness of agrifood business to Palestinian entrepreneurs and young people, in particular; and the limited number of managerial positions among women in the agrifood industry and lack of job opportunities for people with disabilities.

***Lever 1: Policy dialogue towards a better enabling environment for inclusive entrepreneurship***

An enabling environment is a precondition for the establishment of a vibrant business community capable of generating profits and job opportunities. The right mix of effective policies and services is required to address the needs of the private entrepreneurs with a particular focus on marginalized groups, such as women, young people, Bedouins and people with disabilities.

Priority topics to address include:

- analysis and improvement of the legal and fiscal frameworks (e.g. adoption of the Startup Registration Law; VAT application along the agrifood chain);
- development of innovative insurance solutions to offer agriculture insurance against climate and market risks;
- establishment of a one-stop-shop for startups, offering issuance of licenses, permits, registration of property rights, etc.;
- promotion of financial inclusion for for micro, small and medium enterprises (MSME) and vulnerable families;
- connecting the Palestinian startups, incubators and accelerators to global networks (such as the World Food Forum) to widen their opportunities to access grant funding and attract more young people to agribusiness; and

- generation of accurate data for informed decision-making, starting with a comprehensive and an updated database of Palestinian entrepreneurs operating in agriculture, food processing and related areas, moving to a thorough understanding of the roles of disadvantaged groups within the food system.

A comprehensive framework of the Entrepreneurship Ecosystem Map has already been drawn up, including key actors and action areas (TTi, 2021).

***Lever 2: Investment in human capital to enable the employability of Palestinians in agriculture and agrifood industries***

Investment in human capital is necessary to ensure that high-quality skills and services are available to food system stakeholders. This proposed lever targets the gap in technical and managerial knowledge, and skills among different food system stakeholders.

Priority interventions include:

- reviewing the high school, vocational training, and extension system curricula, incorporating the knowledge required to farm sustainably in the modern context;
- establishing thematic networks connecting universities, young graduates in agriculture and food-processing technologies, research institutes, and industry associations to support professional development of young specialists, their employment, and facilitate information flows;
- introducing and scaling up programmes that subsidize access to professional business advisory services in all areas of expertise needed by MSMEs; and<sup>42</sup>
- introducing and expanding mentorship programmes for grant and loan recipients.

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<sup>42</sup> The EBRD Support to Small Business programme offers an example here ([www.ebrd.com/west-bank-and-gaza.html](http://www.ebrd.com/west-bank-and-gaza.html)).



## Transition to sustainable food systems

The food system in Occupied Palestinian is rich but complex and faces formidable challenges to its sustainability. The dominance of the Israeli occupation over the economy, trade, labour markets and natural resources is constraining development of the local food system. The lack of infrastructure, access to inputs, technologies, and capital has contributed to the underperformance of food supply chains. Consequently, the Palestinian economy has not been able to generate sufficient dynamism in recent decades to absorb a significantly growing labour force, including highly qualified young people. Poverty and unemployment, especially visible in the context of the Gaza Strip, erode the resilience of Palestinians and drive increasing food insecurity rates and malnutrition. Moreover, difficulties associated with the COVID-19 pandemic has further undermined livelihoods and aggravate the food security crisis as market access and obtaining inputs became ever more difficult.

The Palestinian economy will need to move away from its heavy reliance on non-tradable sectors (services, construction, the financial sector and public sector employment) and invest in tradable sectors, such as agriculture and manufacturing, to generate more local employment – and particularly more productive and decent jobs (UNCTAD, 2017). Being more dynamic and open to technological innovation, the agriculture and manufacturing sectors could offer income-generating opportunities throughout the value chain. By generating and distributing employment and income more equitably, agriculture could play a major role in promoting the inclusion of vulnerable groups, women and young people. Through its integration with the natural environment, agriculture is central to efforts to safeguard natural resources and address climate change challenges. It also forms the basis of agribusiness, which accounts for the largest share of GDP from sectors exposed to foreign





competition, along with 30 percent of total exports.

Food system transformation in pursuit of the Sustainable Development Goals as a whole is a debate that is well ahead in the territory. In recent years, the Government undertook a strategic thinking process that led to the formulation and endorsement of NFNSP and NIP – as a renewed policy and investment framework for Goal 2. The two strategic documents offer ways to ensure better coordination, higher effectiveness and efficiency in the use of public resources and tools for the policy and investment frameworks to converge and foster effective investments in the agrifood sector and food and nutrition security.

The formulation and endorsement of NFNSP and NIP are also evidence of a policy shift towards an Sustainable Development Goal-based multisectoral approach to planning and implementation of interventions to achieve



more inclusive, sustainable and resilient food systems, strengthening the links between agricultural development, social protection and economic empowerment. Specifically, the development of NIP represents a breakthrough opportunity for the Occupied Palestinian Territory and the first structured process to strategically articulate investments in the sector.

In this context, preparation of a food system assessment has offered an opportunity for further engagement to identify current and future sustainability challenges for the agrifood systems and ways to address them. The results and considerations described above are in close continuity with the existing **Sustainable Development Goal 2 Policy and Investment Framework**. The analyses and consultations have led to the identification of four key sustainability questions, which have a focus on agrifood value chain consolidation, greater efficiency in use of resources, employment and income generation, and equitable distribution of profits within value chains as the main levers for food systems transformation. The questions have further deepened the analysis and contributed towards charting a way forward as defined in the policy and investment framework.

These points were discussed in two dedicated in-country dialogues, held on 16 August and 21 September 2021 in Ramallah, Occupied Palestinian Territory, a gathering of national actors from the public and private sector and international experts. The analysis and related stakeholders' consultation recognized that the Occupied Palestinian Territory already has in place a comprehensive and coherent policy and investment framework to guide food system transformation. Specific actions should, however, be prioritized as summarized in the nine levers. The congruency and areas for prioritization that emerged during this process are represented in Table 6.



**Table 6. National Investment Plan priority programmes and the Food System Assessment identified levers**

| KSQs and their respective levers versus the six components of the National Investment (investment priorities)  | 1. Nutrition-specific investments | 2. Socioeconomic inclusion of poor and vulnerable people | 3. Sustainable and inclusive agrifood value chains development | 4. Sustainable natural resource management and climate change adaptation | 5. Improved food safety and consumer protection | 6. Promotion of territorial and co-responsibility approaches |
|--|-----------------------------------|--|--|--|---|--|
| <b>KSQ 1: What are the reasons behind the rise in food insecurity and malnutrition and a widening gap between the West Bank and the Gaza Strip?</b>  |                                   |  |  |  |   |  |
| Level 1: Nutrition-specific investments (treatment, prevention, raising awareness, data generation)<br><br>Level 2: Facilitate diversification and increase of production of nutrient-rich crops (mobilize investment and expertise, encourage partnerships)                     | X                                 | X  | X  |  | X   |  |
| <b>KSQ 2: Key Sustainability Question 2: What are the reasons behind the low adaptive capacities of the Palestinian food system to sustainably use and manage natural resources?</b>   |                                   |  |  |  |   |  |
| Level 1: Effective and widespread investments for climate change adaptation<br><br>Level 2: Increased availability of water for agriculture, including treated wastewater  |                                   |  |  | X  |   | X  |
| <b>KSQ 3: What are the reasons behind the underperformance of a number of agrifood value chains, which is threatening their long-term sustainability?</b>  |                                   |  |  |  |   |  |
| Level 1: Public-private dialogue on policy shifts towards value chain integration<br><br>Level 2: Professional advisory services to farmers, including consultancy on the use of digital technologies<br><br>Level 3: Public investment in aggregation and market infrastructure |                                   |  | X  |  | X   | X  |
| <b>KSQ 4: What are the reasons behind the limited employment and entrepreneurship opportunities in the agrifood sector in the Occupied Palestinian Territory, especially for women, young people and people with disabilities?</b>   |                                   |  |  |  |   |  |
| Level 1: Policy dialogue to gain a better enabling environment for inclusive entrepreneurship<br><br>Level 2: Investment in human capital to enable the employability of the Palestinians in agriculture and agrifood industries   |                                   | X  | X  |  |   | X  |



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