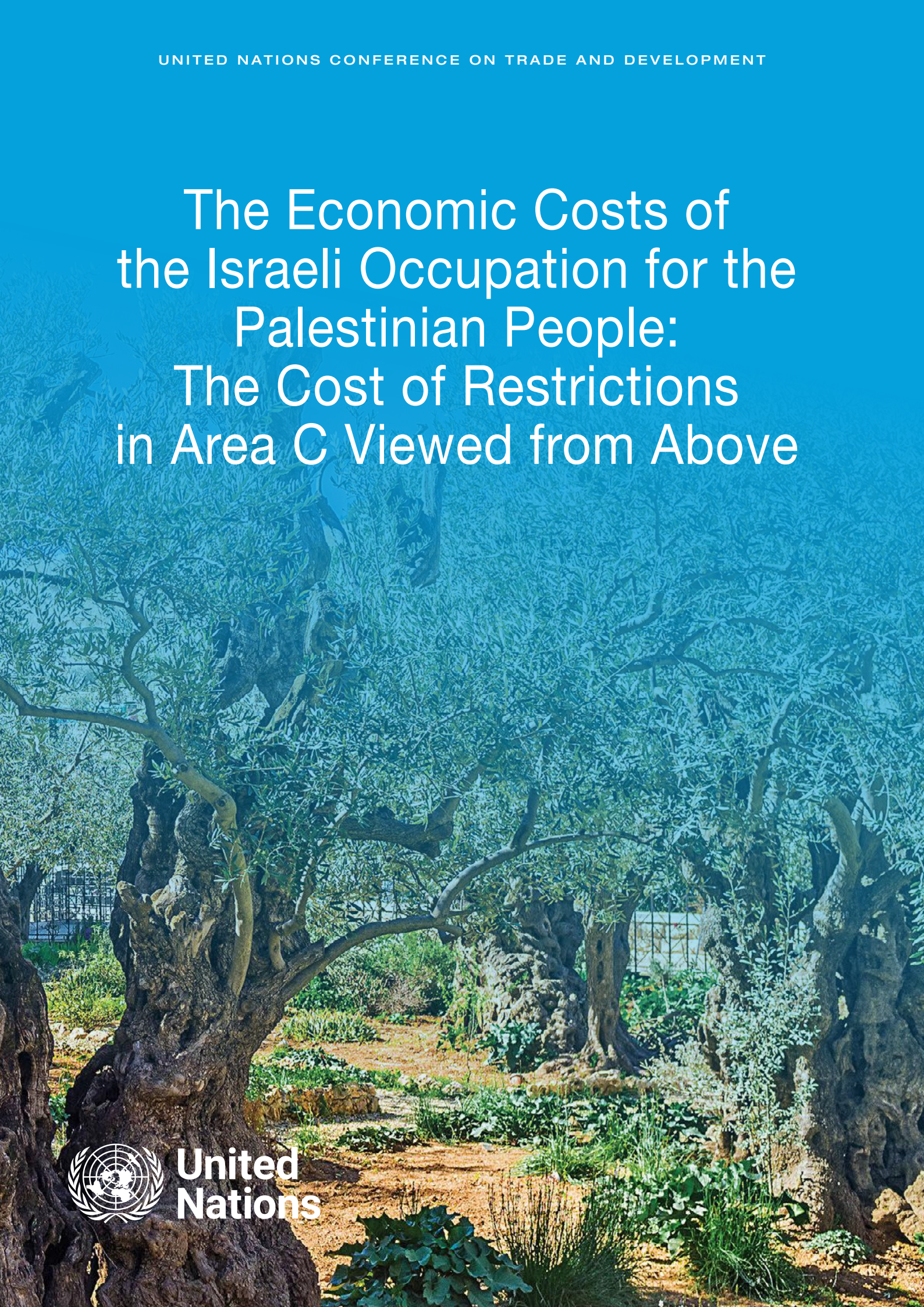
UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

The Economic Costs of the Israeli Occupation for the Palestinian People: The Cost of Restrictions in Area C Viewed from Above



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Corrigendum

1. **Page v, table 1**

The title of the table *should read*

Regression results: Log real annual night-time luminosity

2. **Page 20, table 1**

The title of the table *should read*

Regression results: Log real annual night-time luminosity

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Note

This study was prepared by the UNCTAD secretariat, drawing on research prepared by UNCTAD consultants Mr. Jean-Louis Arcand, Professor, International Economics, Graduate Institute of International and Development Studies, Geneva, and Ms. Pinyi Chen, Researcher, Development Economics, Graduate Institute of International and Development Studies, Geneva. The study seeks to stimulate debate on the research topic.

The term “dollars” ($) refers to United States dollars.

Contents

Figures and tables

Abbreviations

GDP	gross domestic product
NASA	National Aeronautics and Space Administration
NTL	night-time luminosity
OCHA	Office for the Coordination of Humanitarian Affairs

Executive summary

Throughout the West Bank, the occupying Power deploys a system of administrative and physical impediments that control the movements of the Palestinian people and limit their access to their productive resources. The resulting multilayered control system includes the division of the West Bank into different administrative areas, the application of a stringent permit regime, bureaucratic controls and hundreds of permanent and flying checkpoints, gates, earth mounds, roadblocks and trenches, in addition to the wall and settlements. The system has turned the West Bank into an archipelago of scattered, disconnected islands. Elements of the complex matrix of control put in place reinforce one another and underpin a de facto annexation of large swaths of the West Bank by the occupying Power. The control mechanism divides Areas A and B into 166 islands, with boundaries drawn so as to incorporate all Israeli settlements. Further, Area C, which accounts for about 60 per cent of the area of the West Bank, incorporates Israeli settlements and is fully under civil and security control by Israel, although it contains the most valuable natural resources in the West Bank.

With the onset of occupation in 1967, Israel implemented a long-term policy for the establishment of settlements in Area C of the occupied West Bank and in occupied East Jerusalem. To facilitate the expansion of settlements, Israel imposed strict restrictions on Palestinian economic activities in Area C, over and above those imposed in Areas A and B of the West Bank. The occupying Power includes 70 per cent of Area C within the boundaries of settlement regional councils, rendering the area off limits for Palestinian development. Further, Palestinian access to the remainder of Area C remains heavily restricted.

A variety of controls imposed under occupation constrain economic development in Areas A and B of the West Bank. These include the ban on the importation of certain technology and inputs under the dual-use list system and a myriad of mobility and other restrictions that inflate the cost of production and undermine the competitiveness of Palestinian producers in domestic and foreign markets.

This study estimates the economic cost of the additional restrictions on Palestinian economic activity in the remainder of Area C of the West Bank, that is, the 30 per cent of Area C available for Palestinian development. The annual cost of these restrictions is estimated at 25.3 per cent of West Bank gross domestic product (GDP) and the cumulative GDP loss in 2000–2020 is estimated at $50 billion ($45 billion in constant 2015 dollars), which is about three times the West Bank GDP and over 2.5 times the Palestinian GDP in 2020. The cost is estimated based on an innovative, well-established methodology that uses night-time luminosity (NTL) captured by satellite sensors over a span of time.

Further, the contribution to the economy of Israel of settlements in Area C and occupied East Jerusalem is estimated at an average of $30 billion per year (constant 2015 dollars). In other words, the cumulative contribution of settlements to the economy of Israel in 2000–2020 is estimated at $628 billion (constant 2015 dollars), or 2.7 times the annual Palestinian GDP in the same period.

Full Palestinian access to all of Area C is a sine qua non for the sustainable development of the Occupied Palestinian Territory and for the emergence of a viable, contiguous Palestinian State based on the two-State solution, in line with relevant United Nations resolutions.

I. Introduction and objectives

A. Mandate

The Israeli occupation has had profound socioeconomic impacts on the Palestinian people, and the heavy costs imposed on them have been accumulating over time. The General Assembly of the United Nations, in seven resolutions (69/20, 70/12, 71/20, 72/13, 73/18, 74/10 and 75/20), requested UNCTAD to report to it on the economic costs of the Israeli occupation for the Palestinian people. Analyses and estimations of these economic costs have been presented in various reports prepared in response to the resolutions.

In 2016, UNCTAD prepared a note transmitted by the Secretary-General of the United Nations to the General Assembly titled "Economic costs of the Israeli occupation for the Palestinian people". This was followed by several detailed reports submitted to the General Assembly.[1]

In these reports, UNCTAD emphasizes that occupation continues to impose substantial economic costs on the Palestinian people. It also highlights the urgent need for further evaluation of all aspects of the costs and a greater understanding of their impact on the welfare of the Palestinian people and the prospects for economic development in the Occupied Palestinian Territory. Within this context, UNCTAD stresses the need to establish, within the United Nations system, a systematic, evidence-based, comprehensive and sustainable framework for estimating the economic costs of occupation as an essential step in reversing its damages, achieving the Sustainable Development Goals in the Occupied Palestinian Territory and forging a just and lasting peace in the Middle East.

B. Objectives

This study focuses on the economic cost of the occupation of Area C, which accounts for about 60 per cent of the total area of the West Bank. Occupation also imposes significant restrictions on Palestinian economic activity in Areas A and B, yet imposes more restrictions in Area C. The study estimates the cost of these additional restrictions on economic activities in Area C, outside the boundaries of settlement regional councils. The economic cost is estimated by applying an innovative, well-established methodology that uses NTL, captured by satellite sensors over a span of time, to estimate levels of economic activity.

Occupation fragments the geography and economy of the West Bank, disfiguring Areas A, B and C and rendering them a jigsaw puzzle with pieces that no longer fit together. These areas, broken down by a complex multilayered control system, are deprived of much more than their unity. How can the losses entailed by restrictions and territorial fragmentation be assessed? What is the economic cost of depriving Palestinian producers of Area C, the only contiguous part of the West Bank? This study aims to answer both questions by estimating part of this cost.

The estimation covers the period 2000–2020. The year 2000 is the starting point for the estimation as it was intended to be the first year following the end of the five-year interim period stipulated in the Oslo Accords (a period from the date of signature of the Agreement on the Gaza Strip and the Jericho Area (4 May 1994), in which to reach a permanent settlement in accordance with Security Council resolutions 242 (1967) and 338 (1973)). However, over two decades later, the political and economic arrangements of this interim period continue to shape the reality of Palestinian life on the ground, and Israeli settlements, which are illegal under international law, continue to expand in Area C and East Jerusalem, inflicting considerable damage to the livelihood of the Palestinian people not only in Area C but throughout the entire Occupied Palestinian Territory. The inability of Palestinian producers to access the resources of Area C pre-empts positive spillover effects to the rest of the Palestinian economy through forward and backward linkages. Further, the loss of potential income

[1] Reports prepared by UNCTAD on the economic costs of the Israeli occupation for the Palestinian people include A/71/174 (2016), A/73/201 (2018), A/74/272 (2019), A/75/310 (2020) and A/76/309 (2021).

weakens the fiscal capacity of the Palestinian Government and thus undermines the development of the whole economy.

This study considers these economic costs from two perspectives. First, the potential Palestinian GDP that has been lost, but which could have been realized if Palestinian economic activities in Area C (excluding East Jerusalem and settlements) had been subjected to the same level of restrictions imposed by the occupying Power on economic activities in Areas A and B, is conservatively estimated. Second, Israeli GDP of produced in East Jerusalem and settlements elsewhere in the West Bank is estimated.

It should be stressed that the estimation in this study accounts for only a fraction of the cost for the Palestinian people emanating from the Israeli occupation of Area C in 2000–2020. The estimation does not include either the cost of the presence of settlements and the associated loss of land and natural resources nor the cost of the first layer of restrictions deployed in Areas A, B and C. The cost estimate pertains only to the additional restrictions on economic activity applied in Area C over and above those imposed in Areas A and B. It is an even smaller fraction of the significant total cost that occupation imposes on the whole of the Occupied Palestinian Territory, parts of which have been documented by UNCTAD and other international organizations.

C. Previous work by UNCTAD on the economic costs of the Israeli occupation

Further to the reports prepared for and submitted to the General Assembly mentioned above, UNCTAD has produced technical studies on the economic costs of the Israeli occupation for the Palestinian people. The series began with *The Economic Costs of the Israeli Occupation for the Palestinian People and their Human Right to Development: Legal Dimensions* and was followed by *The Economic Costs of the Israeli Occupation for the Palestinian People: The Unrealized Oil and Natural Gas Potential* and *The Economic Costs of the Israeli Occupation for the Palestinian People: Cumulative Fiscal Costs*.

In 2020, UNCTAD published a study titled *The Economic Costs of the Israeli Occupation for the Palestinian People: The Impoverishment of Gaza under Blockade*. The study looked at the critical situation in Gaza since the beginning of the Israeli blockade in 2007. It provided an estimate of the costs of the closures, restrictions and military operations for the Palestinian people in Gaza in the period 2007–2018, with a particular focus on the level and depth of poverty as an indicator of the socioeconomic conditions at the household level.

In 2021, UNCTAD published a study titled *The Economic Costs of the Israeli Occupation for the Palestinian People: Arrested Development and Poverty in the West Bank.* The study focused quantitative attention on the costs incurred due to the major shock to the West Bank, that is, the restrictions and closure policy implemented by the occupying Power following the outbreak of the second intifada. It complemented the study published in 2020, which focused on the cost of the blockade and military operations in Gaza as reflected in poverty indicators.

II. Overview

A. Context and background

In the West Bank, the occupying Power deploys a series of administrative and physical mechanisms that control the movement of Palestinian people and their trade flows and resources. These restrictions intensified upon the outbreak of the second intifada. The multilayered control system, which has persisted to varying degrees, includes the division of the West Bank into different administrative areas, the application of a stringent permit regime, bureaucratic controls and hundreds of permanent and flying checkpoints, gates, earth mounds, roadblocks and trenches, in addition to the wall and settlements. The result is the transformation of the West Bank into an archipelago of scattered, disconnected islands. Elements of the complex matrix of controls put in place by the occupying Power over the Palestinian economy reinforce one another and ultimately underpin the de facto annexation of large areas of the West Bank by the occupying Power.

The West Bank is divided into disconnected islands and the only contiguous part is Area C, which remains under the control of Israel and is largely inaccessible to Palestinian producers, although it has the most valuable natural resources, such as fertile land, minerals and stones, as well as tourist attractions and cosmetic products. The wall, along with settlements, deepens the physical, administrative and legal fragmentation of the Occupied Palestinian Territory (UNCTAD, 2021a).

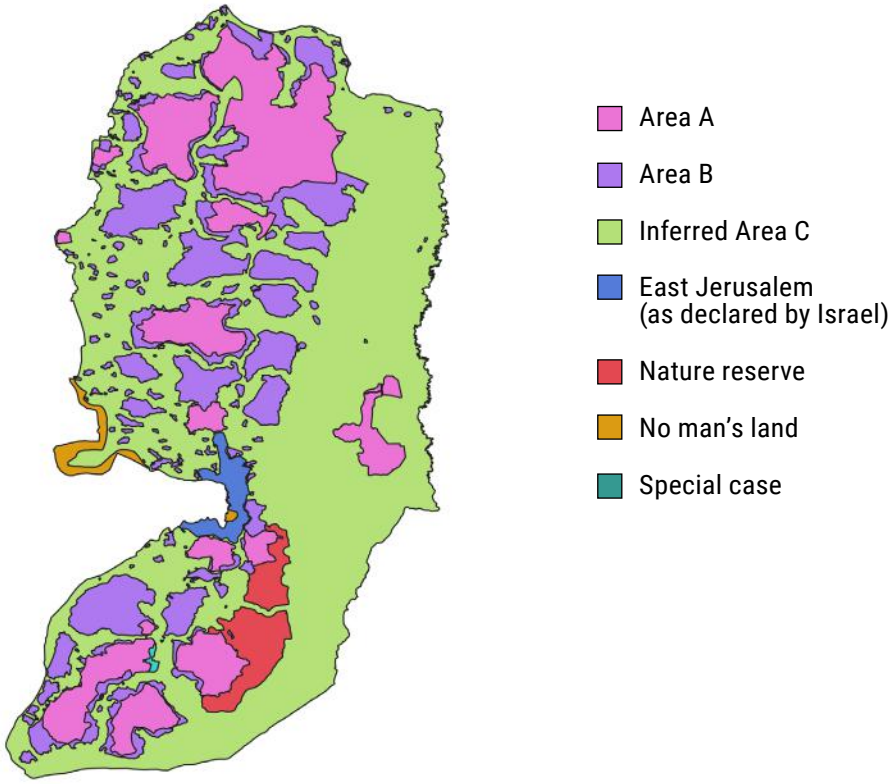
Prior to the signing of the Oslo Accords and the creation of the Palestinian National Authority in 1994, the Israeli Civil Administration managed civil affairs in the West Bank. The administration, reporting to the Coordinator of Government Activities in the Territories under the authority of the Ministry of Defense, was established in 1981 through a military order, according to which it would administer civil matters in the area "for the benefit and welfare of the population and in order to provide and run public services, while taking into account the need for proper administration and public order in the area" (B'Tselem, 2013). In accordance with the Oslo Accords, the West Bank was divided into three administrative areas, Areas A, B and C, each assigned a different status depending on their governance pending a final solution to their status, as follows: Area A, under civil and security administration by the Palestinian National Authority; Area B, under civil administration by the Palestinian National Authority and with joint security control by the Palestinian National Authority and Israel; and Area C (including Israeli settlements), under civil and security administration by Israel. The Oslo Accords stipulated that Area C would initially be under control by Israel before being transferred gradually to the Palestinian National Authority over the course of five years, a transfer that has not taken place.

The division of the West Bank into Areas A, B and C was mostly based on demographic characteristics, not geography (B'Tselem, 2013). Area A accounts for about 18 per cent of the West Bank and includes Palestinian cities and most of the Palestinian population of the West Bank. Area B, which accounts for approximately 22 per cent of the West Bank, is composed largely of rural areas. Area C accounts for around 60 per cent of the West Bank and its boundaries incorporate all Israeli settlements.

Areas A and B are subdivided into 166 isolated units of land without territorial contiguity and are surrounded by land in Area C. In contrast, Area C is fully contiguous and includes the majority of the natural resources of the West Bank (figure 1). Israel has prevented Palestinian development in about 60 per cent of Area C by allocating land to settlement regional councils, by designating large portions of land as state land, survey land, firing zones, nature reserves or national parks, and by imposing prohibitions in the area now trapped between the wall and the Green Line (corresponding to the June 1967 border), or seam zone (B'Tselem, 2013). The World Bank (2013) has studied the potential direct, sector-specific benefits, as well as indirect benefits, related to improvements in physical and institutional infrastructure, and conservatively concluded that if Palestinian businesses

and firms were permitted to operate in Area C, the potential additional output gains alone would amount to at least $2.2 billion per year.

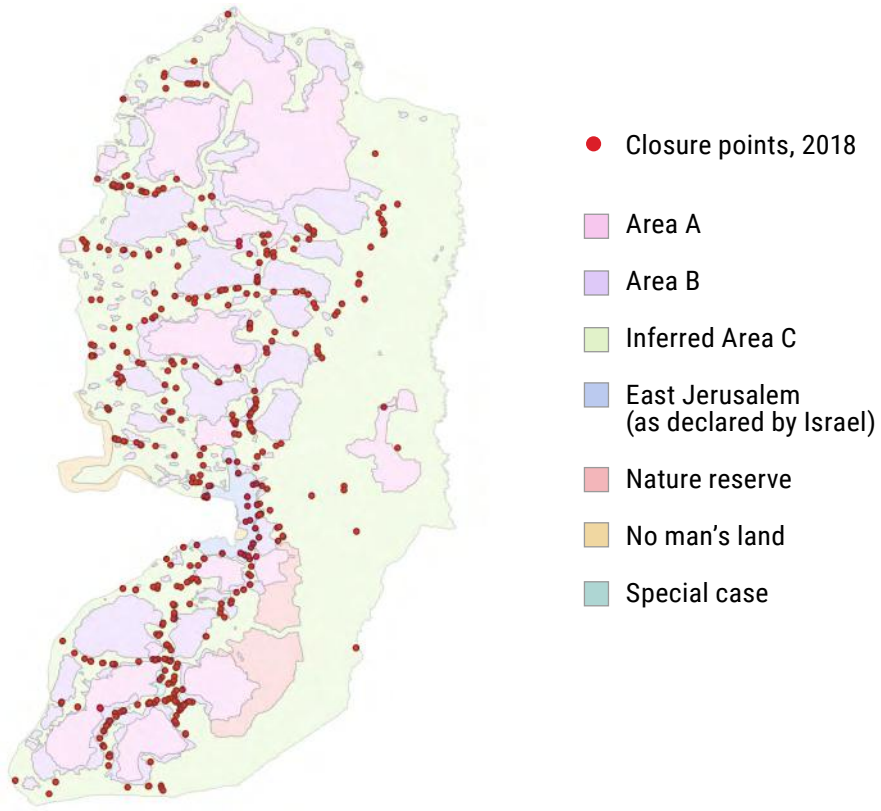
Figure 1
The West Bank: Administrative areas according to the Oslo Accords, 1994



Source: Office for the Coordination of Humanitarian Affairs (OCHA).
Note: The nature reserve is part of Area C.

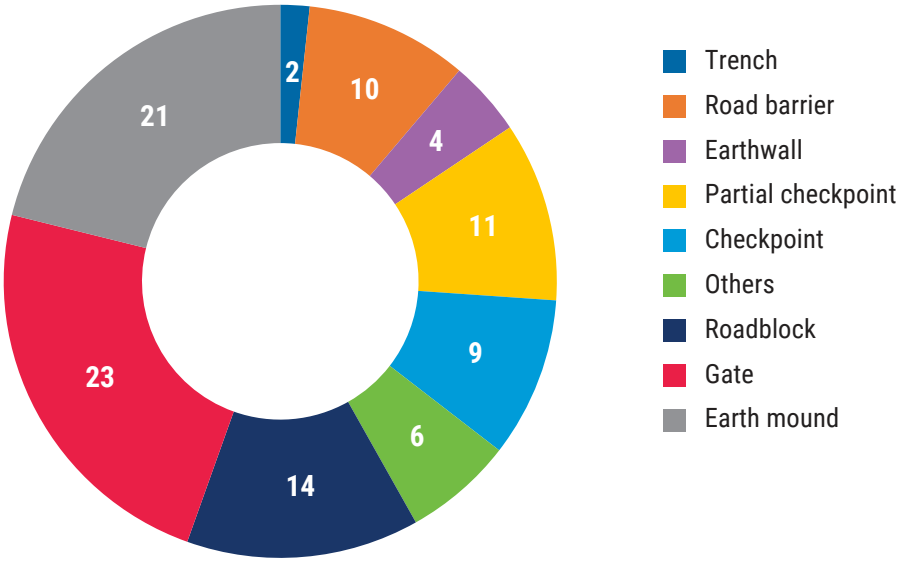
To reinforce the separation, the occupying Power has deployed hundreds of closure points and restrictions such as permanent and flying checkpoints, gates, earth mounds, roadblocks and trenches on the borders of Areas A and B with Area C (figures 2 and 3). According to Applied Research Institute–Jerusalem (2019), because of mobility restrictions, Palestinians lose 60 million work hours per year, equivalent to $274 million. Van der Weide et al. (2018) estimate that lifting road obstacles enough to improve market access by 10 per cent would increase local output in the West Bank by 0.6 per cent and, therefore, in the absence of such obstacles, GDP per capita in the West Bank would be 4.1–6.1 per cent higher than its observed level. Further, some easing of other restrictions by Israel would, by 2025, enlarge the Palestinian economy by 33 per cent. Calì and Miaari (2013) state that closures substantially reduce the probability of being employed, hourly wages and the number of days worked, while increasing the number of working hours per day, with much of this impact driven by reduced firm profitability and labour demand, and determine that checkpoints alone cost the West Bank economy a minimum of 6 per cent of GDP and that placing one checkpoint one minute away from a locality reduces the probability of being employed by 0.41 per cent, the hourly wage by 6.3 per cent and working days by 2.6 per cent.

Figure 2
The West Bank: Map of mobility restrictions, 2018



Source: OCHA.

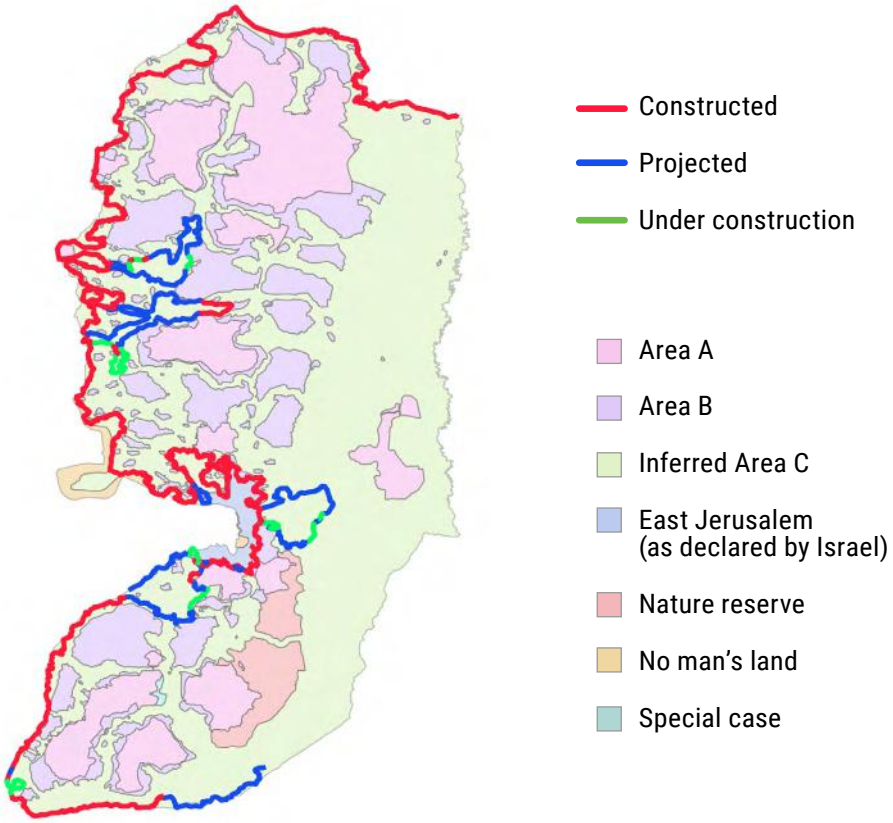
Figure 3
The West Bank: Mobility restrictions, 2018



Source: OCHA.

In 2002, the occupying Power started the construction of a wall. This wall encroaches deeply into Palestinian land; 85 per cent of the wall will be built on Palestinian land and not along the Green Line, the internationally recognized border, as can be seen from the fact that, at 712km, it will be over twice the length of the internationally recognized border (320km), rendering it, for all intents and purposes, an annexation wall. As a result, more than 530km^2, accounting for 9.5 per cent of the West Bank (including East Jerusalem), now lies in the seam zone, between the wall and the Green Line (figure 4).

Figure 4
The West Bank: Wall, 2017–2018



Source: OCHA.

The construction of a wall and its legal consequences were analysed by the International Court of Justice (2004) upon request by the General Assembly for an advisory opinion. The Court found Israel to be in violation of both humanitarian law and human rights law, for the construction of a wall and for the ways in which the wall inhibited economic and other activity. The takeover of land by Israel for settlements, for the wall and for related purposes, violates the law of belligerent occupation and human rights law. The losses to Palestinian industry and agriculture as a result of the takeover of land constitute a cost of occupation for the Palestinian people (UNCTAD, 2018).

The construction by Israel of a wall in the West Bank is on a route that protects settlements. Construction has caused major disruptions to economic activity and involved the use of significant tracts of land. It has particularly affected economic activity in the seam zone, that is, areas on the western side of the wall within the West Bank. The evident and extensive nature of the damage led

to the initiation by the General Assembly of a programme within the United Nations Secretariat to document it (UNCTAD, 2018).

In 1967, Israel launched a long-term policy for the establishment of settlements in the occupied West Bank. Settlements had also been built in the Gaza Strip, but this was terminated in 2005, as the occupying Power withdrew from Gaza. The United Nations, in several resolutions, including Security Council resolution 2334 (2016), has reaffirmed that the establishment of settlements constitutes a violation under international law and that the acquisition of territory by force is inadmissible, and has condemned all measures aimed at altering the demographic composition of the Occupied Palestinian Territory, including, among others, the transfer of settlers and the displacement of Palestinian civilians.

Settlements and outposts dispossess the Palestinian people of their inalienable right to development, entrench occupation and pre-empt a meaningful, sustainable two-State solution, leading to the establishment of a viable, contiguous, sovereign Palestinian State in the West Bank, including East Jerusalem, and Gaza, along the internationally recognized 1967 borders.

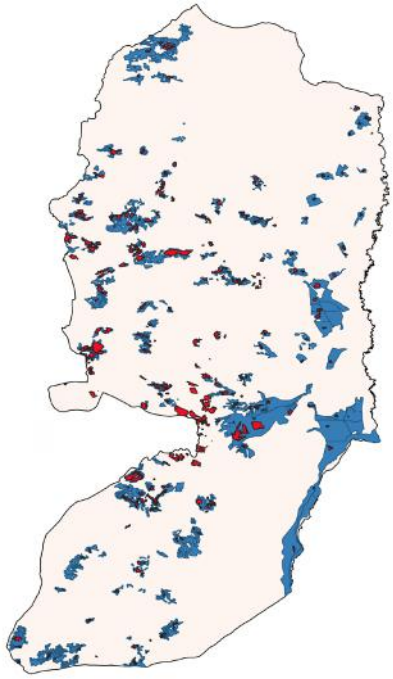
The location of settlements is strategically chosen to be in the vicinity of areas likely to become borderlines in the future. Settlements have been established in ways that effectively contain and isolate Palestinian communities. Some are spread along the Jordan River in order to separate the West Bank from Jordan, some are spread along the Green Line in order to separate Palestinians in the West Bank from Israel and some ring the most populated Palestinian towns, such as Nablus and East Jerusalem (Allegra and Maggor, 2022).

Evidence suggest that the occupying Power continues to deplete the natural resources, particularly water resources, in the occupied territory to its advantage and to the detriment of the Palestinian people. The water policy of Israel furthers economic and political advantages and the expansion of settlements, while depriving the Palestinian economy and agriculture of critical water resources. Over the years, the occupying Power has spent billions of dollars in building modern infrastructure to encourage the expansion of settlements, including roads, water and sewage systems, communications and power systems, security systems and educational and health-care facilities. In recent years, the occupying Power has promoted plans to invest significant additional funds to pave hundreds of kilometres of bypass roads in the West Bank, which encourage the expansion of settler populations through the provision of means for exclusive, safer and faster travel between Israel and settlements (Peace Now, 2021).

The Government of Israel provides generous incentives to settlers and entrepreneurs, notably underpriced land taken from Palestinians, reduced land fees for investors, tax benefits, housing benefits, business subsidies, industrial zone subsidies and employment subsidies (UNCTAD, 2021b). In some areas, corporations pay one third of the tax rate paid in Israel. Generous support is provided for farming cooperatives to accommodate new farmers; in some areas, farmers are exempt from the levy on employing migrant workers, and new farmers receive financial subsidies of up to $307,000 and up to $25,000 per herd for open field livestock grazing (B'Tselem, 2021). In addition, the Government of Israel encourages teachers in key disciplines to move to designated national priority areas by offering them a wage increase of up to 70 per cent for several years. Such incentives and benefits have resulted in the significant expansion of industrial zones and of investment in agricultural production. By 2019, there were 11 Israeli industrial complexes in Area C. The ongoing expansion of settlements has been increasing in recent years, with significant incentives to facilitate industrial and agricultural ventures and encourage hundreds of thousands of Israeli citizens to move to subsidized settlements in the West Bank, where they have standards of living higher than those prevailing in Israel (B'Tselem, 2021). By early 2021, Israel had established more than 280 settlements in the West Bank, including East Jerusalem (figures 5 and 6). The settler population increased from 198,315 in 2000 to 311,136 in 2010 and over 650,000 in early 2021 (B'tselem, 2021).

Figure 5

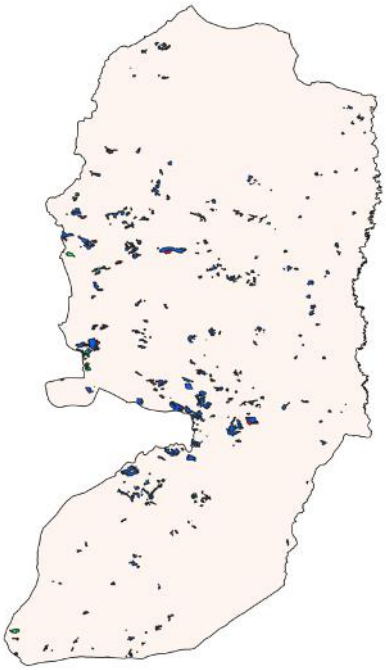
The West Bank: Settlements built-up areas, 2020, and municipal boundaries, 2014



Source: OCHA.
Note: Red, built-up area; blue, municipal boundary.

Figure 6

The West Bank: Settlements expansion and built-up areas, 2011, 2018 and 2020



Source: OCHA.
Note: Blue, 2011; green, 2018; red, 2020.

In addition to settlements, the occupying Power allows, tolerates and encourages the establishment of outposts. In the first half of 2021, there were 150 outposts, mostly devoted to agricultural and animal production. Outposts are illegal even under Israeli laws, yet they receive public and State support through various direct and indirect means. They are often integrated into the infrastructure networks serving settlements, which enables them to receive water and electricity, among other vital services. Further, settlers in outposts have access to mortgages, roads and, in some cases, schools and other facilities. Farm outposts are strategically deployed and extensively backed despite their illegality. Such outposts and their herds use a much larger area of pastureland, reportedly leading to the takeover of nearly 7 per cent of Area C (United Nations, 2022).

Outposts establish "facts on the ground", as settlers take over Palestinian agricultural and pastural land, with the reasonable belief that they will be allowed to stay. Once outposts have been established, it is common for the occupying Power to retroactively regularize and integrate them into official settlements. For example, in 2020, plans were advanced to retroactively authorize four outposts as neighbourhoods of existing settlements (Peace Now, 2021).

Further, the occupying Power continues to declare large parts of Area C as nature reserves, including private Palestinian-owned land. Once land has been designated as a nature reserve, landowners cannot cultivate their fields without pre-approval from the Israeli authorities. By mid-2022, the occupying Power had declared 48 nature reserves, covering about 12 per cent of Area C (United Nations, 2022).

Settlements constrain the space available for Palestinian socioeconomic development. They impoverish the Palestinian people by dispossessing them of their land and natural resources, and additional Palestinian land is confiscated for the infrastructure and road networks that serve the settlements. Much harm stems from an array of additional measures taken to facilitate settlements and the interests of settlers, including the demolition of Palestinian assets, structures and trees to maximize the land available for settlements, which leads to environmental degradation. Settlements disfigure the West Bank geography and fragment Palestinian markets and communities. They erode hope for meaningful economic development, which is inconceivable without land and natural resources.

Settler violence against Palestinians is yet another mechanism whereby access by Palestinian people to their land, water and natural resources in Area C is undermined. Palestinians in Area C are subjected to settler violence, including the destruction of residential and humanitarian structures, physical assault, intimidation, the use of live ammunition, the uprooting and destruction of trees and crops and the vandalization of farming equipment and private property. In 2021, OCHA documented the highest level of settler violence since 2005, which undermined the ability of Palestinians to carry out essential agricultural work and other economic activities.

Palestinian farmers whose lands lie near settlements do not have complete, continuous and safe access to tend fields or harvest olives, which, for example, undermines yield and olive harvest (B'Tselem, 2022). Restrictions on Palestinian access to land and resources, particularly in Area C, have led to shrinking space for Palestinian economic development. The violence and restrictions imposed on Palestinians impact every aspect of Palestinian life, from the right to housing to the right to economic development, education and access to health services. In some instances, settlements discharge sewage water onto Palestinian land, causing pollution and damage to water and productive trees.

In Area C and occupied East Jerusalem, it is extremely difficult for Palestinians to obtain permits to build structures for residences, economic activities or infrastructure such as roads and water and power networks. In 2010–2020, over 96 per cent of all requests submitted by Palestinians for permits to build for purposes of infrastructure, housing, industry or agriculture were rejected (Save the Children, 2021). In 2019–2020, the rejection rate increased to over 99 per cent. Although building permits are nearly impossible to obtain, if a structure is built without a permit, as is often

the case, it is demolished by the occupying Power. Since the onset of occupation in 1967, the occupying Power has demolished 28,000 Palestinian homes and destroyed vital infrastructure, including water and sanitation facilities (Save the Children, 2021).

Owners are frequently forced to demolish their own property, at their own expense, to avoid serving time in jail and paying significant financial penalties. In 2021, self-demolition in East Jerusalem increased significantly. Demolition is a traumatic, disempowering experience that uproots communities and scars Palestinian people, particularly children.

In East Jerusalem, the occupying Power has expropriated 57 per cent of land for settlements and public infrastructure, and Palestinians are denied access to another 30 per cent of the city. Palestinians are allowed to build on only 13 per cent of the area, much of which is already in use (European Union, 2022). Such discriminatory zoning restrictions force Palestinians to live in overcrowded enclaves, with obvious consequences for health and well-being.

Restrictions, demolition and settler violence create intolerable living conditions that aggravate a coercive environment that pressures Palestinians to leave Area C and creates space for the further expansion of settlements. This creates enduring facts on the ground, including through de facto annexation by settlements, which pre-empt the achievement of the two-State solution and the emergence of a viable, contiguous Palestinian State as envisioned by the international community, in line with several resolutions of the United Nations and the Security Council.

Settlements create a structured system for dispossession, determine the land and roads Palestinians cannot use, the route of the wall and the location of checkpoints, and otherwise restrict the movement of Palestinian people, including workers, and goods. Palestinians and settlers do not have equal rights in the territory controlled by the occupying Power. Glaring differences in rights include unequal access to factors of production, land, roads, infrastructure, water resources and basic services (United Nations, 2020).

Further, since the 1970s, the occupying Power has designated about 30 per cent of Area C as military firing zones for the purpose of military training. This has significantly undermined Palestinian communities in the vicinity and reduced their access to resources and their ability to build necessary infrastructure. The resulting exacerbation of the coercive environment places these communities under extreme pressure to move (United Nations, 2021).

The United Nations (2022), in the report of the Secretary-General titled “Israeli settlements in the Occupied Palestinian Territory, including East Jerusalem, and the Occupied Syrian Golan”, recommends that the occupying Power should:

> (a) Immediately and completely cease and reverse all settlement activities in the Occupied Palestinian Territory, including East Jerusalem, in compliance with international law, including relevant United Nations resolutions, such as Security Council resolution 2334 (2016);
>
> (b) Immediately halt demolitions and forced evictions and cease any activity that would further contribute to a coercive environment and/or lead to a risk of possible forcible transfer;
>
> (c) Promptly review operations and policies of Israeli security forces to ensure consistency with the obligations of Israel as occupying Power to protect the Palestinian population;
>
> (d) Ensure that all incidents of violence by settlers and Israeli security forces against Palestinians and damage to their property, are promptly, effectively, thoroughly and transparently investigated; those perpetrators are prosecuted and, if convicted, punished with appropriate sanctions, and that victims are provided with effective remedies, including adequate compensation, in accordance with international standards.

B. *Satellite night-time luminosity data in economics: An emerging standard tool*

NTL is a measure of visible night-time lights on Earth captured by satellites from outer space. NTL has considerable potential for use in economic analysis because it reflects human economic activities. Consequently, NTL data are increasingly being used to estimate GDP in countries in which economic data are poor and in areas and subregions in which such data do not exist.

In this study, a measure of NTL in a specific area on Earth is analysed. The measure is obtained by observing average pixel-level NTL values within the area (satellite NTL images consist of pixels, each storing an NTL value and assigned a geographical location, organized in rows and columns; the spatial resolution of the sensor determines the size of a given pixel). The unit of measurement is radiance, defined as nanowatts per square cm per steradian ($nW/cm^{-2}sr^{-1}$). For a particular area, NTL is usually presented as an average over a given period, whether a month, a quarter or a year. The source of NTL data used in the present analysis is the National Aeronautics and Space Administration (NASA) of the United States of America (see chapter III).

The use of NTL as a proxy for economic activity was pioneered by Henderson, Storeygard and Weil (2012). In the 10 years since this study has been published, it has been cited in more than 880 academic papers. The authors developed a statistical framework for using satellite night-time lights data to enhance official income measures, especially in countries with poor national income accounts. In a set of 30 low-income and middle-income countries with low-quality national accounts data, the authors used NTL to estimate income growth in 1992–2005 and found that the estimates differed from the conventionally produced annual real GDP growth rates by up to 3.2 per cent. The authors also established that, among low-income and middle-income countries, the elasticity of growth of lights emanating into space with respect to income growth was close to one.

The original study has been followed by several others aimed at quantifying the relationship between NTL and economic activity, as follows:

Alesina, Michalopoulos and Papaioannou (2016) use NTL data to construct a measure of ethnic inequality in a large sample of countries, to study the origins and consequences of ethnicity-based economic inequality across countries.

Pinkovskiy and Sala-i-Martin (2016) compare the relative quality of per capita GDP data and consumption data obtained by survey means with NTL data, showing the significant difference between the two income measures and, using NTL data, compute the optimal linear combination of GDP per capita and household survey means to proxy true income.

Storeygard (2016) uses NTL data to construct a 17-year annual panel of city-level measures of economic activity for 289 cities in 15 countries, to investigate the role played by transportation costs in determining the level of economic activity in cities in sub-Saharan Africa.

Henderson et al. (2018) explore the role of natural characteristics in determining the location of economic activity proxied by NTL, focusing on the distribution of economic activity within countries.

Hu and Yao (2019), among several International Monetary Fund and World Bank studies using NTL data as proxies for economic activity, find that NTL data are the most useful for measuring income levels in low-income and middle-income countries in which traditional GDP per capita data usually lack precision. In other studies, NTL data have been used to forecast GDP growth rates using the elasticity of GDP with respect to NTL (measuring the percentage change in NTL when GDP changes by 1 percentage point, or vice versa).

Levin et al. (2020) stress the primary advantage of NTL data over official statistics, since the former permit the estimation of GDP at a disaggregated level related to geographical units, especially where GDP data do not exist or are of poor quality.

Beyer, Hu and Yao (2022) develop a framework to estimate the elasticity between night-time lights and quarterly economic activity, which can be used to translate changes in night-time lights into changes in economic activity.

The possibilities provided by the use of NTL data are of utmost relevance to the Occupied Palestinian Territory, because they allow for the estimation of separate, disaggregated levels of Palestinian economic activity in Area C, East Jerusalem and Israeli settlements elsewhere in the occupied West Bank. Further, the use of NTL data allows for the estimation of the disaggregated size of the Israeli GDP produced in settlements in the West Bank. This study takes advantage of these possibilities to estimate levels of economic activity in disaggregated geographical units in Area C.

III. Data: Definition and measurement

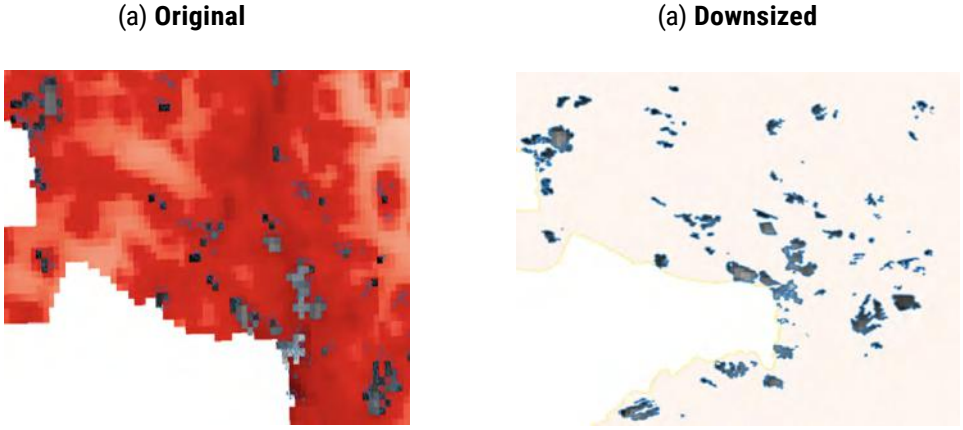
The description and analysis presented in this study rely on data from different sources and types. Sources and related explanations are presented in this chapter.

Geographic information system data and maps. OCHA collects regular data in the Occupied Palestinian Territory on access and closures in the West Bank. All geographical data used in the study were obtained from the OCHA Occupied Palestinian Territory office in the form of shapefiles, including those in figures 1–6, and data on settlements were cross-referenced with the B'Tselem database on settlements.

NTL data. Data were obtained from the NASA Black Marble VNP46/VJ146 product suite, which uses the state-of-the-art application of data from the day/night band detectors of the visible infrared imaging radiometer suite. Annual NTL data from Black Marble are available from January 2012 to the present, have a 15 arc-second spatial resolution and are cloud-free, and have been corrected for atmospheric, terrain, lunar and straylight effects, as well as vegetation and snow cover (NASA, 2022). The annual composite has 28 layers, containing information on NTL measured at different zenith angles (near-nadir, off-nadir and all angles) and under different snow statuses (covered and free), as well as information on, among other aspects, the number of observations, quality, land water mask, platform, latitude and longitude.

The data used in this study were those captured from all zenith angles during snow-free periods, to understand NTL patterns within and outside of Israeli settlements. NTL data cannot be directly clipped to settlements because their pixel size is too large compared with many of the settlements. Therefore, the original pixels were downsized to 10m x 10m instead of 446m x 446m, with downsizing conducted using the nearest neighbour method, in order for the downsized pixels to fit the settlement boundaries (figure 7).

Figure 7
Night-time luminosity: Examples of original and downsized pixels



Source: UNCTAD.
Notes: Red cells are NTL pixels with a 15 arc-second spatial resolution; blue cells are settlement boundaries. Black pixels are NTL pixels clipped to each settlement (using the Quantum Geographic Information System and the clip raster by mask layer tool), which overlap poorly with settlement areas (panel (a)). The original pixels have therefore been downsized (panel (b)).

The use of NTL data in the analyses presented in this study is advantageous because pixel-level availability makes it possible to aggregate or downscale the data to proxy economic development in various spatial units, such as settlements, for which comprehensive conventional GDP data sets are not available.

IV. Night-time luminosity trends in the West Bank

The spatial distribution of and temporal trends in NTL in various geographical units in the West Bank in 2012–2020 are examined in this chapter.

With regard to spatial distribution in the West Bank, NTL values tend to be higher in the western part, especially around Jerusalem, than in the eastern part (figure 8).

Figure 8

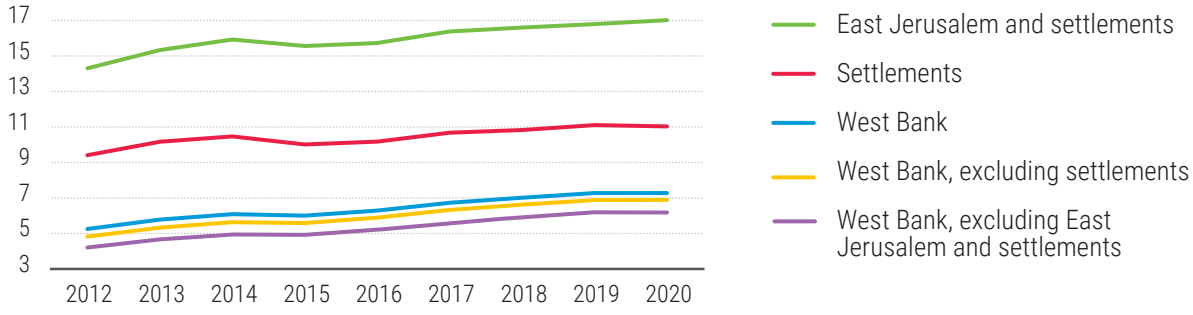
The West Bank: Spatial distribution of night-time luminosity, 2017
(10 x nW/cm^{-2}sr^{-1})

Source: UNCTAD calculations, based on data from NASA, 2022, and other sources.

In 2012–2020, the average annual NTL exhibited a noticeable upward trend across the West Bank but was higher in settlements compared with the rest of the West Bank (figure 9). The average annual NTL in occupied East Jerusalem and in settlements elsewhere in the West Bank was about 16 nW/cm^{-2}sr^{1} and trended upward from 2012 to 2020. If East Jerusalem is excluded, the average annual NTL in settlements was slightly lower, but still relatively high, at above 10.4 nW/cm^{-2}sr^{1}. Further, NTL in settlements alone was about twice that of the entire West Bank (excluding East Jerusalem), in which the average annual NTL was about 5.2 nW/cm^{-2}sr^{1}. Such significant differences are indicative of substantial economic disparities between Israeli settlements and Palestinian-controlled areas in the West Bank.

Figure 9

The West Bank: Average annual night-time luminosity in different geographical parts (nW/cm^{-2}sr^{1})



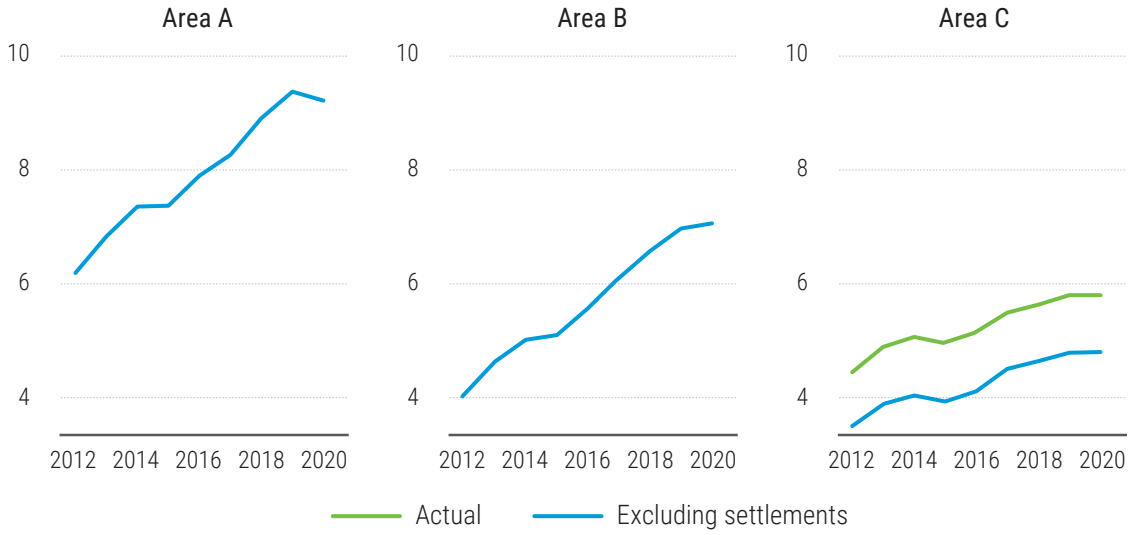
Source: UNCTAD calculations, based on data from NASA, 2022, and other sources.

Further, the data indicate significant disparities across Areas A, B and C in terms of growth and level of NTL in 2012–2020 (figure 10). In the period, in all of Area C, including settlements, NTL increased from 4.8 to 5.9 nW/cm^{-2}sr^{-1}. This is a more significant level of NTL growth compared with that in Area C excluding settlements. In the latter, the average annual NTL increased from 3.5 to 4.5 nW/cm^{-2}sr^{-1}.

Figure 10

Average annual night-time luminosity in Areas A, B and C, actual and excluding settlements

(nW/cm^{-2}sr^{-1})



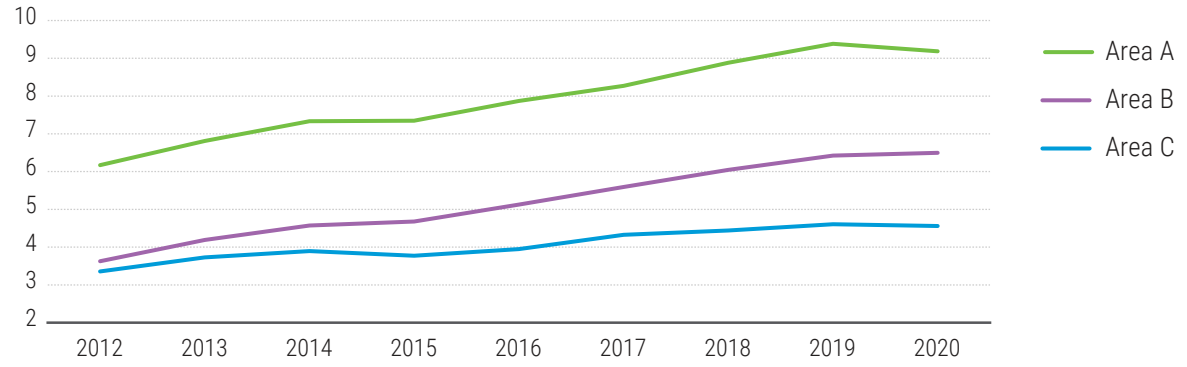
Source: UNCTAD calculations, based on data from NASA, 2022, and other sources.
Note: The shapes of the lines for Areas A and B nearly overlap because there are no settlements in these areas.

NTL increased in 2012–2020 in all three areas of the West Bank, but Area C registered the lowest level of NTL growth compared with Areas A and B, and Area A registered the highest average annual NTL. The NTL gap between Area C and Areas A and B is even greater if NTL in settlements elsewhere in the West Bank is excluded from NTL in Area C. As shown in figure 11, in 2012–2020, the average annual NTL in Area C, excluding East Jerusalem and settlements, was 46 per cent lower than that in Areas A and B.

Figure 11

Average annual night-time luminosity in Areas A, B and C excluding East Jerusalem and settlements

(nW/cm^{-2}sr^{-1})



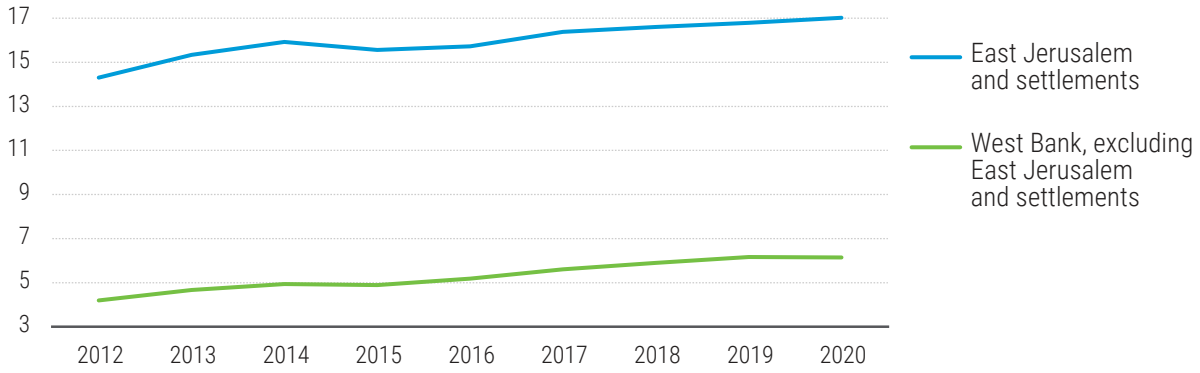
Source: UNCTAD calculations, based on data from NASA, 2022, and other sources.

There is a significant difference between the average annual NTL in the areas under Palestinian control (composed of the occupied West Bank, excluding occupied East Jerusalem and settlements elsewhere in the West Bank) and the average annual NTL in the area under the complete control of Israel (Area C, occupied East Jerusalem and Israeli settlements). As shown in figure 12, that difference is vast, implying a significant disparity in the levels of economic activity in occupied East Jerusalem and in settlements elsewhere in the occupied West Bank compared with areas under Palestinian control. In 2000–2020, the average annual NTL in the areas of the occupied West Bank that were under partial control of the Palestinian National Authority increased from 4.2 to 6.1 nW/cm^{-2}sr^{-1}. Further, in the area controlled by the occupying Power, the average annual NTL increased from 14.1 to 17 nW/cm^{-2}sr^{-1}. The average annual NTL in the areas of the occupied West Bank under Palestinian control was in the range of one third of that in areas under the complete control of Israel. This indicates that economic activity in areas under the control of the Palestinian National Authority is much weaker compared with economic activity in areas controlled by the occupying Power.

Figure 12

The West Bank, excluding East Jerusalem and settlements: Average annual night-time luminosity compared with that in East Jerusalem and settlements

(nW/cm^{-2}sr^{-1})



Source: UNCTAD calculations, based on data from NASA, 2022, and other sources.

V. Costs of occupation and size of the economy of settlements in Area C and East Jerusalem

Area C accounts for about 60 per cent of the total area of the occupied West Bank. Area C is the only contiguous part of the West Bank and has the most fertile land and the most valuable natural resources. Further, it has the geographical space needed for Palestinian demographic expansion and economic development. The boundaries of Area C now incorporate Israeli settlements, which have been reinforced by closure points and the wall. The ongoing expansion of settlements dispossesses Palestinians of large swaths of Area C land and inflicts significant human and economic costs on the Palestinian people.

In this section, part of this economic cost of the occupation of Area C is estimated in terms of the potential Palestinian GDP that has not been realized since the end of the interim period (1994–1999) as a result of the inability to develop the 30 per cent of Area C located outside the boundaries of settlement regional councils, and excluding East Jerusalem, at the same rate as that observed in Areas A and B.

It is crucial to note that the calculated cost does not assume the dismantling of settlements, nor does it assume full Palestinian access to Area C nor the lifting of any restrictions imposed on Areas A and B. Instead, the estimated cost only assumes that the level of restrictions on Palestinian development in the 30 per cent of Area C is the same as the level of restrictions applied by Israel in Areas A and B. Therefore, an estimate is made only of the cost of the additional restrictions, which are imposed on Palestinian economic activity in the 30 per cent of Area C available for Palestinian development. These restrictions are in addition to those significant restrictions imposed in Areas and B. Therefore, the estimated cost accounts for just a fraction of the cost of the occupation of Area C and East Jerusalem, which is itself a fraction of the total economic cost imposed by occupation on the Palestinian people in the West Bank and Gaza.

This partial estimate is followed by an estimation of the cumulative contribution of settlements to the economy of Israel, the occupying Power, in 2000–2020, as a direct result of occupation and control of the resources of Area C and East Jerusalem.

A. Some aspects of the economic cost of the occupation in Area C

The analysis in this section seeks to answer the following question: What if, in 2000, 30 per cent of Area C of the West Bank had been available for Palestinian expansion and development while being subjected to the same level of economic restrictions imposed in Areas A and B (which are significant but not as stringent as those applied in Area C)?

Indicators of the economic cost of the occupation in Area C are provided in this section through an estimate of the potential GDP not realized due to the additional restrictions imposed in part of Area C following the end of the interim period in 1999, when a permanent settlement was expected to bring to an end the occupation of the West Bank and Gaza, including Area C and East Jerusalem. Official GDP statistics for the Occupied Palestinian Territory compiled by the Palestinian Central Bureau of Statistics are at the national level and are disaggregated only to the levels of the West Bank and Gaza. However, as noted, this deficiency can be overcome by using NTL data to estimate economic activity at disaggregated levels of smaller geographical units.

On average, in West Bank administrative areas in 2012–2020, NTL in Area C was 46 per cent lower than NTL in Areas A and B (table 1).

Table 1

Regression results: Log real monthly annual night-time luminosity

Independent variable log NTL	
Areas A and B are the baseline	
Area C dummy	-0.455 (0.0664)***
Constant	4.150 (0.0470)***
Observations	18
R-squared	0.745

Source: UNCTAD calculations.
* p < 0.05
** p < 0.01
*** p < 0.001

The cost of the additional restrictions imposed in Area C is estimated by using NTL as a proxy for economic activity and calculating the elasticity of GDP with respect to NTL. For this purpose, a counterfactual scenario has been developed based on the conservative assumption that if Area C had been subjected to the same level of restrictions as those imposed in Areas A and B, the pace of Palestinian economic development in Area C would have been on a par with the level of development in Areas A and B. The assumption implies that average NTL (per unit of area) in Area C would be equal to the mean average NTL in Area A and average NTL in Area B in 2012–2020. Areas A and B are the best comparator for establishing the Palestinian economic activity level in Area C that could have been realized if the Palestinian people had been allowed to develop Area C under the same level of restrictions imposed in Areas A and B. Actual NTL data for Areas A and B are driven by economic activity and population density, given that Palestinians are allowed to develop these areas to some degree, while Area C is largely off limits.

Accordingly, the mean average NTL in Area A and average NTL in Area B is applied to Area C, with the assumption that the actual average NTL in Area C, excluding East Jerusalem and settlements, is derived entirely from Palestinian activities. The fact that actual NTL includes activities by settlers and other Israeli citizens suggests that the assumption will give a downward bias to the estimated cost. Such a bias reinforces the conservative nature of the estimation of the economic loss resulting from restrictions on Palestinian development in Area C. The weighted average mean NTL in Areas A, B and C is calculated using the relative sizes of Areas A, B and C as weights. The actual average NTL in the West Bank is compared with the weighted average NTL implied by the counterfactual scenario. The gap between the averages is an indicator of unrealized GDP.

Following the methodology developed by Henderson, Storeygard and Weil (2012), the elasticity of GDP with respect to NTL is utilized to estimate the unrealized potential GDP gains under the counterfactual scenario. Using quarterly GDP and NTL data, elasticity in the occupied West Bank is estimated at 0.903, that is, a 1 per cent increase in average NTL is associated with a 0.903 per cent increase in GDP (figure 13). The elasticity is calculated using the following equation:

$$X = Y(\beta) + C$$

Where X represents quarterly NTL; Y represents quarterly GDP; and β represents elasticity.

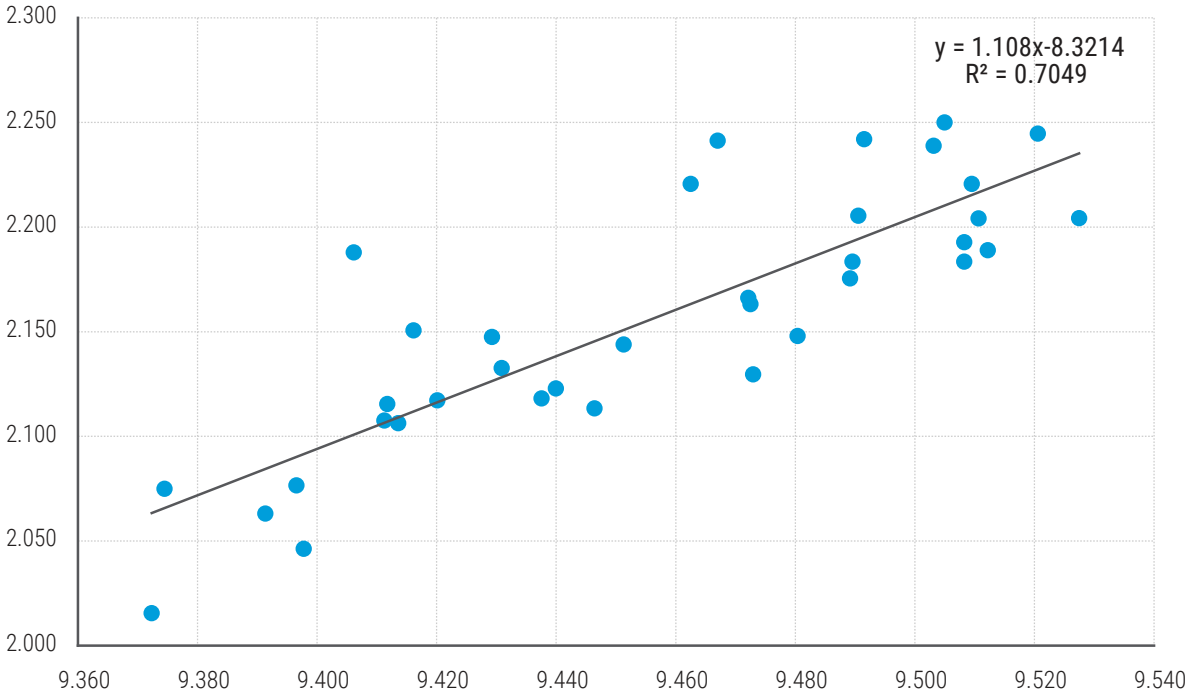
Rearranging the equation and taking the log on both sides gives the following:

$$\log(Y) = 1/\beta * \log(X) + \log(C)$$

Based on the equation, the elasticity of GDP with respect to NTL is equal to 1/β, that is, 1/1.108 = 0.903.

Figure 13

The West Bank: Elasticity of night-time luminosity, weighted average of Areas A, B and C and gross domestic product, quarterly, 2012–2020



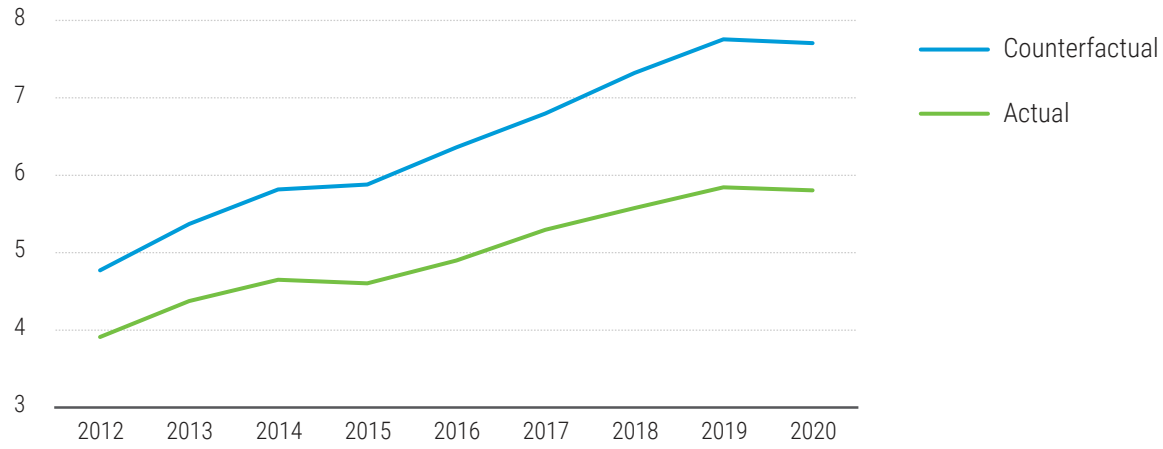
Source: UNCTAD calculations.

Applying this elasticity to the difference between the actual and counterfactual NTL levels provides an estimation of lost potential GDP resulting from the additional restrictions on Palestinian economic activities in the part of Area C under consideration. As suggested by the analysis, if Palestinian economic activity in the 30 per cent of Area C accessible to Palestinians had been subjected to the same level of restrictions imposed by the occupying Power in Areas A and B, Palestinian GDP would have been much greater and macroeconomic indicators would have been healthier, including fiscal and employment and trade-related indicators.

In this section, the following question is considered: what if, in 2000, as stipulated in the Oslo Accords, Area C, the one contiguous part of the West Bank, had been opened for Palestinians to expand into and develop? Estimates are calculated using NTL/GDP elasticity, whereby a counterfactual scenario is developed by assuming that the level of development in Area C, measured by NTL, should equal the level of development in Areas A and B if Palestinians had been able to expand into and develop Area C. Therefore, the NTL levels in Areas A and B are rolled out to Area C, based on the assumption that the level of NTL in Area C emanates entirely from Palestinian activities. This assumption ensures a cautious estimate of the potential losses from not opening up Area C for Palestinians to expand into and develop in the year 2000 (as stipulated in the Oslo Accords), since only 1.5 per cent of Area C is actually open for Palestinian development. The comparison between the actual NTL in the West Bank and the counterfactual NTL is shown in figure 14, whereby the counterfactual NTL is on average 28 per cent greater annually than the actual NTL.

Figure 14

The West Bank: Estimated actual and counterfactual night-time luminosity
(nW/cm^{-2}sr^{-1})

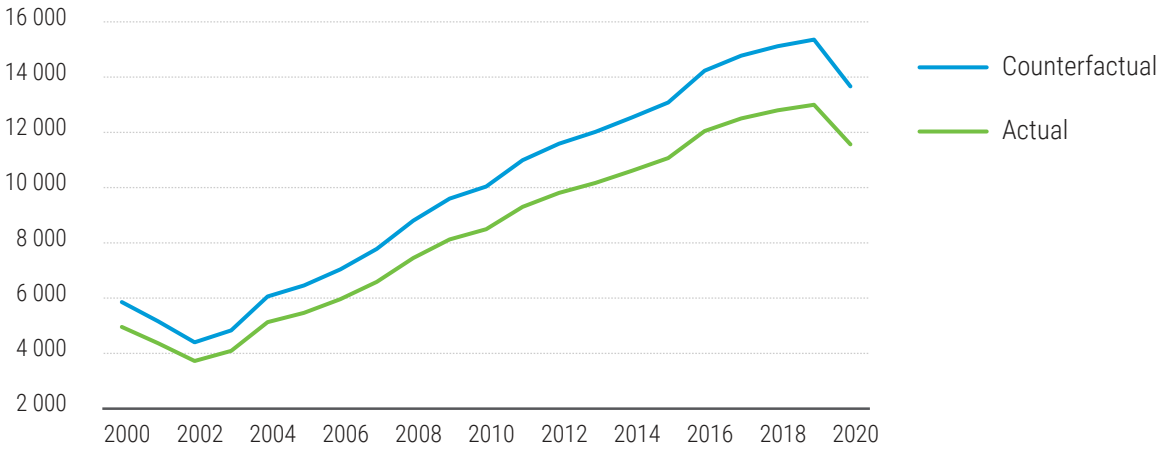


Source: UNCTAD calculations.
Note: NTL data for Area C excludes East Jerusalem and settlements.

Applying this elasticity to the difference between the actual NTL level and the counterfactual NTL level provides an estimate of the potential GDP losses from Area C not having been open for Palestinians to expand into and develop since 2000. Under such a scenario, the West Bank economy would have been 25.3 per cent higher than its actual observed level, and cumulative potential GDP losses are estimated at $45 billion in 2000–2020 ((constant 2015 dollars; figure 15 and table 2).

Figure 15

The West Bank: Estimated actual and counterfactual gross domestic product
(Millions of constant 2015 dollars)



Source: UNCTAD calculations.

Table 2
The West Bank: Estimated actual and counterfactual gross domestic product
(Millions of constant 2015 dollars)

Year	GDP, actual	GDP, counterfactual	Difference
2000	4 958	6 214	1 256
2001	4 366	5 472	1 106
2002	3 725	4 668	944
2003	4 091	5 127	1 036
2004	5 129	6 428	1 299
2005	5 469	6 854	1 385
2006	5 962	7 472	1 510
2007	6 588	8 256	1 669
2008	7 451	9 339	1 888
2009	8 126	10 185	2 059
2010	8 496	10 648	2 152
2011	9 306	11 663	2 357
2012	9 810	12 295	2 485
2013	10 172	12 749	2 577
2014	10 610	13 298	2 688
2015	11 072	13 877	2 805
2016	12 046	15 098	3 052
2017	12 506	15 673	3 168
2018	12 797	16 039	3 242
2019	12 999	16 292	3 293
2020	11 564	14 494	2 929
Total	177 243	222 143	44 899
		Total in 2020 dollars 49 910	

Source: UNCTAD calculations.

B. Size of the economy of settlements in Area C and East Jerusalem

An assessment of part of the cost of the occupation of Area C in terms of the additional restrictions imposed by occupation outside settlements is described in the previous section. In this section, some indicators are provided of the cost imposed by the presence of settlements in Area C, through an assessment of their contribution to the economy of Israel. For this purpose, GDP generated by the occupying Power in these settlements in 2000–2020, using Palestinian land and natural resources, is estimated.

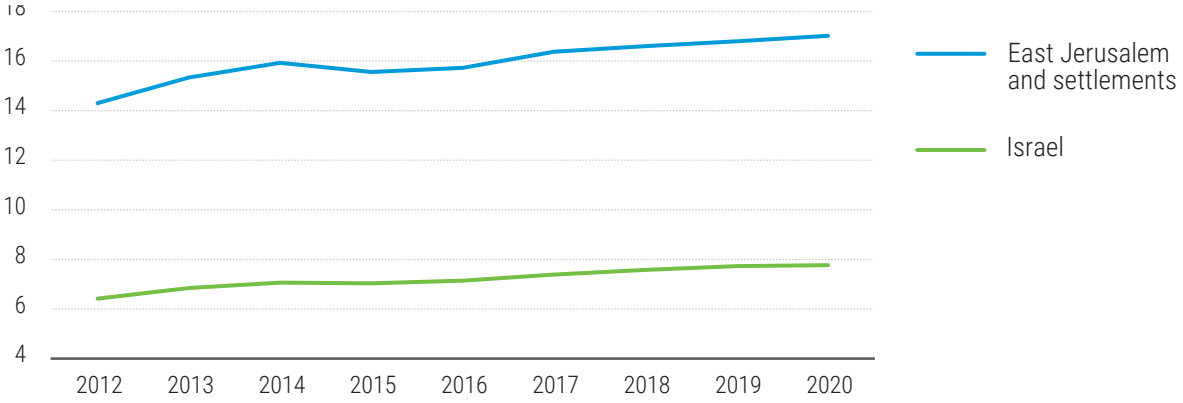
As Palestinians face severe restrictions in developing or investing in Area C, the long-term policy of Israel for the establishment and expansion of settlements in the occupied West Bank continues, despite the adoption of many resolutions in this regard by the General Assembly and the Security Council. By early 2021, Israel had established over 280 settlements in the West Bank, populated by over 440,000 Israeli citizens, excluding East Jerusalem (B'Tselem, 2021).

As a result of the expansion of economic activity in settlements in Area C, the average annual NTL emanating from occupied East Jerusalem and from settlements in Area C is twice that emanating

from Israel (figure 16), indicating that GDP per capita generated in East Jerusalem and in settlements in the West Bank is higher than that in Israel.

Figure 16

Israel, East Jerusalem and settlements: Average annual night-time luminosity
($nW/cm^{-2}sr^{-1}$)



Source: UNCTAD calculations, based on data from NASA, 2022.

It is therefore possible to use the share of the population of East Jerusalem and of settlements elsewhere in the West Bank in the total Israeli population, as reported by Israel, to conservatively estimate the lower bound of Israeli GDP, also as reported by Israel, that could be attributed to occupied East Jerusalem and to settlements elsewhere in the occupied West Bank. This can be done by assuming that the relative contribution of the population to GDP in both areas is the same. Doing so might underestimate GDP generated in East Jerusalem and in settlements yet it provides a useful indicator in assessing an economic dimension of the occupation and of the settlement system.

In 2000–2020, the population in Israel, in occupied East Jerusalem and in settlements elsewhere in the West Bank, added together, increased from 6.3 million to 9.2 million and the share of that population living in East Jerusalem and settlements elsewhere in the West Bank increased from 11 per cent in 2000 to 12.4 per cent in 2020 (table 3). GDP produced by the occupying Power in East Jerusalem and settlements is estimated by multiplying the share of East Jerusalem and of settlements in the population by the total reported GDP of Israel (multiplying the population in East Jerusalem and settlements by GDP per capita yields the same result).

Table 3

Israel, East Jerusalem and settlements: Estimated gross domestic product and population

(Billions of constant 2015 dollars)

Year	Israel: Real GDP	Israel: Population, including East Jerusalem and settlements	West Bank: East Jerusalem and settlements population (percentage of total)	East Jerusalem and settlements: GDP
2000	180.80	6 289 000	11.0	19.8
2001	180.98	6 439 000	11.0	19.9
2002	180.63	6 570 000	11.0	19.9
2003	182.70	6 689 700	11.1	20.3
2004	191.68	6 809 000	11.2	21.4
2005	199.65	6 930 100	11.2	22.4
2006	211.19	7 053 700	11.3	24.0
2007	224.07	7 180 100	11.5	25.7
2008	231.82	7 308 800	11.6	26.9
2009	234.47	7 485 600	11.5	26.9
2010	247.80	7 623 600	11.6	28.7
2011	261.54	7 765 800	11.7	30.5
2012	268.92	7 910 500	11.8	31.8
2013	281.77	8 059 500	11.9	33.6
2014	293.39	8 215 700	11.9	34.8
2015	300.08	8 380 100	12.0	36.0
2016	313.47	8 546 000	12.1	37.8
2017	327.19	8 713 300	12.1	39.7
2018	340.22	8 882 800	12.2	41.5
2019	353.06	9 054 000	12.3	43.4
2020	345.46	9 216 900	12.4	42.9
Total				627.8
			Total in 2020 dollars	851.7

Source: UNCTAD calculations, based on data from B'Tselem (population in settlements), Palestinian Central Bureau of Statistics (population in East Jerusalem) and World Development Indicators database (GDP).

GDP generated by Israel through the occupation of East Jerusalem and Area C of the West Bank in 2000–2020 is estimated at, at least, $628 billion (constant 2015 dollars) or $852 billion (2020 dollars). The average GDP produced in East Jerusalem and in settlements elsewhere in the West Bank is estimated at $41 billion per year (current dollars), or 227 per cent of the total Palestinian GDP in 2021. The estimated size of GDP produced by Israel in settlements in Area C and East Jerusalem, using Palestinian land and natural resources, is an indicator of the cost of the presence of settlements for the Palestinian people and suggests that ending the occupation of Area C would enable the Palestinian people to grow their economy severalfold.

VI. Concluding remarks

The negative impact of the multilayered control system of Israel over Palestinian development and economic activity throughout the Occupied Palestinian Territory is substantial. The restrictions on Palestinian economic activity are pronounced in Area C but are by no means limited to this area. Gaza remains under a closure that has decimated its economy and productive base.

As the Palestinian people do not have a national currency, they mainly use the new Israeli shekel, the exchange rate of which is incompatible with the needs and level of development of the Palestinian economy. The exchange rate is one of the most important prices in any economy. As the new Israeli shekel is too strong for the competitiveness of Palestinian producers, it fosters a high level of imports, weakens exports and undermines GDP growth and job creation.

The annual cost of the imposition of additional restrictions on Palestinian economic activity in the 30 per cent of Area C accessible to Palestinians is estimated at one quarter of West Bank GDP and the cumulative cost in 2000–2020 is estimated at three times West Bank GDP in 2020. These estimates are extremely conservative and should be interpreted as lower-bound indicators of only a fraction of the total economic cost of the occupation in Area C. Further, the contribution of settlements in Area C and occupied East Jerusalem to the economy of Israel is estimated at an average of $30 billion per year (constant 2015 dollars), or 2.7 times the annual Palestinian GDP in 2000–2020. In other words, the cumulative contribution of settlements to the economy of Israel in 2000–2020 is estimated at $628 billion (constant 2015 dollars).

In recent years, the Palestinian Government has been in the grip of one of the greatest fiscal crises in its history. The crisis is characterized by a large financing gap, a precipitous decline in foreign aid and the exhaustion of domestic borrowing sources. Fiscal management remains one of the greatest challenges faced by the Palestinian Government because of its impact on the ability to carry out basic State functions and meet obligations to pay civil servants, provide essential public goods and services and develop physical and institutional infrastructure. The fiscal crisis is mainly caused by the economic consequences of occupation (UNCTAD, 2022).

It is clear that the complex, multilayered restrictions implemented under occupation stifle economic activity and suppress potential revenue-enhancing GDP gains, thereby entrenching the fiscal challenges faced by the Palestinian Government. Not only does the occupying Power deny Palestinians access to Area C, it also does not abide by the stipulations of the 1995 interim agreement through failure to transfer tax revenue collected in Area C to the Palestinian Government.

It is clear that allowing Palestinian producers access to Area C would significantly reduce the fiscal deficit and maximize Palestinian fiscal space. This would also bring an end to aid dependence and enable the Palestinian Government to realistically pursue achievement of the Sustainable Development Goals by financing development and investing in rebuilding social, institutional and physical infrastructures, as well as providing essential public goods and social services. For example, assuming that the current ratio of revenue to GDP holds, reducing the additional barriers on the 30 per cent of Area C available to Palestinian development could increase Palestinian GDP by $2.5 billion per year, enough to boost government revenue by $575 million per year and eliminate about 46 per cent of the 2021 fiscal deficit.

Occupation remains at the root of the chronic Palestinian fiscal crisis and the key obstacle to fiscal sustainability. Fiscal resilience and substantiality require removing restrictions, to enable economic growth that will translate into revenue gains and ease pressure on the Government to sustain high levels of social spending and act as the employer of last resort.

Finally, in line with the United Nations (2022) and based on the significant cost of occupation documented in this study and in other research, it is clear that sustainable development in the

Occupied Palestinian Territory is unachievable without lifting all restrictions on Palestinian economic activity and, ultimately, ending occupation. Accordingly, the international community should consider the following:

(a) Calling on Israel to shoulder its responsibilities under international law;

(b) In line with the relevant United Nations resolutions, exerting all efforts necessary to bring an end to the occupation and reverse the evolving and substantial economic cost of the Israeli occupation for the Palestinian people;

(c) Ending and reversing all settlement activities in the Occupied Palestinian Territory, including East Jerusalem, consistent with Security Council resolution 2334 (2016), in which the Council reaffirmed that the establishment of such settlements "has no legal validity and constitutes a flagrant violation under international law and a major obstacle to the achievement of the two-State solution and a just, lasting and comprehensive peace";

(d) Lifting all restrictions on Palestinian economic activity in Area C, pending a comprehensive settlement, and allowing for substantially increased Palestinian economic activity, as lifting such restrictions would provide the Palestinian economy with a badly needed economic and natural resource base for developing and reversing the current trend of increasing socioeconomic deprivation.

The costs of occupation pose a major challenge in terms of resource mobilization. The Palestinian Government is saddled with responsibilities far greater than can be handled given the limited resources and policy space at its disposal. Palestinian national self-sufficiency may be pursued but cannot be fully achieved under occupation. Until the occupation is ended, to avert sharp socioeconomic and humanitarian crises, there is no substitute for reversing the ongoing negative trend in foreign aid and strengthening donor support to the Palestinian people.

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