Faculty of Graduate Studies

Master Program in Water and Environmental Engineering

MSc. Thesis:

Evaluation of Local Environmental Policies towards Green Economy in Palestine

تقييم السياسات البيئية المحلية من أجل الاقتصاد الأخضر في فلسطين

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This thesis was prepared under the main supervision of Dr. Maher Abu-Madi and has been approved by all members of the examination committee.

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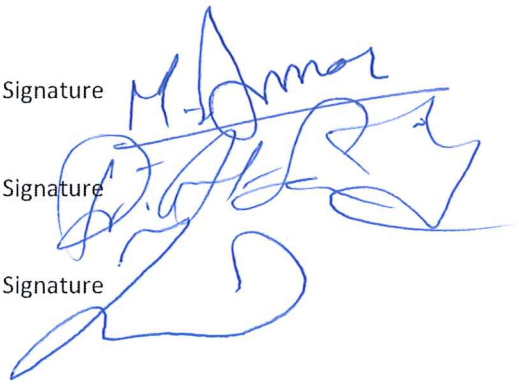

The findings, interpretations and the conclusions expressed in this study do not necessarily express the views of Birzeit University, the views of the individual members of the MSc. Committee or the views of their respective employers.

Date of Defense: 11-7-2023

Dedication

الإهداء

إلى جذوري الأصيلة التي أنتجت فرعي المثمر، عائلتي

إلى رفيق المستقبل، من كان مسك الختام في هذه الرحلة

إلى منارة العلم، الأم التي حضنت ذكرياتنا صيفاً وشتاءً، جامعة بيرزيت

إلى كل أب روحي تمثلوا في جسد معلّمينا في أروقة بيرزيت

أهدي لكم هذا العمل، وأسأل الله التوفيق لما يحب ويرضى، وأن يكون خطوة البداية لعلم أكثر،

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الشكر والامتنان الأول والأخير إلى من أهداني إلى هذا العمل، ويسّر لي خطواته، ووفقني لإنهائه، فالحمد لله حمداً طيباً مباركاً

أتقدم بالشكر لمعلمي ومشرف هذا البحث ومن كان بمثابة الأخ الكبير، د .ماهر أبو ماضي

والشكر موصول أيضاً للجنة المناقشة كل من د .زياد الميمي ود .راشد الساعد، وجميع الهيئة التدريسية والطاقم الإداري لمعهد الدراسات المائية والبيئية في جامعة بيرزيت.

وأخيراً وليس آخراً، شكراً لكل من ساهم في إنجاز هذا العمل، معلمينا في الجامعة، رفاق مقاعد الدراسة، الخبراء البيئيين من الوزارات والمؤسسات الحكومية ومؤسسات المجتمع المدني، المساهمين من شركات القطاع الخاص

Abbreviations

AFED	Arab Forum of Environmental and Development
EC	European Commission
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EQA	Environmental Quality Authority
ESCWA	Economic and Social Commission for Western Asia
GDP	Gross Domestic Production
GE	Green Economy
GGGI	Global Green Growth Institute
GGKP	Green Growth Knowledge Platform
GHG	Green House Gas
GK	Green Keynesianism
HM Government	Her Majesty's Government
HZW	Hazardous Waste
LEEC	London Environmental Economy Center
MoA	Ministry of Agriculture
MoLG	Ministry of Local Government
MoNE	Ministry of National Economy
OECD	Organization of Economic Co-operation and Development
PCBS	Palestinian Centre Bureau of Statistics
PENRA	Palestinian Energy and Natural Recourses Authority
PWA	Palestinian Water Authority
SDGs	Sustainable Development Goals
SMART	Specific, Measurable, Attainable, Realistic, and Time-bound
UN	United Nations
UNEP	United Nations Environmental Program
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific

Abstract

Green economy (GE) as a concept started more than two decades ago, and was re-activated after the international financial crisis in 2008. GE aims to sustain the development and find solutions for international issues such as poverty, unemployment, and natural resources depletion. Many governments and organizations are considering green economy in their national agendas. In Palestine, the national economy is suffering from many environmental and economic challenges, especially after COVID-19 crisis. This thesis analyzes the gap between the Palestinian economy and the green economy from policy perspective. The Palestinian Policies and regulations of Environmental Quality Authority (EQA), Palestinian Energy and Natural Resources Authority (PENRA), and Palestinian Water Authority (PWA) were analyzed based on a pre-set review criteria based on 40 local experts survey. the research concludes that there are enough policies and regulations that adopt green economy concept, but enhancing the application of laws and policies is recommended to achieve the target.

ملخص

ظهر مفهوم الاقتصاد الأخضر (GE) منذ أكثر من عقدين، وتم إعادة تفعيله بعد الأزمة العالمية الاقتصادية في العام 2008 يهدف إلى تحقيق استدامة النمو الاقتصادي بوجود مشاكل عالمية منها البطالة والفقر واستنزاف الموارد الطبيعية. عملت العديد من الحكومات والمؤسسات على إدراج الاقتصاد الأخضر ضمن مخططاتها وأجنداتها، وفي ظل عمل الحكومة الفلسطينية على تطوير الاقتصاد المحلي في ظل وجود تحديات بيئية واقتصادية خاصة بعد أزمة كوفيد-19. يهدف هذا البحث إلى تحليل الفجوة بين الاقتصاد الفلسطيني والاقتصاد الأخضر من وجهة نظر سياساتية. تم تحليل سياسات وقوانين كل من سلطة جودة البيئة (EQA)، سلطة الطاقة والموارد الطبيعية (PENRA)، وسلطة المياه الفلسطينية (PWA) بناء على معايير تم اختيارها بناء على استبيان استهدف 40 خبيراً

فلسطينياً. ختمت هذه الدراسة بوجود قوانين وسياسات كافية لتحقيق الاقتصاد الأخضر محلياً لكن التوصيات رمت إلى التطبيق العملي والفعلي لهذه القوانين والسياسات للوصول لاقتصاد مستدام فلسطيني.

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Chapter One: Introduction

1.1 Background

The Palestinian Ministry of National Economy (MoNE) discussed in 2021-2023 sectorial strategy the challenges facing the Palestinian local economy in 3rd quarter of the year 2020. The main two challenges were the Israeli occupation and COVID-19 crisis. Where the Israeli occupation controls and limits the Palestinians' access to natural resources, including but not limited to, water, energy, land, telecommunication services and others, which impeded investment opportunities.

In addition to the high dependency on the Israeli occupation in regards of monetary policy and trade policy, de-formatting the economic infrastructure and weakening the production sectors including industry, controlling the Palestinian border crossings, customs revenues, and prevention and impeding both export and import (MoNE, 2020).

Ministry of National Economy (MoNE) reports illustrated that Gross Domestic Production (GDP) in Palestine by 1.4% in 2017; from US$15.2 Billion to US$15.4 Billion. While it grew by 1.2% to score US$ 15.6 Billion in 2018, and US$ 15.8 Billion in 2019. The PCBS (2020) reported US$ 2.5 Billion in the first 3 months of the COVID-19 crisis and predicted GDP to fall by 14% in 2020 (compared to 2019) (MoNE, 2020).

MoNE reported that the GDP was US$ 3,489.8 per capita in 2016, felled by 0.8% in 2017 to score US$ 3,463, US$ 3,418 in 2018, US$ 3,364 in 2019, and was predicted to fall by 10% in 2020 due to COVID crisis (MoNE, 2020).

Palestinian economy is based on services sector which contributes with 27.9% of the Gross Domestic Production (GDP). However, MoNE considers a modest contribution of the four sectors: agriculture, industry, construction sectors, and internal trade contribute to 6.9%, 13%, 5.7% and 21.4% of the GDP, respectively

Due to COVID-19 restrictions taken by the Palestinian government to prevent the spread of this pandemic in early March 2020, number of employees dropped by 121 thousand in the second quarter of year 2020 (compared to first quarter of the year).

Also, the quarantine affected labor force participation rate, which fall to 39% in the second quarter of the year 2020 compared to 43% in the first quarter if the same year.

MoNE updated the Strategic Plan for economic growth (2021-2023) with partners from governmental organizations, private sector, civil society, and other related stakeholders with international partners. The Strategic plan based on 18th Governmental Vision (National Policy Agenda 2017-2022), Sustainable Development Goals (SDGs) Agenda, and integration with other intersectoral strategies.

The future vision of Palestinian economy sector is "transition toward independent resilient productive economy, incapable to compete and attract investments to achieve economic, social and sustainable development".

Strategic Goals:

1st Strategic Goal: independent Palestinian Economy.

2nd Strategic Goal: empowering and investment-attractive business environment.

3rd Strategic Goal: leading and competitive Palestinian Industry.

4th Strategic Goal: organized internal market.

The mentioned strategies contribute to four main sustainable development goals as follows:

- SDG 2: Zero Hunger: Strategic Goal #4
- SDG 5: Gender Equality: Strategic Goals #2 and #3
- SDG 8: Decent Work and Economic Growth: Strategic Goals #1, #2, and #3.
- SDG 9: Industry, Innovation, and Infrastructure: Strategic Goals #1, #2, and #3.

The Palestinian government released many national development plans since 2008, including:

1. Reform and Development Plan 2008-2010.
2. Development Plan 2011-2013: Statehood and Building the Future.

3. Development Plan 2014-2016: Nationhood and repository of sovereignty.
4. Recent Publication was titled "National Policies Agenda 2017-2022: Citizen First", published in Late 2016, to highlight the Palestinian priorities in terms of citizen needs. This Agenda considering realistic policy and financial framework targeting the independency of Palestinians through using the available resources effectively.

This National Policies Agenda considered the sustainable development as one of the three main pillars, the three pillars are below. It is clear that Green Economy can contribute to the three pillars, directly and indirectly. (Palestinian Government, 2016)

1. Roads towards independence.
2. Reformation and improve quality of Public Services.
3. Sustainable Development.

1.2 Importance of Green Economy (Why Now)

The Palestinian economy is challenged by political situation, where Israeli occupation impose constrains on the movement of both people and goods, prevents business confidence and investment, with limitation of access to natural resources. These challenges reflected in a low growth rate, higher unemployment, higher poverty, inadequate investment, and trade deficit. (EQA, 2016). The Palestinian economy considered as a vulnerable economy for many reasons, including but not limited to, the political challenges, low economic performance (low growth rate, high unemployment rate, high poverty, and inadequate investment), and dependent economy on other economies (mainly the Israeli economy) (EQA, 2016).

Transferring Palestinian Economy towards Green Economy is vital for two main reasons; demographic status and COVID-19 crises. The demographic statistics of Palestine indicates that more than 4.9 million population lives in Palestine in Mid-2019. The population growth will directly affect the environment since it means higher pressure on natural resources (higher demand) including food, water, energy and land. It all contributes to higher the carbon footprint with higher resource consumption and

unsustainability, in addition to increased demand on (and the need for) services such as waste management in light of more pollution production (سلطة جودة البيئة الفلسطينية، 2020).

Palestinian economy strained in 2019 because of COVID-19 crisis in addition to other political economic crises. A study by Abd Karim (2020) illustrated that COVID-19 resulted 5 years decline in GDP (Gross Domestic Product); 2.5 billion USD losses in 2020 compared to 2019 (سلطة جودة البيئة الفلسطينية، 2021).

Due to COVID-19 restrictions taken by the Palestinian government to prevent the spread of this pandemic in early March 2020, number of employees dropped by 121 thousand in the second quarter of year 2020 (compared to first quarter of the year). Also, the quarantine affected labor force participation rate, which fall to 39% in the second quarter of the year 2020 compared to 43% in the first quarter if the same year (Palestinian Ministry of National Economy (MoNE), 2020).

1.3 Research Problem

Sustainable Development Goals (SDGs 2030) by United Nations included two circular economy related goals (UN, 2020)

1. 8th Goal: Decent work and economic growth: including that objective to "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all".

2. 12th Goal: Responsible consumption and production: including that objective to "Ensure sustainable consumption and production patterns"

In 2018, Palestinian Authority reported the national voluntary review on the implementation of 2030 Agenda. However, the report included the challenges facing each goal as follows (دولة فلسطين، 2018)

1. SDG Goal 8: For economic growth approach, the main challenge is the Israeli control over the Palestinian Natural resources in West Bank, including, but not limited to, groundwater, agricultural land, oil, natural gas, and Dead Sea minerals. In addition to the movement restriction by the Israeli occupation.

2. SDG Goal 12: For waste management approach, the main challenge is that all land that could be implemented in the waste management facilities is located in Area C. However, the Palestinian government has set sustainable production and consumption strategy to promote sustainable agriculture and eco-tourism, also included the "polluter pays principle" in the environmental law.

However, Israeli control over economic activities in Palestine can be an opportunity to invest in our resources and enhance the green practices in the industry. For example, utilize the waste from different industries and residential buildings, and enhance the efficiency of resource consumption for industrial activities.

Palestinian Environmental Quality Authority already has some policies towards green economy, e.g. Environmental Impact Assessment Policy (EIA), and Solid Waste Management strategy. However, no policies yet are related directly to green economy (سلطة جودة البيئة الفلسطينية، 2020)

1.4 Hypotheses

The main hypothesis of this research is that green economy concepts are considered in the national Palestinian policies, such as Environmental Quality Authority (EQA), Palestinian Energy & Natural Resources Authority (PENRA) and Palestinian Water Authority (PWA) consider.

1.5 Aim and Objectives

Since the regulatory system will be the first step in green economy creation; this research aims to evaluate the current environmental policies published by EQA, PENRA and PWA, and to conduct a gap analysis towards green economy in Palestine. The specific objectives are:

1. To review the current green economy-related policies and/or regulations;
2. To conduct a gap analysis towards green economy supportive-ecosystem;
3. To assess the level of concern amongst Palestinian policy-makers and professionals towards green economy;

4. To develop recommendations towards green economy in the Palestinian industrial sector.

1.6 Approach and Methodology

In this research, primary qualitative and descriptive approaches were followed. Data collection is based on surveys targeting three local categories; local environmental experts, local policy makers, and local business owners. Main definitions and priorities of green economy in Palestine resulted from the first survey, list of local policies and regulation to be analyzed resulted from the second one, and challenges facing local business were the outcomes of the final survey.

Priorities from the first survey were considered to list the analysis criteria for the local policies and regulations for three organizations; EQA, PENRA, and PWA. Gap analysis were proceeded and strengths & weaknesses for each one listed in this research.

1.7 Thesis Outline

In chapter one, green economy background and history were overviewed. Also, research problem, hypothesis, aim & objectives, and approach and methodology were detailed. In 2nd chapter, the researcher reviewed many basic references and recent studies related to green economy, and were summarized in literature review chapter, with gap analysis in the Palestinian context. For this qualitative descriptive research, the methodology was detailed. In the 3rd chapter and more details illustrated in Annexes from 1 to 6. As per the followed approach, gap analysis (weaknesses and strengths), and results were illustrated in chapter 4. The final and fifth chapter concludes the research with recommendations.

Chapter Two: Literature Review

2.1 Green Economy Fundamentals

Many recent studies discussed green economy related concepts, fundamentals, indicators and its importance.

According to Najati, there was weak understanding of the link between Economy and Ecology on the international level, this was changed over the years by efforts from different organizations, and the main efforts are: (نجاتي، 2014)

- Limits to growth by Rome Club in 1972 was credited with the great awareness on international level by explaining the trouble will face the human-being by the depletion of economic resources with the rapid population growth. This changed the concept of "open environment" to "closed environment"; i.e. we are consuming the resources from a closed environment and the resources are depletable, forcing the human-being to initiate new strategies and ways to control the consumption process considering the future generations.
- In the light of previous concepts, green movements were raised, refusing the industrial civilization, schools, tools, and management which created insane human consumption which is predicted to lead to catastrophic issues, for example, greenhouse gas emissions, forest depletion, and others.
- In 1989 green economy concept was raised in one of the research projects by London Environmental Economy Center (LEEC) titled "Blueprint for a Green Economy" . the outcome were presented in a report titld “Pears Report”linking the economy and environment as a tool towards sustainable development and its understanding. Pearse report introduces the green economy as a tool to achieve the sustainable development through economic and financial tools, not as a new concept. Pearse report attempted to estimate the environmental costs to in order to clarify the concept of environmental services are not free, which means we have to consider these costs in the cost-benefit equations. The main

objective of this estimation is not to trade the financial benefits with natural capital losses.

- In 1991 another research project titled "Economy the Green" introduces wider frame to link development and environment. This study reviewed the green economy through the link between environment and economy, consider the points of view of both supporters and opponents. This study provided the green economy as a tool to sustainable development through using economic tools and indicators.
- However, the green economy concept did not receive enough international attention, resulting in disappeared concept over the years till the year of 2008, after the global financial crisis which negatively affected the achieving the sustainable development, causing reconsidering the conventional economic concepts epically in the light of climate change and ecological harms, UNEP raised the green economy initiative responding to worldwide main crisis's:
    - Financial crisis: this crisis in 2007-2008 is the worst since the "Great Depression", many jobs and income streams were lost in different sectors, affecting the economic and living conditions.
    - Food crisis: food crisis was intensified in 2008 and 2009 due to increased commodity prices that caused by increased production costs fossil fuel industry expansion, and high unemployment rates.
    - Climate crisis: this crisis emerged as an international priority seeking joint efforts to address the extreme change in climate, which was frequent in the previous years, in addition to consider climate adaptation and mitigation.

Figure (1) summarizes the history of Green Economy concept over years which was discussed in section 2.1

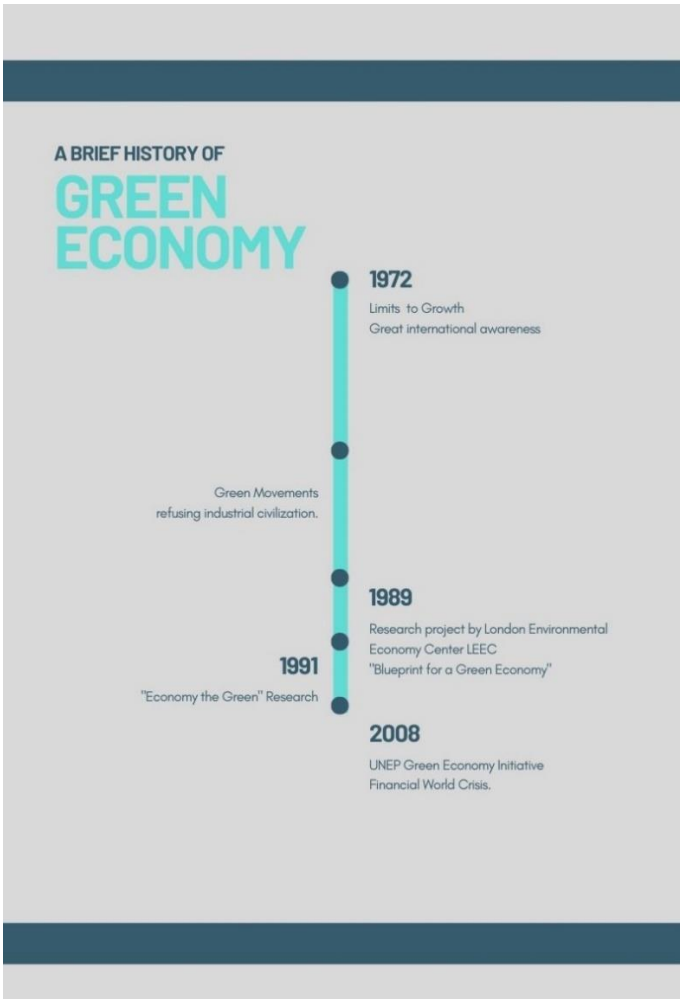

Figure 1: History of Green Economy

The Australian Environmental Protection Agency (EPA, 2019) defines the circular economy (green economy) as "changing the way we produce, assemble, sell, and use products to minimize waste, and to reduce the environmental impacts" (EPA, 2019).

As for business, the circular economy can be a great opportunity by maximizing the use of resources, and enhancing the innovation, growth, and job creation. This would contribute to long-term environmental, social, economic benefits (Environmental Protection Agency, 2019)

Sustainable Development Goals (SDGs 2030) by United Nations, shown in Figure (2), including two circular economy redirect related goals (UN, 2020):

1. 8th Goal: Decent work and economic growth: "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all".
2. 12th Goal: Responsible consumption and production: "Ensure sustainable consumption and production patterns"

Figure 2: SDGS And Green Economy

In Palestine, the National Policies Agenda 2017-2022: Citizen First cross-cutting the green economy in many ways:

- The first pillar of National Policies Agenda aims to enhance the resilience of Palestinians, however, green economy contributes to resilience by considering the efficient consumption of natural resources use in the light of high population rate, since Palestinians do not control their resources, including but not limited to energy, water, and others.
- The second pillar of National Policies Agenda aims to enhance the quality of life of Palestinians. By considering higher efficiency in natural resources consumption, raising the quality of life is a must, many economic opportunities and public services are expected be part of Palestinians lifestyle as a result, knowing that the national economic growth is an essential part of this pillar.

- The third, and final, pillar of National Policies Agenda is directly related to green economy, this pillar considering effectively the three pillars of sustainable development: Economy, Environmental and Society.

Starting with Loiseau et al paper which overviews Green Economy and related concepts which aimed to overview the concepts of green economy including diverse theories, develop a framework that shows the capacity of green economy concepts and tools that supports the transition towards sustainability, and the effect of green economy concepts on sustainability. The concept of green economy was first introduced by Pearce et al in 1989 responding to underestimation of social and environmental costs. Loiseau, et al (2016, as cited in UNEP, 2011defined Green Economy as a key tool for well-being and social equity in parallel with environmental risk reduction and ecological scarcities reduction. Green economy simply defined by low-carbon, resource efficient, and socially inclusive economy (Loiseau et al., 2016).

The history of green economy started in Rio+20 conference highlighted as a pathway to sustainability, and it was widely used to address the financial and climate change crisis, especially for Paris agreement target. Green economy strategies were developed on a national level by many countries, for example, South Korea, China and European Union. One of the main concepts related to green economy is "green growth" which was applied only to growth of the eco-industry, but later was expanded to the entire economy.

The authors concluded that the "green economy" concept is the umbrella concept which encompasses many implications related to well-being and growth, or efficiency and risk reduction with the use of natural recourse.

This paper analyzed the literature since 1990 that contains "green economy", it illustrated that over 50% of the keywords in the literature related to green economy belong to the semantic field of economy and environment. Environmental dimension covers many issues, including but not limited to, climate change, renewable resources, energy, etc. while economic dimensions cover development, growth, cost, competitive and others. However, social aspects were less represented in the analysis.

The analysis also shows that more than 35% of reviewed literature including green economy term associated with "sustainable development" and "sustainability", which reflects the concept of "green economy as a pathway towards sustainability" (Loiseau et al., 2016).

Lucien, et al (2017) aimed in their research to review the multiple concepts related to green economy in the light of developing this approach and the lack of available data. The article discussed the revolution of the concept of green economy raised after the financial crises in 2008 led to radical transformation towards the GE internationally. Several international organizations reported the green growth, and was summarized in this article with its typology (weak to strong), including European commission, OECD, UNEP, HM Government, World Bank, GGKP, UNESCAP, GGGI, Barbier, and Cato, Jackson and Victor. Only UNEP, UNESCAP, Barbier, and Cato, Jackson, and Victor were considered as transformational and/or strong GE typology (Lucien, Maslin, & Poessinouw, 2017).

The Organization of Economic Co-operation and Development (OECD) is an international organization that works to build better policies for better lives, focuses mainly on shaping policies with more than 60 years of experience. The OECD report was the last updated version of green growth indicators, charts of OECD countries and their performance since 1990, and focuses on the role of policy action (OECD, 2017).

OECD defines the green growth in this report by the process of promoting growth and development in the light of ensuring that natural assets provide the resource and environmental services continuously on which our well-being relies. The report included many items to be considered for each OECD country, However, Palestine is not one of these countries and was not included in this report (The Organisation for Economic Co-operation and Development (OECD), 2017).

Ge and Zhi, 2016 overviewed the relationship between green economy and job creation, studying the effect of green economy on the employment in both developing and developed countries, based on clean energy policies studies. The author pointed out that

UNEP stated that green economy can create jobs along with social equity. Also, The International Labor Organization believes that millions of job opportunities can be created with green economy (Ge & Zhi, 2016).

The employment effect includes direct, indirect and induces effects (green jobs classification). Employment including gross employment (direct and indirect) and net (which considers the traditional job loss from green economy.

Also, they overviewed some researches related to green economy and job creation, the author concluded with the positive effect of green economy on job creation in both developing and developed countries, however, the green economy can negatively affect the job opportunities in some cased as occurred in Spain. The author analysis indicates that negative effect of green economy on employment occurs usually in first-class countries in a developing green economy (like Spain, Germany and Italy) (Ge & Zhi, 2016)

Ferguson, 2015 Overviewed the Green Economy concept which arise more than two decades, as a key part of sustainable development. However, the concept of green economy was re-activated after the financial crisis of 2008 aiming to reconcile the conflict between global economic, development, and ecological needs; being a key part of environmental and economic discourage (Ferguson, 2015).

The author said that every society needs some forms of growth to have better environmental and social situation; this could be in many forms, including but limited to, renewable energy production, education, health, etc. The author pointed that while environmentalists are trying to establish the green economy concept, the business is generally trying to sustain the profits, the main gap here is that green economy concept is still vague and imprecise about what to sustain (Ferguson, 2015).

Green growth was reflected in many theoretical frames, including Green Keynesianism (which refers to the demand is mainly determined by the government, mainly governmental investment) which was the main driving force for many governments to fund the environmental programmers after 2008 global crisis. Green growth theory was

also one of the theoretical frames, which introduces emissions taxes and tradable permits as a key tool for cleaner production and consumption. The later frame is green industrial revolution which offers advantages for the innovative countries in the field of green technology (Ferguson, 2015).

Green Keynesianism (GK) is the planned investment program set by the government focusing on green infrastructure. Although that Green Keynesianism seems to be the first step to encourage green growth, but the author in this book concludes that GK is too conservative to merit as a transitionary program (Eskelinen, 2015).

UNEP, OECD discussed green economy indicators in their guidance, the table below summarizes the priorities and indicators in both documents.

Table (1) below summarizes the environmental priorities for each organization in the literature review above.

TABLE 1: SUMMARY OF PRIORITIES FOR EACH ORGANIZATION

ORG.	Priority	Indicators
UNEP	Climate change	GHG emissions (kt of CO_2 equ per year) Rainfall (mm per year) and evaporation Storm-related damages (US$ per year)
UNEP	Ecosystem management	Forest cover (ha) Land and marine conservation areas (ha)
UNEP	Resource efficiency	Water intensity/productivity (m^3/US$) Coal consumption intensity (ton per GDP)
UNEP	Chemical and waste management	SO_x emissions (kg/yWr) Waste recycling and reuse (%) Toxic heavy metals concentration (mg/kg)
OECD	Carbon & energy production	CO_2 productivity Energy productivity
OECD	Resource productivity	Material productivity (not energy) Water productivity

OECD	Multifactor productivity	Environmental adjusted multifactor productivity
OECD	Natural resource stocks	Index of natural resources
OECD	Renewable stocks	Freshwater resources Forest resources Fish resources
OECD	Non-renewable stocks	Mineral resources
OECD	Biodiversity and ecosystems	Land resources Soil resources Wildlife resources
OECD	Environmental health and risks	Environmentally induced health problems and related costs Exposure to natural or industrial risks and related economic losses
OECD	Environmental services and amenities	Access to sewage treatment and drinking water
OECD	Technology and innovation	Research and development expenditure of importance of green growth Patent of importance to green growth Environmental-related innovation in all sectors
OECD	Environmental goods and services	Production of environmental goods and services
OECD	International financial flows	International financial flows of importance to green growth
OECD	prices and transfers	Environmentally related taxation and subsidies Energy pricing Water pricing and cost recovery

Jordan GE	Energy Sector	Primary energy supply and demand Energy policies Potential cost savings from clean energy technologies Clean energy finance Sustainable energy investment and job creation
Jordan GE	Transport sector	Current trends in public transport Transport demand Green transport investment and job creation
Jordan GE	Water sector	Current trends in water supply and use Water demand Water policy consideration Water management investment and job creation
Jordan GE	Waste sector	Current trends waste management Green investment and job creation
Jordan GE	Organic and sustainable farming	Current trends in agriculture Organic farming as a form of sustainable agriculture Policies and initiatives for promoting investment in organic farming Organic agriculture investment and job creation
Jordan GE	Sustainable tourism and eco-tourism	Current trends in sustainable tourism Policies and initiatives Income generation and job creation

GE in Arab World	Agriculture	Regulating irrigation water use Agricultural subsidy reforms Investment Knowledge based agricultural practices, trainings and extension Incentives for sustainable agricultural practices Research and development Promoting organic farming
	Water	Not available
	Energy	Regulations Incentives Knowledge Management Public awareness Research and development
	Industry	
	Transportation	
	Cities and Building	
	Waste Management	
	Tourism	

Building Revolutions' Author defined circular economy is the process of keeping resources and materials in use while retaining their value, rather than consumption and disposal strategy. Many strategies can be used in terms to achieve this, including but not limited to, longer-lives products design, reuse, remanufacture, or reassembled instead of discard. Products made from biological materials without toxics is also a strategy. (Cheshire, 2016)

Circular economy concept closely relates to the “cradle to cradle” design framework which was developed by William McDonough and Michael Braungart. (Cheshire, 2016)

Chechire, 2016 concluded that shifting to circular economy is not only about using fewer resources, but also to create and retain value in building and the components. Also, the shift to circular economy will create new business models and industries that offer ways for organizations to create long-term relationships with customers, and to provide local employment opportunities from refurbishment and remanufacturing (Cheshire, 2016).

2.2. Green Economy Transition

Transition to green economy, challenges and the transition process (How to) were discussed in many researches, reports, and success stories over the years. Several challenges were discussed by (Melece, 2016) and evaluated the current state of green growth in Latvia in comparison with other European countries using several chosen indicators, including resource productivity, waste management and eco-innovation.

Policies and legislations provided a long-term vision for recycling and waste reduction by European Commission (EC), policies also were able to play a key role in closing the investment gap for waste management. Melece, 2016 concluded with those policies are required for fundamental changes in production and consumption system that required for creating green economy (Melece, 2016)

UNEP in 2014 defined the green economy as "the economy that results in improving human well-being and social equity, while significantly reducing environmental risks and ecological scarcities". This manual aims to help countries to select the green economy indicators in order to select tools to identify the priorities, green economy policy formulation, and evaluate the performance. This process can be progressed through four main steps as detailed below.

The first step is the issue identification, which aims to set priorities for decision makers. This includes 4 main steps: identify the potentially worrying trends, assessment in order to natural environment, analyze the causes of the concerns, and analyze the impact on society, economy and the environment. The second step is the identification of policy formulation indicators. This step aims to design solution raised in the previous step. Two key steps can be processed here; identify policy (SMART) objectives and identify the intervention options. The third step is the policy assessment, aims to analyze the policies in terms of social, economic and environmental terms (advantages and disadvantages). This can be done through three main steps; policy impact estimation, impact analysis overall well-being of the population, and advantages and disadvantages analysis. The final step is the monitoring and evaluation of policy impact during and after the implementation. Three key steps are required for this step; policy impact measurement in relation to the environment, investment leveraged measurement, and measure the impacts across sectors and over-all well-being (UNEP , 2014a).

2.3 Regional Challenges and Transition

Many studies discussed the challenges and key points to be considered in the transition towards green economy in the Mediterranean and Arab Region.

Starting with Al-Malki (2017) who reviewed the experiences of several developed and developing countries in Green Economy transition like Danish, Korean, Brazilian and other. The main objective is to reflect these experiences on the Saudi Arabian economy towards sustainable economy.

This study reviewed both developing and developed countries, developed countries include Denmark (green city), Netherlands (agricultural innovation), UK (greenhouse gases reduction), Germany (Clean Energy), USA (Waste to Energy), and emerging & developing countries include Korea (Green growth), Brazil (reduce rainforest deforestation, rapid transportation, waste recycling), Singapore (quality of life), Mexico (CO_2 reduction), China (Renewable Energy), Costa Rica (reduce deforestation), Ecuador (water protection), Uganda (organic agriculture), Bangladesh (Renewable

Energy). Arab countries were discussed included Tunisia (Renewable- clear energy), Morocco (Sectoral programs), and UAE (sustainable model city- Masdar City and air quality).

This study recommended to consider inter-sectorial environmental programs, increase green investments to include several areas in Kingdom of Saudi Arabia (KSA), storm water use with dams, profit from other countries experiences towards green economy and green growth, establish supreme central committee for green economy by related ministries, establish air quality control network, awareness via media, develop the required legislations, systems, and standards towards GE, private sector involvement, highlight the problem of plastic waste, consider GE in curriculum, and fund researches and researchers (المالكي، 2017).

World Bank published a series of "Country and development report" for 25 countries in 2022, including 4 Arab Countries; Egypt, Morocco, Iraq, and Jordan. The reports aimed to highlight the development strategies in the light of climate change ad environmental priorities, using "low-carbon economy" as a tool towards the development, all reports started with policies implementation in order to support low carbon emissions, leading to phasing out the carbon-emissions economic activities while developing the economic growth for the country (World Bank, 2023). For Morocco, the report illustrates the priorities for the country for development, which was decarbonizing the economy, enhancing resilience to floods, and tackling water scarcity and drought using the main three tools; financing, institutions & governance, and equitable transition (World Bank Group, 2022).

Green Economy transition in the Arab Region includes the main eight sectors summarized in Figure (3) (Arab Forum for Environment and Development, 2011):

1. Agriculture.
2. Water.
3. Energy.
4. Industry.

5. Transportation.
6. Cities and Buildings.
7. Waste Management.
8. Tourism.

Figure 3: Green Economy Main Sectors (Arab Forum for Environment and Development, 2011)

Fosse and other researchers in this report presents Green Economy and Sustainable Development policies in Mediterranean countries, using literature review (including published national strategies, policies and initiatives) and assessment addressing the real practices in these countries, and finally recommend the accelerating actions towards transition to green economy in the region. The final evaluation of data was classified into 3 main categories, on a scale from 1 to 5 as follows: (Fosse, et al., 2016)

- SCALE 1.0- 1.9: rather weak.
- SCALE 2.0- 3.9: fair or moderate.
- SCALE 4.0- 5.0: good or very good.

Portugal has the highest rank among Mediterranean countries with 4.2 scale, and **Palestine** has the lowest rank with 2.6 scale.

For Palestine, four main strategies were considered in the literature review:

- National Development Plan 2014-2016.
- National Agriculture sector strategy 2014-2016.
- Water sector reform plan 2014-2016.
- National energy efficiency action plan 2012-2014.

Strong and weak points were reported. Strong points mainly included well-developed objectives that related to forests with sustainable management and afforestation, and the involvement of several stakeholders in document preparation consultation. On the other side, the main weaknesses were the lack of green economy/sustainable development strategy, objective poorly relate to sustainability in the field of transportation, tourism, research & innovation, and ecosystem services management, in addition to short term objectives.

The report summarized the evaluation by considering it weak, despite incorporation of sustainable development principles in some strategies objectives, many sectors of economy lack green economy related objectives, in addition, no specific strategy for green economy and sustainable development. Also, the report recommended to treat the Palestinian case carefully since the Palestinian has no control of their natural resources which limits the planning capabilities and targeting objectives. Mentioning the Israeli provision of Energy to Palestinian side which derived from fossil fuels and this contributes ton brown energy in the country (Fosse, et al., 2016).

Arab Forum for Environment and Development (AFED) publish annual environmental related topic reports since 2008. The fourth report in 2011 was titled "Green Economy: Sustainable transition in a changing Arab World", publish soon after the Arab Spring started in 2010.

Rebee and Musbah (2019) highlighted the requirements, challenges, solutions and success stories of transition to green economy in Arab region (ربيع و مصباح، 2019).

The most important transition requirements in this study includes:

1. Governmental policies review and re-design to facilitate the transition in production, consumption and investment patterns.
2. Increase the attention to rural development in order to decrease poverty and increase resources.
3. Increase the attention to water sector; efficient use and pollution prevention.
4. Promote sustainable investment in energy sector, and enhance energy efficiency procedures.
5. Develop low-carbon strategies for industrial development, and adopt more efficient production technologies in new industrial facilities.
6. Promote mass transportation sector.
7. Adopt land classification system and environmental standards in construction sector.
8. Addressing solid waste issues and investing for eco-friendly solutions.

the researchers addressed 6 main challenges facing the transition in the region:

1. Weak development policies plans.
2. High unemployment rate including youths, creating unbalanced opportunities in some sectors to the detriment of other sectors.
3. Challenging policies facing international trade.
4. Poverty, weak health services and access clean water, low efficient use of clean water and energy sources.
5. No guarantee for success in both economic and environmental sectors.
6. High cost of environmental degradation in Arab countries.

The researchers in this article recommended six solutions towards sustainable economy in the region, including:

1. Creation of sound legislative framework; which is projected to address the rights and incentives that would drive the sustainable development and remove the barriers to green investments.
2. Address investment and government expenditure priorities in greening sectors: this should be done for many reasons:

- Quick respond to non-sustainable assets and systems depletion, or natural capital losses which is considered as the main income stream for many people.
- Guarantee the creation of green infrastructure and technologies.
- Promote the green industries which create more jobs and better development on the long term.

3. Limiting the government expenditure in natural capital depleting sectors.
4. Use the tax and market-based tools to create the awareness of green investment and innovation.
5. Invest in capacity building, training and education.
6. Promote international governance.

This research also overviewed the success story of Morocco, Algeria, UAE and Jordan towards green economy.

Morocco Success story: started with developing legislative framework, with green investment plan. The greening process included many sectors.

The legislative framework was the first step towards the sustainable development by considering the green economy in article (18).

The sectors included in this transition was: solar energy, wind energy, irrigation water, energy efficiency in industrial and transportation, municipal solid waste, wastewater treatment.

The Jordanian experience objectives were to raise the revenues by 1.3 billion JOD, creation of 50 thousand job opportunity, and enhance the resource management in Jordan over 10 years.

The development included seven main sectors: energy, transportation, water, waste management, agriculture, eco-tourism, and environment.

The Emirates experience was different by addressing many initiatives, conferences, and national strategies toward green economy. Started with considering green economy in Masdar City (the green city) in Abu Dhabi, Masdar City is the first city designed to

target zero carbon, depending on solar energy and other renewable resources. Also in 2012 UAE adopted the "Green Development Emirates Strategy" to promote green economy aims to mark UAE as on of the best countries in the world by 2021. Emirate considering green economy as a tool to promote economic competitiveness, creating more jobs, attracting investment, support innovation and knowledge, and enhance water and energy security.

Algeria initiated many reforms aim to enhance the economy, enhance business climate, enhance energy security, protect the environment and develop green economy sectors.

The development included updating the economic infrastructure, investment in green economy main sectors; agriculture, water, waste recycling and recovery, industry and tourism.

Earlier in 2022 Algeria developed the environment and sustainable development national strategy and other regulations in regards.

Table (2) below summarizes the sectors were considered in each experience:

Table 2: Research summary

Sector/Country	**Morocco**	**Algeria**	**Jordan**	**UAE**
Energy	√	√	√	√
Water	√	√	√	√
Transportation	√		√	
Solid Waste	√	√	√	
Wastewater	√			√
Agriculture		√	√	

Eco-tourism		√	√	

This study recommended the following for the transition to green economy in Arab Regions:

1. Facilitate the investment climate in the Arab countries.
2. Develop economic tools and models to estimate the transition towards green economy.
3. Creation of enabling conditions by developing and activating legislative framework considering green economy challenges.
4. Develop economic and financial mechanisms suit priorities in the country, for example, energy efficiency.
5. Use the research outputs and promote research programs.
6. Develop environmental taxation system.
7. Enhance small and medium organization support mechanisms.
8. Develop green jobs guidebook.
9. Develop green economy indicators
10. Creation of regional committee to share experiences in the sector.

This report aims to advocate a development model, which creates the basic of green economy that contributes to economic development, social equity, and environmental sustainability. Resulting in addressing many issues in the region such as poverty, unemployment, and unsecure water, food and energy. The report pointed to the process of "transitioning to a green economy" requires a fundamental review and re-design of policies. The report including list of eight priorities to be considered in policies review and re-design: Agriculture, Water, Energy, industry, Transportation, cities and buildings, waste management, and tourism. This transition in not a one-time event, rather it should be achieved by both top-down and bottom-up perceptions (Arab Forum for Environment and Development, 2011).

ESCWA in this report considered the green economy is a win-win solution for poverty, unemployment and environmental issues. However, transition to green economy may be challenged by limited knowledge and awareness, gaps in policy and regulations, limited financial incentives for green initiatives, and related skills.

Benefiting from green economy opportunities requires working on key issues including policies & strategies, private sector involvement, best practices by experience/knowledge exchange, strengthen the role of civil society, innovation and research support, and share initiatives and success stories.

Success stories and initiatives from seven different sectors were shared in this booklet, including renewable energy, energy efficiency, sustainable transport, green building, sustainable tourism, sustainable agriculture, and waste management. However, among seven success stories and seven initiatives/programs, only one Palestinian initiative was mentioned in this booklet discussing the job creation in construction sector in Gaza Strip (ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA (ESCWA), 2013).

The reporter in this essay introduced with the basic concept that the green economy cannot replace the sustainable development, in fact, achieving sustainable development based on reform the economy to green. Also, transition towards green economy is not one step, rather it is a long-term process needs years and may be decades. It starts with changing economic policies regarding consumption and production patterns, and environmental considerations in products and services sectors. The reporter concludes with the key requirement for transition towards green economy which is the review of governmental policies and re-structure it to encourage the transformation in consumption and production patterns (النصر، 2017).

This study aims to review the current state of investment in Jordan in 2011 and implications for a green economy transition. This study considered the economic, social and environmental challenges in Jordan, identifying the potential sectors for green investment.

The study illustrates that greening the economy in Jordan will result in creating more than 51,000 new jobs and total of JOD 1.321 billion (USD 1.86 billion). The key sectors identified for greening the economy are energy, transport, water use, waste management, agriculture and food, and sustainable tourism. To enable this transition, three items are required including strengthening policies & regulations, fiscal reforms, and financial schemes. The study concludes with recommendations for integrated approach to involve all sections of government with private sector and civil society. The key starting point to produce and adopt green economy is the creation of policy paper (Envision Consulting Group (EnConsult) Jordan, 2011).

Green development also was a crucial part of "Economic Modernization Vision: unleashing potential to build the future" published by Jordanian Government early 2022 for years 2022-2033. The vision strategic pillars were (1) economic development and (2) life quality for citizens (Jordanian Economic Modernisation Vision 2022-2033- Green Economy Report, November 26th, 2022).

The Jordanian Vision included fifteen sectors listed below: (Jordanian Economic Modernisation Vision 2022-2033- Green Economy Report, November 26th, 2022)

1. Information Communication Technology.
2. Retail, Trade and Commerce.
3. Tourism.
4. Agriculture and Food Security.
5. Creative and Culture Industries.
6. Education.
7. Energy Sector
8. Financial Services
9. Green Economy.
10. Healthcare.
11. Manufacturing.
12. Mining Sector.
13. Transport, Logistics and Mobility.

14. Urban Development.
15. Water.

For Green Economy Sector, there was 20 enablers to achieve the expected strategic development ambitions: (Jordanian Economic Modernisation Vision 2022-2033- Green Economy Report, November 26th, 2022)

1. Alignment of institutional structure and capabilities: aiming to achieve transformation of institutional framework in order to strengthen he role of Ministry of Environment and the integration of climate change and green economy in other sectors.
2. Linking Jordan's green investment opportunities to the national investment priorities: aims to close the cooperation and coordination between relevant ministries in order to identify, assess, and attract funding for green projects.
3. Jordan Green Jobs: relates to national green employability strategic and implementation plan across economic sectors and value chains.
4. Regional hub for green entrepreneurship and innovation: including the establishment of regional testbed and hub for regional green innovations that attractive for local and international investors.
5. Nationwide resource efficiency program: systematic enhancement of resource usage to improve Jordan's economic productivity and to turn Jordan to regional leader in the sector.
6. National research platform on climate change & disaster resilience: the promotion of Jordan as a regional hub, utilizing required tools.
7. National waste management plan: in order to treat 75% biodegradable waste, develop national hazardous waste management plan, establishing waste management program to attract private sector investments.
8. Renewable energy and energy efficiency: through cleaner energy mix.
9. Sustainable transport system: enhancement of conditions and operations for sustainable transport through legal, technological and financial frameworks.

10. Circular economy practices in industrial activities: transition to resource efficiency and cleaner production in industrial sector.
11. Sustainable water management: promoting efficient and sustainable use of water resources.
12. Eco-tourism and agri-tourism destination: leading regional destination.
13. Jordan climate smart agriculture: to ta eth leadership in innovation-led climate smart agriculture.
14. Jordan 10 million tree: towards green large areas across the country.
15. Jordan specific green urban concepts: development of smart and sustainable neighborhoods (resource-efficient) and integrate green elements into land-use master planning.
16. Integrate green elements into land-use master planning: develop land use management plan and carry out strategic environmental assessment to guide land use planning.
17. Net-Zero buildings: increase energy efficiency in buildings for better performance and water saving measures in households.
18. Rural-to-urban migration management: even distribution and accessibility to services with rural and urban areas.
19. Biodiversity and natural habitats: expanding national protected areas.
20. Nexus concept integration: to maximize green and climate responsive growth output and benefit, in addition to develop interconnection between sectors.

2.4 Palestinian Transition towards Green Economy

Limited number of studies and researches discussed the transition of Palestinian economy towards sustainability.

The Palestinian Government adopted the commitment to Sustainable Development Goals 2030 (SDGs), and cooperation with stakeholders on both the national and international levels to achieve these goals. A national team was established comprising governmental, civil society organizations and private sector to coordinate the efforts

aim to follow-up and implementation of SDGs. In 2018, Palestinian Authority reported the national voluntary review on the implementation of 2030 Agenda. However, the report included the challenges facing each goal as follows (دولة فلسطين، 2018):

1. SDG Goal 8: Decent work and economic growth.

   For economic growth approach, the main challenge is the Israeli control over the Palestinian Natural resources in West Bank, including, but not limited to, groundwater, agricultural land, oil, natural gas, and Dead Sea minerals. In addition to the movement restriction by the Israeli occupation.

2. SDG Goal 12: Responsible Consumption and Production.

   For waste management approach, the main challenge is that all land that could be implemented in the waste management facilities is located in Area C. However, the Palestinian government have set sustainable production and consumption strategy to promote sustainable agriculture and eco-tourism, also included the polluter pays principle in the environmental law.

However, Israeli control over economic activities in Palestine can be an opportunity to invest in our resources and enhance the green practices in the industry. For example, utilize the waste from different industries and residential buildings, and enhance the efficiency of resource consumption for industrial activities.

Palestinian Environmental Quality Authority already has some policies towards green economy, e.g. Environmental Impact Assessment Policy (EIA), and Solid Waste Management strategy. However, no policies yet are related directly to green economy (سلطة جودة البيئة الفلسطينية، 2020).

Abu Elayan in this research aims to study the verify the green economy role in achieving sustainable development in the light of UN goals, represented by economic growth, job creation, and reduction of poverty, unemployment, and natural resources depletion. The researcher aims to analyze and interpret the relationship between green economy and economic growth and unemployment in 2015, for 80 countries, including developing and developed countries, using 4 main dimensions; leadership & climate, efficiency, market and green investments, and environment and natural capital.

Green economy was the most recent tool towards the sustainable development, raised after the financial crisis in 2008 developing practical tools to achieve the sustainable development with practical solutions for some problems like poverty, unemployment, and resources depletion taking into account sustaining economic growth.

All reviewed researches in this study agreed with the main benefits of green economy for economic, environmental and social aspects, emphasizing the importance of balancing economic growth with natural resources sustainability concerning the future generations rights. Many reviewed researches recommended adopting integrated, applicable and realistic green economy strategies that comply with international standards and agreements.

This study concluded with two main challenges facing green economy in Palestine; Israeli occupation and weak institutional framework. The later was explained by the lack application of strategies due to lack of fund and absence of geographical integration.

The researched targeted three types of recommendation; governmental sector, private (business) sector, and international organizations. For governmental sector, recommendations were to prioritize the green economy in the governmental agenda, green procurement adoption, creation of green economy organization, include GE data and indicators in Statistics, set of regulatory and legal frameworks towards GE, change the taxing system to adapt with GE concept, introduce GE concepts in the curriculum, and empower youth green initiatives. For private sector, the adoption of green initiatives was recommended which will be reflected on cost reduction and targeting new markets. And finally for the international organizations were recommended to establish more specific GE indicators, establish integrated GE indicators on the international level, set green international account frameworks, and multi-resource fun provision for green initiatives (أبو عليان، 2017).

Chapter Three: Methodology

Primary, qualitative and descriptive approaches were considered in this research, based on data from local experts, related decision makers, and local business owners. In addition to local policies and regulation analysis published by three main public organizations works related to environment; EQA, PENRA, and PWA.

The thesis methodology can be described by four main steps, summarized in Figure (4):

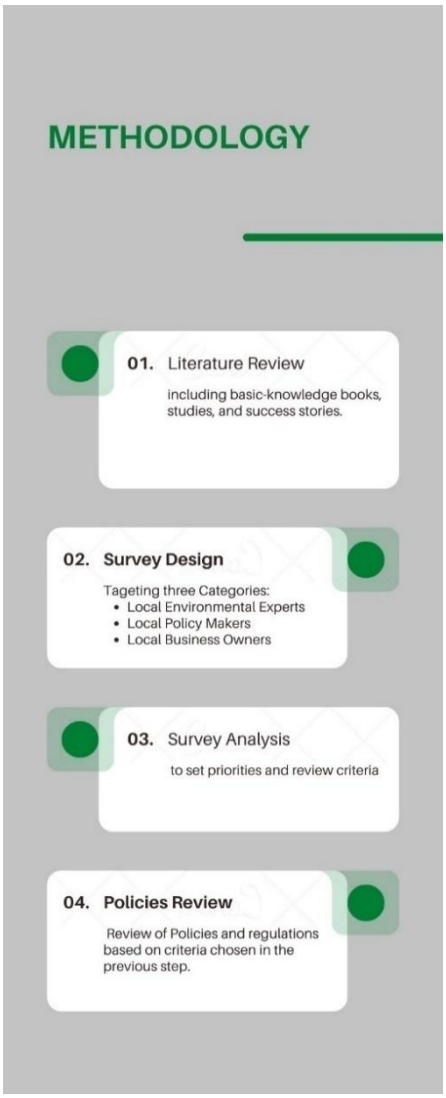

Figure 4: Methodology

1. The main topics related to green economy concept and definition, supporting policies, challenges were figured out through literature review; including basic-knowledge books, studies, and success stories.
2. Interviews were conducted with the main organization related to policy making and/or green building in Palestine. The list of interviewed in Annex 7
3. Three types of surveys were designed targeting three categories; local environmental experts, local policy makers (organizations), and local business owners (the surveys detailed in Annex 1, 2 and 3 respectively).
    a. Local environmental experts survey aims to highlight the main definition of green economy, since there is no agreed-upon definition of GE and according to UNEP guidance greening the economy depends on the national environmental issues and challenges. Again, survey questions were based on the literature review. 40 responses were collected and analyzed in order to come up with Palestinian context-related green economy definition, local priorities, and challenges. The outcome of this survey also included the review criteria of policies & regulations (from section b) to achieve the gap analysis. Annex 4 illustrates the responses. The survey target groups were including experts from public governmental sector (25.6%), Academic sector (20.5%), private business sector (10.2%), and civil society sector (30.7%). In addition to currently unemployed experts (12.8%).
    b. Local policy makers survey targeted corporates in order to highlight the available policies and regulations in parallel to the experts' survey. the selected organizations (EQA, PENRA, and PWA) were based on the results from previous survey and literature review. The outcome of this survey was to list the policies and regulations to be analyzed from EQA, PENRA, and PWA. Annex 5 illustrates the responses.
    c. Business owners' survey aims to collect feedback regarding challenges facing local business. 9 responses were collected from business owners including import/export, real estate/building, industrial, services and food industries. Annex 6 illustrates the responses.

4. The three categories of surveys were analyzed using Google forms analytical tool. The main outcomes from each survey are listed below:
    a. Local policy makers: This survey targeted local policy makers organizations to address the available policies, regulations and/or laws to be reviewed by the researcher. These organizations are Palestinian Environmental Quality Authority (EQA), Palestinian Energy and Natural Resources Authority (PENRA), and Palestinian Water Authority (PWA). The policies listed in Table (4).
    b. Local experts Survey: The outcome from this survey was addressing both priorities and review criteria for the selected policies and regulations highlighted from Local Policy Makers survey (previous point). The survey results, using Google Forms, highlighted the need to review policies and regulations based on their contribution to transition toward "low carbon" and "resource efficient" economy.
5. Policies and regulations of the three organization were reviewed based on the criteria mentioned above. List of policies and regulations in Table (4).

Chapter Four: Results and Discussion

4.1. Main Concepts and Definitions as Perceived by the Palestinian Experts and Policy Makers

During and after analysis of Professionals' survey that targeted the Palestinian Environmental Experts, four topics were considered as the main concepts related to green economy (in their opinion) which are -respectively- low carbon economy, sustainable energy-based economy, low air pollutants emissions, and solid waste recycling. Priorities summarized in Figure (5) below.

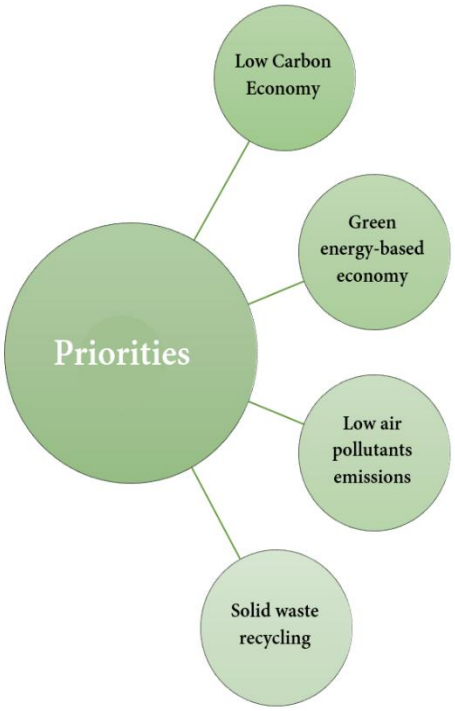

Figure 5: Priorities Summary

Back to green economy definition addressed by the United Nations Environmental Program (UNEP, 2014) which considers three pillars of green economy, these pillars are:

1. Low carbon.
2. Resource efficiency.
3. And social inclusiveness.

Accordingly, we can see the similarity between UNEP definition and local professionals' definition of green economy priorities. However, in the context of this study we are focusing on the environmental pillars of the green economy, which are:

1. Low carbon.
2. Resource efficiency.

Considering the environmental aspects of green economy would be the main **review criteria** in this thesis.

Policies and regulation set by the three environmental-related organizations will be analyzed in this research, these organizations are:

1. Environmental Quality Authority (EQA).
2. Palestinian Energy and Natural Resources Authority (PENRA).
3. And Palestinian Water Authority (PWA).

The Experts survey aims to address how close is the Palestinian economy to green economic aspects. the experts' point of view was considered in some part. However, 20% of Palestinian Environmental Experts see that we are moderately close to green economy. 47.5% which is the higher percentage of these experts express their opinion that Palestinian economy is distant from green economy, and 32.5% see that local economy is very distant from it.

Also, the survey aimed to determine the process towards achieving green economy in Palestine, and in order to know the "How" to achieve the green economy in Palestine, Experts were asked to determine areas of priorities of green economy-related concepts. Respectively, the priorities determined by the survey results are listed as follows:

1. Pollution reduction from wastewater sector was the priority.
2. Water efficiency in industrial sector

3. Energy efficiency in industrial sector and dependency on renewable energy sources
4. Cleaner production and/or environmentally friendly practices.
5. Raw material consumption efficiency
6. Waste recycling
7. Low air pollution based-economy
8. Green areas and control of desertification
9. Organic products/materials
10. Low carbon-based economy
11. Sustainable buildings and cities (built-environment).

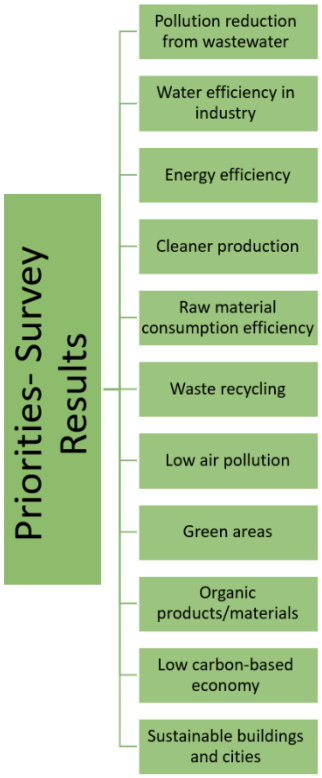

Figure 6: Priorities based on survey results.

The priorities to be applied based on the ease of application in the Palestinian context (easiest to hardest, respectively) are described below:

Firstly: energy efficiency in industrial sector, dependency on renewable energy sources, waste recycling, and cleaner production and/or environmentally friendly practices (same rating).

Secondly: Water efficiency in industrial sector.

Thirdly: Raw material consumption efficiency and Pollution reduction from wastewater.

Fourthly: Organic products/materials.

Fifthly: Green areas and control of desertification.

Sixthly: Low air pollution based-economy.

Seventhly: Low carbon-based economy and Sustainable buildings and cities (built-environment).

Regarding the available supporters for each green economy indicator, it was listed in the Table 3. The table illustrates number of votes for each indicator in terms of supporter, for example, 17 votes considering the presence of low carbon-based economy principles in the local policies.

Accordingly, for local policies, as shown in Table 3, 25 votes see that pollution reduction from wastewater sector policies are supporting the green economy in local policies, and 24 votes for the availability of green areas and desertification in local policies, this is an indication of the availability of known-policies but the lack of application if the issue.

Table shows that 23 experts considering the availability of water efficiency in industrial sector aspects in the local policies, while 21 of them admitted that cleaner production practices in the same sector are addressed in Palestinian policies.

In the opinion of the Palestinian experts, green buildings & cities and low air pollution regulations are similar in the availability in the local policies, the survey showed 20 and 19 votes for the two indicators respectively.

Considering waste prevention and recycling issues, experts express the weak availability of these two issues in Palestinian policies; survey results indicated that only 16 and 15 votes supported the presence of these two policies in Palestine (respectively).

Palestinians depend on the energy imported from Israeli side; however, this can be explained by the 14 votes considering the supporting-policies dependency on renewable energy in Palestine.

However, the energy efficiency in industrial sector has the least number of votes, with 13 experts only can see this issue in Palestinian policies. It is clear that incentive system supporters get the least number of votes by experts in the survey, which indicates their disappointment at this part of the transition process, it can indicate that we have already poor incentive environment in Palestine.

For incentive systems in Palestine, experts voted for organic products/materials and waste recycling as the most important supporter for local incentives towards green economy. Both indicators get 18 votes from the experts in the survey.

17 experts consider the availability of local incentives supporting dependency on renewable energy sources, which is a relatively high number of votes for such a critical issue in the Palestinian context.

In the same field, cleaner production and greener industrial practices were believed in their presence in the Palestinian incentive systems, however, 15 experts considered this as shown in the survey results detailed in the table below.

Four indicators were considered equally in the experts' opinion as seems in the survey results, all four indicators get 10 votes from local experts, these indicators are:

- Water efficiency in industrial sector.
- Raw material consumption efficiency.
- Sustainable cities and buildings (green built-environment).
- Green areas and controls of desertification.

The survey also discussed the available local capabilities, including capacities, knowledge and economic capability. Many indicators in regards were considered by the experts.

However, local capabilities generally had the greatest number of votes in the survey by local experts, which can indicate that local market is rich of built capacities and knowledge!

Starting with the most voted indicator which is energy efficiency in industrial sectors, 26 experts believed that this requirement is being supported already in Palestine and we have many investments.

Both dependency on renewable energy sources and raw material consumption efficiency have 24 votes by the experts, which is relatively high.

Also, water efficiency in industrial sector also had relatively high number of votes in the context of local capabilities, which was 23 votes by the experts.

Experts see that waste recycling is relatively supported in terms of capabilities; 21 votes were resulted in the survey for this point.

In terms of built-capabilities, 19 experts expressed their believe in the presence of capacities and knowledge of green buildings and sustainable cities.

Local built-capabilities included also organic products/materials and green areas & control of desertification. However, both indicators get 18 votes in terms of available capacities and knowledge.

Cleaner production and wastewater pollution reduction indicators were voted for as fields with almost rich supporting local capacities, both indicators have 17 experts see their availability in Palestinian context.

Local experts expressed their disappointment at both low air pollution-based economy and low carbon-based economy indicators in terms of local capacities, the two indicators get 15 and 14 votes respectively.

The survey results indicated also the challenges facing transition towards green economy in Palestine. These challenges are listed below based on their contribution to the absence of green economy -from higher contribution to lower:

1. High production of waste and absence of recycling strategies.
2. Limited regulations/incentives for water efficiency.
3. Limited regulation/incentives for energy efficiency.
4. Limited regulations/taxes on air pollutants.
5. Low raw material efficiency and pollutants in wastewater.
6. Limited regulation/taxes on carbon.
7. Unclear production.
8. Dependency on non-renewable energy sources.
9. Non-sustainable buildings and cities.
10. Desertification and limited green areas.
11. And lack of organic products/materials.

Table 3: Supporter and green economy indicators

Supporter/Indicator	Low carbon-based economy	Energy efficiency in industrial sector	Water efficiency in industrial sector	Dependency on renewable energy sources	Low air pollution based-economy	Waste recycling	Raw material consumption efficiency	Sustainable buildings and cities (built-environment).	Cleaner production and/or environmentally friendly practices	Organic products/ materials	Green areas and control of desertification	Pollution reduction from wastewater sector
Local policies	**17 (votes)**	**13**	**23**	**14**	**19**	**15**	**16**	**20**	**21**	**14**	**24**	**25**
Incentive system	**9**	**8**	**10**	**17**	**8**	**18**	**10**	**10**	**15**	**18**	**10**	**13**
Local capabilities (capacities, knowledge and economic capability)	**14**	**26**	**23**	**24**	**15**	**21**	**24**	**19**	**17**	**18**	**18**	**17**

4.2. Existing Palestinian Policies Pertaining Green Economy

Table 4 illustrates the list of policies and regulations to be reviewed in this research. As discussed previously, the first step toward green economy is the legal environment starting with local policies, strategies, etc. within the Palestinian context, the availability of legal framework and/environment is on the ground since 1999. However, lack of implementation of these regulations is the main issue in our case. More details are discussed in 4.3.

4.2.1 Environmental Quality Authority Policies

4.2.1.1 Environmental Law (No.7) 1999 (1999 ،سلطة جودة البيئة الفلسطينية)

This Palestinian Environment Law aims to:

1. Protect the environment from all forms of pollution.
2. Protect the public health and social welfare.
3. Integrate environmental protection measures in economic and social development plans, and enhance the sustainable development for biological resources with consideration of future generations rights.
4. Protect biodiversity and high-sensitive environmental areas, with environmentally-harmed areas improvement.
5. Promote environmental data collection and publishing in order to enhance the public awareness in regards.

4.2.1.2 Environmental Cross-sectoral Strategy ،سلطة جودة البيئة الفلسطينية)

(2020

Palestinian Environmental Quality Authority, in cooperation with partners, issued the cross-sectoral strategy for the years 2017-2022, addressed the strategic goals and policies consisting with National Policies Agenda and Sustainable Development Goals 2030. This strategy aims to:

1. Low and controlled environmental pollution levels.

2. Sustainably protected and managed natural environment and biodiversity.
3. Taken and adopted mitigation measures for effects of climate change, desertification, responses to environmental disaster and emergencies.
4. Update, activated, and integrated environmental legislative framework, with empowered and efficient environmental institutional framework, and strengthen international cooperation.
5. Enhanced and mainstreamed awareness, knowledge, and environmental attitudes.

4.2.1.3 Environmental Awareness and Media Strategy 2021-2030 (سلطة جودة البيئة، 2021)

This strategy comes in the context of permanent development of environmental awareness and education, as a result of social, economic and political changes creating new environmental challenges in Palestine, forces us to learn from the lessons in implementing the previous plans, and to keep updated with recent international concern, including but not limited to, green economy and climate change mitigations. The strategic goals of this Strategy:

1. Review of strategic goals to go along with recent updated in economic, social and political contexts, based and aligned with National Policies Agenda.
2. To go along with international references and environmental policies as a reference, especially sustainable development goals 2030 and Paris Agreement.
3. To go along with National policies led by Environmental Quality Authority (EQA).

4.2.1.4 Climate Change Adaptation Strategy and Program of Action for the Palestinian Authority 2010 (Palestinian Environmental Quality Authority, 2010)

The main objectives of this strategy are:

1. Summary of vulnerability assessment findings and future climate risks assessment in Palestine.
2. Determine the consultation process by which Adaptation strategy and actions program were developed.
3. Identification of key adaptation needs for Palestine.
4. Identification of priority adaptation measure for Palestine.
5. Recommend mainstreaming of climate change adaptation in Palestine.

4.2.1.5 Cabinet Decision No. 25 for Environmental Requirements of Stone and Marble Cutting Stations, Tile and Concrete Stations (2010 ،سلطة جودة البيئة)

This decision was targeting all industrial facilities in the stone and marble industry. Addressing the process of Environmental approval for each facility, following Environmental Law articles.

4.2.1.6 Interim Action Plan for Hazardous Waste Management in the Palestinian Territory (Environmental Quality Authority, 2011)

This action plan was prepared as part of framework of 2nd phase of National Strategy of Solid Waste Management in Palestine 2010-2014. Preparation team was led by Environmental Quality Authority (EQA), composed of Ministry of Local governance (MoLG), Palestinian Ministry of National Economy (MoNE), Ministry of Health (MoH), Ministry of Agriculture (MoA), and Palestinian Water Authority (PWA).

4.2.1 Palestinian Energy and Natural Resources Authority (PENRA)

4.2.1.1 Energy Efficient Buildings Code (وزارة الحكم المحلي، 2004)

The main objective of this code was to satisfy the need for Palestinian citizen by enhance the development of the society. Starting with energy saving in buildings, enhance the comfort within these buildings, open-up of investments in building material industry, replacing imported energy which enhances the Palestinian economy, raise the awareness of energy efficiency in private sector, transfer the regional and international experience to local market, and build the capacities to apply this code.

4.2.1.2 Renewable Energy and Energy Efficiency Law (2015) (دولة فلسطين، 2015)

The main objectives of this law were:

1. Promote renewable energy resources.
2. Energy saving through high-efficient use.
3. Promote local production of high-energy-efficient equipment.

4.2.2 Palestinian Water Authority (PWA)

4.2.2.1 Water Awareness Strategy (Palestinian Water Authority, 2016a)

This strategy was developed to be used as a basis for developing national specific implementation plans by Palestinian water sector organizations. This strategy will assist all stakeholders in creation and/or development of awareness programs and/or activities.

4.2.2.2 Water Reform Plan 2016-2018 (Palestinian Water Authority, 2016b)

This plan was developed to lay out the actions and targets of key Palestinian water actors to implement the sector reform.

Table 4: Palestinian Policies and/or Regulations Summary

No.	Organization	Policy/Regulation	Summary
1	**Environmental Quality Authority (EQA)**	Environmental Law (No.7) 1999 (سلطة جودة البيئة الفلسطينية، 1999)	This law was promulgated in 1999 by Palestinian Authority to protect the environment and public health through the introduction of environmental protection measures in social & economic development plans while protecting biodiversity and sensitive areas and raise public awareness of environmental issues.
2		Environmental Cross-sectoral strategy (سلطة جودة البيئة الفلسطينية، 2020)	This strategy for 2017-2022 aims to achieve the vision towards "clean protected environment" through controlled and limited pollution levels, sustainable natural environment and biodiversity, climate change adaptation measures, updated, integrated, and active legislative environmental system, in addition to enhanced environmental awareness and knowledge.
3		Environmental Awareness and Media Strategy 2021-2030 (سلطة جودة البيئة، 2021)	This strategy was published as a response to social, economic and political changes in the Palestinian context in the light of new trends and concerns like green economy, climate change, and single use of Plastic.

4		Climate Change Adaptation Strategy and Program of Action for the Palestinian Authority 2010 (Palestinian Environmental Quality Authority, 2010)	According to Palestinian Authority commitment to Paris Agreement, plan was reported by EQA to provide historic trends in climate in Palestine, prioritize climate-related issues, prediction of climate-scenarios, identification of adaptation options, future development requirements, monitoring and evaluation, and Next steps in the context.
5		Cabinet Decision No. 25 for Environmental Requirements of Stone and Marble Cutting Stations, Tile and Concrete	The provisions of this regulation target each of marble & stone cutting stations, tile, concrete factories on the Palestinian lands, according to its polluting activities.

		Stations سلطة) (2010 جودة البيئة،	
6		Interim Action Plan for Hazardous Waste Management in the Palestinian Territory (Environmental Quality Authority, 2011)	This is part of solid waste management strategy in Palestinian Territories, including short term action plan for hazardous waste to reduce its risks on health and environment.
7	**Palestinian Energy and Natural Resources**	Energy Efficient Buildings Code (وزارة الحكم المحلي، 2004	The main goal of this code is to cope with international concerns of energy saving, in addition to improve quality of life of Palestinians in the light of limited access to sources, which will be reflected positively on the local economy.

8	**Authority (PENRA)**	Renewable Energy and Energy Efficiency Law (2015) (دولة فلسطين، 2015)	This law was promulgated in order to promote development and utilization of renewable energy sources, energy saving thorough optimal use in different sectors, and promote local manufacturing and use of equipment for energy use.
9	**Palestinian Water Authority (PWA)**	Water Awareness Strategy (Palestinian Water Authority, 2016)	This strategy was considered as the basic for developing national specific implementation plans by Palestinian water sector organizations.
10		Water and Wastewater National sectorial Strategy (سلطة المياه الفلسطينية، 2010)	This strategy was developed as a response to the limitations and conflict of multi-organizations in water sector in Palestine, which are contribute to poor infrastructure and access to resources, based on current situation.

11		Water Reform Plan 2016-2018 (Palestinian Water Authority, 2016)	The reform plan aims to establish and activate a better effective water governance system, in addition to improve water management mechanisms.

4.3. Gap Analysis of Current Green Economy Policies

This part of the research identifies the weaknesses/gaps of the existing policies, and evaluates them against a number of criteria or indicators.

4.3.1. Environmental Quality Authority (EQA)

There are 6 laws, legislations published by EQA since establishment. Below is a detailed analysis of each document. Every detail related to carbon reduction or resource efficiency is considered in strength section. However, weakness section includes criticism in the same area of interests.

4.3.1.1.Environmental Law 1999

Strength

- 6 articles aimed to reduce carbon emissions:
- article (19): the Authority determines with related organizations the standards of air pollutants which may harm the public health, quality of life or the environment.
- Article (20): one of safety conditions in facilities/firms is the protection from air pollutants inside and outside.
- Article (22): prohibition the use of any equipment produces non-compliance with Palestinian standards.
- Article (3) of EIA policy: the strategy aims to create a development that consider environmental issues.
- Article (19) of EIA policy: the business/project owner is bound to the following legal provisions: Palestinian standards of air pollutants and standards of surrounding air pollutants.
- Regarding resource efficiency, the following points were considered in the law:

- Goal #3 of the law is to involve environmental protection basics in social and economic development plans and to encourage sustainable development of resources in which protect the rights of upcoming generations.
- The law guarantees the protection of local natural resources and economic sources, in addition to protect the historical and cultural heritage without harming nor raising of side effects on life qualities and ecosystems result from industrial, agricultural or construction activities.
- Article (8) include the encourage to solid waste reduction and reuse.
- Article (29) include the coordination with related authorities to treat and reuse wastewater and stormwater.
- The 2nd attachment of EIA Policy recognized that screening phase of project will be based on "the exploitation of any natural resource in which that it negatively affects other uses of the resource".
- Article (11) of stone and marble policy include the establishment of reuse and primary treatment of industrial wastewater.

Weakness

- The water pollutants are not clear in environmental law.
- In article (20) of law, safety conditions are not clear nor attached
- Environmental considerations are not clear in Article (3) of EIA policy.
- ToR of EIA policy is not clear.

4.3.1.2.Environmental Cross-sectoral Strategy

The updated version of this strategy is published in 2020, targeting the years 2020-2023. It was published in cooperation with public sector, civil society, private sector and academic organizations.

Strength

Carbon reduction:

- The strategy including 5 main goals, 2 of it targeting carbon reduction: Goal#1 includes working towards the low and controlled environmental pollution levels, and Goal #3 provides for the adaptation measures of climate change and Green-House-Gases reduction.
- Result #9 of strategic goal#1 provides of increase of quality and quantity of available water, included the increase of harvested stormwater as a non-conventional water resource, which is one of the recommended adaptation contributions to climate change that increase the available water for agricultural purposes.
- Strategic Goal#3 provides of the adaptation measures of climate change, desertification control, and environmental emergencies. Including per capita CO_2 emissions, renewable energy per produced electrical energy percentage, and renewable energy per produced energy percentage. However, this goal highlighted that Palestine (as a developing country) is producing a low CO_2 per capita, however, Palestinian plans considering both adaptation and mitigation with climate change.
- Result #15 of Goal#3 considered the dependency on renewable energy is one of the main trends that goes with environmental protection and climate change mitigation, either the renewable energy is around 14% of produced energy.
- Result #16 of goal#3 aims to reduce energy losses in distribution network, knowing that the losses were reduced from 22% to 20% between 2016 and 2018.
- Result #20 of goal #3 considered energy saving is one of the main issues to energy availability.
- Goal #2 included increase in number of energy-audited facilities/sites. Also the number of facilities/buildings applying the concepts of green buildings is 10 in 2022.

Resource efficiency:

- Strategic Goal #1 provides of low and controlled environmental pollution levels, including recycled waste (6% in 2019). This goal contributes to resource efficiency, the goal is to reach 30% by 2022. The expected result #4 is water distribution efficiency, aiming to reduce the losses from water distribution systems (which ranges between 31 to 32%).
- Also, expected result#7 of Goal#1 aims to reach a safe traffic environment; since the transport system is a main source of air pollution in Palestine. This goal including the prevention of the increase in quality and quantity of emissions from this sector.
- The same goal contains targeting 25 industrial facilities applying sustainable consumption and production concept.
- Strategic Goal #2 provides of protected the sustainable managed natural environment and biodiversity, including harvested stormwater, reused wastewater for irrigation purposes, agricultural areas irrigated with treated wastewater.
- Goal #2 included 40 agricultural projects considering sustainable consumption and production concepts.

Weakness

- Result #7 of Goal#1 regarding safe traffic environment, targeting 120 authorized eco-friendly vehicles/automobiles by the year 2022.Howeverm this is a very limited number comparing with targeting 160,000 vehicles/automobiles will be monitored (exhaust)
- Result #16 didn't mention any target of energy in distribution networks, nor the normal/average percentage.
- Targeting 40 agricultural sustainable projects is a very limited number, in the light of solid waste issues, limited irrigation water, and limited access to

pesticides because of the Israeli restrictions. Environmental farming can solve all these problems in one step!

- Increasing number of energy-audited facilities is great, but no exact number of target number in the strategy.
- Goal#4 included increase number of certified industries with green measures, including ISO 14001, to 5 industries by 2022.

4.3.1.3.Environmental Awareness and Media Strategy

This strategy for 2021-2030 aims to cope with international trending concerns like green economy, climate change mitigation, and single-use plastic. One of the main scopes of the strategy is promoting green economy.

One of the interventions for active media that contributes to raise awareness and environmental behavior is conducting specialized trainings like green economy.

Strength

- Strategic goal #2 provides of creative of educational concepts to solve environmental issues, one of the main policies is the integration of environment, green economy, and environmental justice concepts within university curriculums.
- Strategic goal #4 provides of elite environmental values and into the line with international agreements, one of the main policies is to involve the community into green economy and climate mitigation measures. This goal also included train local community to climate adaptation activities.
- Strategic goal #5 economic and social development respects the next generations rights, the depends on the focus on green business and green economy.

Carbon reduction

- The scope of the strategy including the intersection with SDG#13 "climate actions".

- The main priorities including clean energy and monitoring of pollutants specially vehicles exhaust.
- The strategy recommended to promote and encourage the clean energy projects, and promotion of climate mitigation measures specially in agricultural areas.

Resource efficiency

The scope of the strategy including the intersection with SDG#12 "responsible consumption and production".

4.3.1.4. Climate Change Adaptation Strategy and Program of Action for the Palestinian Authority

This strategy focuses on the proactive adaptations (planned) not reactive (after the climate change impact realized).

Strength

- Climate risks include drought and water scarcity, a suggested adaptation strategy was to raise the awareness on water convention techniques for agricultural sector.

Weakness

- The adaptation strategy for agricultural sector regarding drought and water scarcity doesn't include introduction of environmental-agriculture principles, however, the sector consumes 48% of water, while environmental-agriculture can save up to 50% of water.
- Even the adaptation measures were focused on proactive climate actions, it's worth working on the energy saving actions in the light of belligerent occupation by Israel.

4.3.1.5. Cabinet Decision No. 25 in 2010 for Environmental requirements of stone and marble cutting stations, tile and concrete stations.

Strength

Carbon reduction

- Article No.19 issued that the owner is responsible to limit the air pollution resulting from facility activities according to the Palestinian Standard of air pollution from point source, Palestinian standards of surrounding air quality, and installment and operation any required equipment to minimize emissions to surrounding environment.

Resource efficiency

- Article No.10 obligates the owner to take the provisions of solid waste and wastewater. This will affect the resource efficiency for both solid waste and wastewater.
- Article No.11 obligates the owner to establish a system for reuse and primary treatment of wastewater. Which will positively affect the resource efficiency.

Weakness

- The document didn't mention any target nor recycling percentage of any facility.

4.3.1.6. National Adaptation Plan (2016)

Strength

Carbon reduction

- For Energy issues, the Palestinian strategy of Energy was to produce 20% of energy from renewable resource by 2020, which sounds great as a developing country in the light of limited access to resources, compared to14% for Jordan's energy strategy of 2030 (Jordan's Master Strategy for the Energy Sector 2020-2030).

- For Energy sector, it was mentioned that energy efficiency will be implemented to reduce consumption.
- Urban and infrastructure adaptation options included promoting green buildings, which is directly related to CO2 reduction since it's based mainly on energy efficient buildings.
- Agricultural adaptation options included afforestation which is will be directly reflected as CO2 reduction.
- Adaptation options for Energy in West Bank & Gaza Strip included solar energy and energy efficiency.
- Industrial sector in West Bank considered replacement of imported raw materials with local materials, which will contribute in carbon footprint reduction for local industries in a way or another. In addition to energy consumption reduction through modern industrial technologies.

Resource efficiency

- For irrigation water, it was mentioned that irrigation infrastructure is old and inefficient, which is great to mention the main source of the problem, and it was promising to recommend the drip irrigation as a radical solution.
- Agricultural adaptation plans included improvement of water-use efficiency and using alternatives water resources.
- For Industrial sector, energy audits were planned to be conducted in Gaza Strip as a step towards industrial energy efficiency.
- Control of leakage from distribution system as adaptation option in water sector contributes to resource efficiency, in addition to enhance the use of alternative water resources.
- Future development included Digitization of data which will reflected on paper use reduction and resource efficiency.

Weakness

- For energy sector, it was mentioned that energy efficiency will be implemented, but no target was set. Also, it worth targeting to raise the solar heaters use in Palestine since we have a limited access to energy with 300 sunny days, in addition to decrease in this percentage in past few years!
- For Food sector adaptation options, it didn't mention any food waste reduction awareness programs.
- It's not clear of "Improving waste collection system" option including waste minimization. Even "Waste reduction" was mentioned in waste and wastewater adaptation options in West Bank and Gaza Strip.
- This strategy particularly didn't mention promoting water efficiency in the light of droughts, except for agricultural sector. However, it was considered in Gender-supportive projects in Gaza Strip.
- Rain water harvesting was only mentioned as an adaptation option for Gaza Strip.
- It's not clear why improving handling, packaging, and storage techniques for raw material to be exported is mentioned as adaptation opting in Gaza Strip, and why it wasn't mentioned for West Bank industries. Also, energy audits were considered for Gaza strip only.

4.3.1.7. Interim Action Plan for Hazardous Waste (HZW) Management in the Palestinian Territory

Strengths

- This strategy is not contributing to CO2 production, but resource efficiency must be considered here. One of the main pillars of this plan is hazardous waste prevention techniques.
- Mentioned action in the plan was very practical. However, promotion of tax exemption for industrial sector abides with HZW management.

Weaknesses

- The action plan was published in 2011, it's time to update it to cope with new technologies and/or industries in Palestine.
- Mentioning the tax exemption for HZW management applying industries, it would be great if the same concept is applied for hazardous material replacement with safe options.

4.3.2. Palestinian Energy & Natural Resources Authority (PENRA)

- PENRA has two documents; energy efficient building Code, and Renewable Energy & Energy efficiency law of 2015.

4.3.2.1. Energy Efficient Buildings Code

Strength

Carbon reduction

- This code aims to save energy in buildings using thermal design, which will be reflected on CO2 production from energy production.
- Considering multi-building uses in the code is great and tells the aim of the code is to improve the construction industry. Knowing that buildings consume more than 60% of energy in Palestine (PCBS) compared to 35% worldwide (WorldGBC).

Weakness

- Calling it a "Code" is not accurate, since "code" means that it's obligatory to be applied for every Palestinian. Knowing that no single building is up to code.
- It was published in 2004, many changes introduced to the construction industry in the past 17 years. However, it was mentioned in the interviews for this thesis that MoLG is leading working on an updated version of this code in cooperation with related parties.

- One of the main aims of this code was to build the capacities related to the sector, but no single training was conducted regarding this code.
- It's not clear if Jordan valley area is considered in the code calculations (online version didn't show all targeted areas).

4.3.2.2. Renewable Energy and Energy Efficiency Law (2015)

This law is directly related to carbon reduction. Below discussed its contribution to the mentioned issue.

Strength

- The decision aims to promote use and develop renewable energy resources, energy conservation through optimum use in different sectors, and promoting local production of highly efficient energy use equipment.
- Article #4 considered the power of PENRA including put a strategy that aims to improve energy efficiency and renewable energy development, licensing electrical production from renewable resources, preparation of energy saving tools, and accreditation of energy companies for energy audit.
- Article #8 goes with the responsibilities of Research center including procedures and data of energy audit for multi-sectors' facilities, energy label identification, consider energy saving concepts in school curriculum, preparation of trainings in regards of renewable energy and energy efficiency, and recommend regulations in regards of energy efficiency and savings for PENRA.
- Article #18 goes on tax exemption for every renewable energy and energy efficiency systems, devices, equipment, and spares.in addition to electrical production plants from renewable source benefit from Investment promotion law #1 for 1998. This is a great example of integration between organizations.

Weakness

- All energy efficiency regulations and modification didn't consider the obligatory of energy audit for public buildings used for governmental services.
- Article #17 recommended the application of energy saving measures considered **in Energy saving code, which was created 11 years before this law!**

4.3.3. Palestinian Water Authority (PWA)

4.3.3.1. Water Awareness Strategy

Strength

- Strategic objective #3 aims to increase knowledge and advance the importance of water management, and focuses on create the awareness of all target groups towards water management to minimize water losses.
- Primary target audiences are sufficient and includes all related targets.

4.3.3.2.Water and Wastewater National sectorial Strategy

Strength

- 1st strategic goal aims to strengthening the foundation of legal framework to ensure the fair service distribution. Its 2nd policy goes with legal correction regarding water sector through regulate rights and obligations of water resources and treated water.
- 2nd strategic goal targeting the integrated management of water resources to ensure the fair and sustainability of the service and its resources, its 2nd policy is to provide residential areas with suitable water qualities and quantities through rehabilitation of current water systems. In addition to stormwater collection dam construction.
- 3rd strategic goal including integrated management of water to ensure the fair and sustainability of the service and contributing to public health and

environmental protection. Its 2nd policy includes creation of promoting program for farmers towards the use of treated wastewater.

4.3.3.3. Water Reform Plan 2016-2018

This plan provides a guidance for the sector institutions to achieve targets in order to accomplish the objectives, in addition to monitor the sector reform for corrective measures justification. It didn't include any technical parts/instructions.

4.4. Local Capacity for Application of Green Economy

Transition towards green economy in a country may not start from scratch, the are some supporting bases that can be used to build the transition on, for example, local policies, staff, educated and experienced individuals, etc.

Local Expert survey was targeting local environmental experts who has related-scope of work t green energy, the survey aimed to highlight the available and unavailable supporting conditions in terms of green economy transition.

The survey included three main items that available in the local market and can play a key supporting role of green economy transition; (1) local policies, (2) incentive systems, and (3) local capacities (staff, knowledge, economic capacities, etc.).

Almost 35% of votes of experts in the survey were to local capacities as an existing supporting condition, which indicates that we already have local staff, knowledge and capacities that allows us to green economy transition.

4.5. Case Studies

Business survey was targeting different business sectors; import/export, reals estate and buildings, industrial, services, and food sectors.

Both industrial and service sectors took environmental measures in their business which was reflected positively on business economic as detailed below:

Case #1: using green detergents and rodent prevention chemicals helped a service business to minimize the costs.

Case #2: another service sector business sees that efficient consumption of any resources must be positively affect both the environment and economy.

Case #3: as an industrial facility, product quality and accreditation can help improve the competition in the market.

Worth to mention that no single business of 9 responses was punished to not considering environmental measures in their business. This is an indicator of the poor regulation system in Palestine.

No added value to the competitiveness of the product if green measure were applied (in local market), driving local business not to consider green economy practices. Their awareness was clear by only 11% of responses see that green measures added value is higher than measure cost.

4.6 Applicability of Green Economy in the Palestinian Context

This research results indicate that green economy is applicable in the Palestinian context for the following reasons:

1. Availability of core policies and regulations in terms of green economic development in the light of local and regional efforts to adapt climate change and apply sustainable development goals (SDGs). However, advanced regulations and policies needs to be developed and applied
2. Availability of local capacities and experts in terms of green economy and related topics, including but not limited to, economy, climate change, green buildings, etc.
3. The transition towards green economy is a need for Palestinian in the light of limited access to resources and population growth.

Chapter Five: Conclusions and Recommendations

5.1. Conclusions

The main key messages and conclusions derived from this research are:

- The importance of green economy for Palestine is its ability to resilience, accelerate sustainable development and energy consumption efficiency, new job opportunities creation and other environmental, social and economic aspects, in the light of occupation and limited access/control of our natural resources, with the decreasing demography.
- Palestine needs to implement the available -on paper- policies and regulation in terms of green economy, in order to reach the turning point towards green economy, in the steps of green economy transformation international and regional success stories.
- Palestinian professionals and environmental experts consider four topics as the main concepts related to green economy (in their opinion) which are -respectively- low carbon economy, sustainable energy-based economy, low air pollutants emissions, and solid waste recycling. Accordingly, there is similarity between UNEP definition and local professionals' definition of green economy and priorities.
- This research results indicate that green economy is applicable in the Palestinian context for the following reasons: i) availability of basic policies and regulations in terms of green economic development in the light of local and regional efforts to adapt climate change and apply sustainable development goals (SDGs), ii) availability of local capacities and experts in terms of green economy and related topics, including but not limited to, economy, climate change, green buildings, etc, and iii) the transition towards green economy is a need for Palestinian in the light of limited access to resources and population growth.

- The importance of this thesis is to determine what we have and what we don't have in order to achieve the transition (i.e. weaknesses and strengths). For strengths, Palestine have technical capacities, theoretical policies, aware private sector, and the most important one, the need for green economy. For weakness, implementation system of the transition and progress of green economy are missed.

5.2. Recommendations

Based on the research results, the recommendations include both policy makers and future researchers. In the context of policy makers, the researcher recommends the following in order to achieve transition to green economy on the ground:

- **Enhance the regulatory framework:**

Although Palestinian regulatory system is being challenged by the Israeli occupation and other political reasons, which limit the application of local legislations and regulation, the application of policies and laws is a need to ensure the application of these laws and policies. However, the policy creation is the first step toward the transition to green economy but only if applicable on the ground.

- **Green Economy Agreements:**

Learning from tackling climate change lessons in Palestine, it was initiated by the international agreements, for example, Paris Agreement. The same policy can be applied for the transition to green economy in Palestine, by accession to any green economy international and/or regional agreements, this would enhance the Palestinians economy experts to use the available tools and capacities and learning from other success stories.

- **Incentive System Creation:**

Incentive systems had the least number of votes by experts in the survey, and this can indicate the poor incentive environment available in Palestine in terms of green economy. However, creation of incentive system for green industries and/or entrepreneurs, with sufficient promotion can create that trend towards problem-solve

mindset, projects, and initiatives. This can be applied in many sectors, especially in solid waste and water recycling. Also, such an incentive system can be reflected on the local GDP by enhancing and promoting the export of Palestinian goods to new markets, especially markets considering green measures/green economy as a prerequisite, for example, European Union countries.

- **Adoption of online governance:**

Application of online governance services can reduce the paper consumption (waste prevention policy), improve service quality, reduce the required time for governmental procedures. This is applicable after COVID-19 crisis and already applied in many countries in the region.

- **Promote green products/service:**

Many awareness programs are being conducted by many organizations, especially Environmental Quality Authority (EQA). However, promoting for green products/services in the awareness sessions can meet the need for raise the demand for such products/services and enhance its competition in the local market.

- **Green economy Guidance:**

In order to promote green measures in terms of economy to facilitate the transition to green economy, a simple and easy green economy guidance is recommended for business owners.

- **Green Economy Council:**

One of the recommended practices to promote green economy in new markets is to create a community of interested stakeholders. It is recommended to establish green economy council in Palestine to achieve this goal. In addition, this would facilitate access to fund, incentives, and donations towards greener economy.

- **Green Economy Department:**

In order to facilitate the governance of green economy measures and practices in the local market, it is recommended to establish green economy department joint by

Environmental Quality Authority (EQA) with Ministry of Finance and/or Palestinian Ministry of National Economy.

Recommendations for future researchers:

- Potentials to promote Green Economy Post-Covid-19
- Simple guidance towards green economy for Palestinian main products and/or services.
- Conduct needs assessment towards establishment of Green Economy department at EQA in coperation with Ministry o National economy and Ministry of Finance.

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Annexes

Annex (1): Local Environmental Experts Survey.

Annex (2): Local Policy makers Survey.

Annex (3): Local Business owners survey.

Annex (4): Local Environmental Experts Survey responses.

Annex (5): Local Policy makers Survey responses.

Annex (6): Local Business owners survey responses

Annex1 : Local Environmental Experts Survey

المؤسسة التي تعمل بها				
القطاع الحكومي	القطاع الأكاديمي/الجامعات	مشروعي الخاص	مؤسسات المجتمع المدني	لا أعمل
مكان تواجدك				
الضفة الغربية أو القدس	قطاع غزة	خارج الأراضي الفلسطينية		
برأيك ما هي نسبة ارتباط المفاهيم التالية بالاقتصاد الأخضر				
	%25-0	%50-26	51-75%	76-100%
الاقتصاد قليل الانبعاثات الكربونية				
كفاءة الطاقة في القطاع الصناعي				
كفاءة المياه في القطاع الصناعي				
الاعتماد على مصادر الطاقة المتجددة				
الاقتصاد قليل الانبعاثات الملوثة للهواء				
تدوير النفايات				
كفاءة استهلاك المواد الخام				
الأبنية والمدن المستدامة				
الإنتاج النظيف/الممارسات الصديقة للبيئة				
المنتجات العضوية				
المساحات الخضراء والسيطرة على التصحر				

تقليل الملوثات الناتجة في المياه العادمة											
أين ترى الاقتصاد المحلي الفلسطيني من الاقتصاد الأخضر؟											
قريب جداً	قريب			متوسط			بعيد			بعيد جداً	
رتب مؤشرات الاقتصاد الأخضر التالية حسب أولوية تطبيقها في فلسطين (0 غير مهم، 10 مهم جداً)											
رتب مؤشرات الاقتصاد الأخضر التالية حسب سهولة تنفيذها في فلسطين (0 صعب جداً، 10 سهل جداً)											
	0	1	2	3	4	5	6	7	8	9	10
الاقتصاد قليل الانبعاثات الكربونية											
كفاءة الطاقة في القطاع الصناعي											
كفاءة المياه في القطاع الصناعي											
الاعتماد على مصادر الطاقة المتجددة											
الاقتصاد قليل الانبعاثات الملوثة للهواء											
تدوير النفايات											
كفاءة استهلاك المواد الخام											
الأبنية والمدن المستدامة											
الإنتاج النظيف/الممارسات الصديقة للبيئة											
المنتجات العضوية											
المساحات الخضراء والسيطرة على التصحر											
تقليل الملوثات الناتجة في المياه العادمة											

اختر الداعم الموجود حالياً لكل من المؤشرات التالية (يمكنك اختيار أكثر من إجابة)				
	سياسات محلية	نظام حوافز	إمكانيات محلية (كوادر، معرفة، إمكانية اقتصادية وغيرها)	لا أعلم
الاقتصاد قليل الانبعاثات الكربونية				
كفاءة الطاقة في القطاع الصناعي				
كفاءة المياه في القطاع الصناعي				
الاعتماد على مصادر الطاقة المتجددة				
الاقتصاد قليل الانبعاثات الملوثة للهواء				
تدوير النفايات				
كفاءة استهلاك المواد الخام				
الأبنية والمدن المستدامة				
الإنتاج النظيف/الممارسات الصديقة للبيئة				
المنتجات العضوية				
المساحات الخضراء والسيطرة على التصحر				
تقليل الملوثات الناتجة في المياه العادمة				
رتب المعيقات التالية حسب مساهمتها في غياب/محدودية اقتصاد أخضر محلي (0 لا تؤثر، 100 تعيق وجود الاقتصاد الأخضر)				
	%25-0	%50-26	51-75%	76-100%

قلة القوانين/الضرائب على الكربون	
قلة القوانين/الحوافز لكفاءة الطاقة	
قلة القوانين/الحوافز لكفاءة المياه	
الاعتماد على مصادر الطاقة غير المتجددة	
قلة القوانين/الضرائب على انبعاثات ملوثات الهواء	
الإنتاج الكبير من النفايات وقلة تدويرها	
قلة كفاءة استهلاك المواد الخام	
قلة الاستدامة في المدن و/أو الأبنية	
الإنتاج غير النظيف	
قلة المنتجات العضوية	
التصحر ومحدودية المساحات الخضراء	
الملوثات الناتجة في المياه العادمة	
توصيات أخرى لتطبيق الاقتصاد الأخضر في فلسطين	

ANNEX2 : POLICY MAKERS SURVEY

اسم المؤسسة التي تعمل بها (إجابة مفتوحة)				
برأيك ما هي نسبة ارتباط المفاهيم التالية بالاقتصاد الأخضر				
	%25-0	%50-26	%75-51	%100-76
الاقتصاد قليل الانبعاثات الكربونية				
كفاءة الطاقة في القطاع الصناعي				
كفاءة المياه في القطاع الصناعي				
الاعتماد على مصادر الطاقة المتجددة				
الاقتصاد قليل الانبعاثات الملوثة للهواء				
تدوير النفايات				
كفاءة استهلاك المواد الخام				
الأبنية والمدن المستدامة				
الإنتاج النظيف/الممارسات الصديقة للبيئة				
المنتجات العضوية				
المساحات الخضراء والسيطرة على التصحر				
تقليل الملوثات الناتجة في المياه العادمة				
أين ترى الاقتصاد المحلي من الاقتصاد الأخضر؟				
قريب جداً	قريب	متوسط	بعيد	بعيد جداً
اختر الداعم الموجود حالياً لكل من المؤشرات التالية؟ (يمكنك اختيار أكثر من إجابة)				
	سياسات محلية	نظام حوافز	إمكانيات محلية (كوادر/ معرفة/إمكانية اقتصادية وغيرها)	لا أعلم
الاقتصاد قليل الانبعاثات الكربونية				

كفاءة الطاقة في القطاع الصناعي	
كفاءة المياه في القطاع الصناعي	
الاعتماد على مصادر الطاقة المتجددة	
الاقتصاد قليل الانبعاثات الملوثة للهواء	
تدوير النفايات	
كفاءة استهلاك المواد الخام	
الأبنية والمدن المستدامة	
الإنتاج النظيف/الممارسات الصديقة للبيئة	
المنتجات العضوية	
المساحات الخضراء والسيطرة على التصحر	
تقليل الملوثات الناتجة في المياه العادمة	
هل أصدرت مؤسستكم أي سياسات تدعم وجود الاقتصاد الأخضر محلياً؟ إذا كانت الإجابة نعم يرجى توضيح الإجابة (إجابة مفتوحة)	
هل شاركت فلسطين بأي من الحراكات/المؤتمرات/الفعاليات العالمية و/أو الإقليمية التي تدعم الاقتصاد الأخضر؟ إذا كانت الإجابة بنعم يرجى توضيح الإجابة. (إجابة مفتوحة)	
أي ملاحظات أخرى	

ANNEX3 : BUSINESS OWNERS SURVEY

هل واجهت أي عقوبات بخصوص القضايا البيئية؟				
نعم	لا			
إذا كانت الإجابة بنعم، ما هي العقوبة؟				
دفع ضريبة	صعوبة الإجراءات الرسمية لنشاط معين	إتلاف منتجات/حظر تقديم خدمات	دفع غرامات مالية	غير ذلك
إذا كانت الإجابة بنعم، أين يقع السوق المستهدف؟				
الأراضي الفلسطينية	الشرق الأوسط	أوروبا	غير ذلك	
في أي قطاع تعمل؟				
الاستيراد و/أو التصدير	قطاع الأبنية والعقارات	الصناعي	الخدمات	الغذائي
هل تواجه مشكلة في تسويق منتجك لعدم الحصول على شهادات بيئية؟				
نعم	لا			
هل أخذت أي اعتبارات بيئية في نشاطات مشروعك؟ وهل انعكس ذلك إيجاباً على العائد المادي للمشروع؟				
نعم	لا			
إذا كانت الإجابة بنعم أو لا، الرجاء التوضيح (إجابة مفتوحة)				
هل ترى أن التكلفة المالية الناتجة عن اتخاذ المعايير البيئية في مشروعك أعلى من الفوائد المالية العائدة؟				
نعم	لا	لا أعلم		

Annex4 : Results of Environmental Experts Survey (Answers/number of votes highlighted in grey)

المؤسسة التي تعمل بها				
القطاع الحكومي	القطاع الأكاديمي/الجامعات	مشروعي الخاص	مؤسسات المجتمع المدني	لا أعمل
10	**8**	**4**	**12**	**5**

مكان تواجدك		
الضفة الغربية أو القدس	قطاع غزة	خارج الأراضي الفلسطينية
38	**0**	**1**

برأيك ما هي نسبة ارتباط المفاهيم التالية بالاقتصاد الأخضر				
	%25-0	%50-26	51-75%	76-100%
الاقتصاد قليل الانبعاثات الكربونية	**22**	**10**	**6**	**2**
كفاءة الطاقة في القطاع الصناعي	**18**	**14**	**3**	**5**
كفاءة المياه في القطاع الصناعي	**14**	**14**	**8**	**4**
الاعتماد على مصادر الطاقة المتجددة	**26**	**6**	**2**	**6**
الاقتصاد قليل الانبعاثات الملوثة للهواء	**19**	**16**	**2**	**3**
تدوير النفايات	**20**	**11**	**4**	**5**
كفاءة استهلاك المواد الخام	**14**	**13**	**10**	**3**
الأبنية والمدن المستدامة	**14**	**12**	**8**	**6**
الإنتاج النظيف/الممارسات الصديقة للبيئة	**18**	**12**	**5**	**5**
المنتجات العضوية	**13**	**10**	**8**	**9**

المساحات الخضراء والسيطرة على التصحر	11	12	12	5
تقليل الملوثات الناتجة في المياه العادمة	15	15	6	4

أين ترى الاقتصاد المحلي الفلسطيني من الاقتصاد الأخضر؟

قريب جداً	قريب	متوسط	بعيد	بعيد جداً
0	0	8	19	13

رتب مؤشرات الاقتصاد الأخضر التالية حسب أولوية تطبيقها في فلسطين (0 غير مهم، 10 مهم جداً)

	0	1	2	3	4	5	6	7	8	9	10
الاقتصاد قليل الانبعاثات الكربونية	6	4	3	6	1	4	4	2	4	3	2
كفاءة الطاقة في القطاع الصناعي	5	4	1	7	0	1	2	5	3	8	4
كفاءة المياه في القطاع الصناعي	4	2	4	7	2	0	1	4	5	4	7
الاعتماد على مصادر الطاقة المتجددة	3	5	1	8	3	0	1	3	5	5	6
الاقتصاد قليل الانبعاثات الملوثة للهواء	6	5	2	4	1	3	1	6	3	5	4
تدوير النفايات	4	4	3	7	3	2	1	1	4	7	4
كفاءة استهلاك المواد الخام	6	3	1	7	0	4	2	3	3	7	4
الأبنية والمدن المستدامة	7	6	0	3	4	4	5	3	5	3	0
الإنتاج النظيف/الممارسات الصديقة للبيئة	6	2	3	4	4	1	0	4	6	3	5
المنتجات العضوية	4	7	3	4	2	4	1	4	6	1	3
المساحات الخضراء والسيطرة على التصحر	5	5	5	5	0	1	1	3	5	7	2

تقليل الملوثات الناتجة في المياه العادمة	3	5	3	5	3	2	0	1	3	9	6

رتب مؤشرات الاقتصاد الأخضر التالية حسب سهولة تنفيذها في فلسطين (0 صعب جداً، 100 سهل جداً)				
	%25-0	%50-26	%75-51	76-100%	لا أعلم
الاقتصاد قليل الانبعاثات الكربونية	6	16	12	5	1
كفاءة الطاقة في القطاع الصناعي	6	7	16	11	0
كفاءة المياه في القطاع الصناعي	6	5	17	11	0
الاعتماد على مصادر الطاقة المتجددة	3	10	11	14	2
الاقتصاد قليل الانبعاثات الملوثة للهواء	6	14	15	4	0
تدوير النفايات	4	7	14	13	1
كفاءة استهلاك المواد الخام	3	10	17	9	1
الأبنية والمدن المستدامة	7	15	11	6	1
الإنتاج النظيف/الممارسات الصديقة للبيئة	3	13	13	11	0
المنتجات العضوية	6	9	11	13	1
المساحات الخضراء والسيطرة على التصحر	9	8	12	11	0
تقليل الملوثات الناتجة في المياه العادمة	5	11	13	11	0

اختر الداعم الموجود حالياً لكل من المؤشرات التالية (يمكنك اختيار أكثر من إجابة)			
	سياسات محلية	نظام حوافز	إمكانيات محلية (كوادر، معرفة،	لا أعلم

			إمكانية اقتصادية وغيرها)	
الاقتصاد قليل الانبعاثات الكربونية	**17**	**9**	**14**	**13**
كفاءة الطاقة في القطاع الصناعي	**13**	**8**	**26**	**5**
كفاءة المياه في القطاع الصناعي	**23**	**10**	**23**	**4**
الاعتماد على مصادر الطاقة المتجددة	**14**	**17**	**24**	**4**
الاقتصاد قليل الانبعاثات الملوثة للهواء	**19**	**8**	**15**	**9**
تدوير النفايات	**15**	**18**	**21**	**4**
كفاءة استهلاك المواد الخام	**16**	**10**	**24**	**5**
الأبنية والمدن المستدامة	**20**	**10**	**19**	**6**
الإنتاج النظيف/الممارسات الصديقة للبيئة	**22**	**16**	**18**	**5**
المنتجات العضوية	**14**	**18**	**18**	**6**
المساحات الخضراء والسيطرة على التصحر	**24**	**10**	**18**	**7**
تقليل الملوثات الناتجة في المياه العادمة	**25**	**13**	**17**	**4**

رتب المعيقات التالية حسب مساهمتها في غياب/محدودية اقتصاد أخضر محلي (0 لا تؤثر، 100 تعيق وجود الاقتصاد الأخضر)

	%25-0	%50-26	51-75%	76-100%	لا أعلم
قلة القوانين/الضرائب على الكربون	**6**	**2**	**8**	**21**	**2**
قلة القوانين/الحوافز لكفاءة الطاقة	**1**	**5**	**11**	**20**	**2**

قلة القوانين/الحوافز لكفاءة المياه	1	4	16	17	1
الاعتماد على مصادر الطاقة غير المتجددة	4	5	16	12	1
قلة القوانين/الضرائب على انبعاثات ملوثات الهواء	1	5	13	18	2
الإنتاج الكبير من النفايات وقلة تدويرها	1	7	12	19	0
قلة كفاءة استهلاك المواد الخام	0	9	17	13	0
قلة الاستدامة في المدن و/أو الأبنية	1	10	18	8	2
الإنتاج غير النظيف	0	7	15	13	2
قلة المنتجات العضوية	3	13	16	6	1
التصحر ومحدودية المساحات الخضراء	4	8	14	11	1
الملوثات الناتجة في المياه العادمة	1	8	12	17	1

توصيات أخرى لتطبيق الاقتصاد الأخضر في فلسطين

- **توعية المجتمع المحلي وبالتحديد القطاع الخاص، وربط المفاهيم بمصالحه الاقتصادية بحيث يلحظ الاستفادة الممكنة جراء تطبيق هذه الإجراءات.**
- **ضرورة الربط مع التغير المناخي وأهداف التنمية المستدامة والإنتاج والاستهلاك المستدام.**
- **استخدام أسلوب الشد (الجذب) من خلال الحوافز الحكومية هو أفضل وسيلة خاصة مع عجز الحكومة عن السيطرة على الأرض.**
- **تشجيع فصل النفايات الصلبة عن بعضها البعض وإعادة تدويرها بشكل فعال، توسيع مفهوم البصمة المائية للمنتجات، فرض رسوم على استعمال أكياس البلاستيك في المولات والمحلات الكبيرة واستبدالها بالكرتون أو القماش، حملات مكثفة لترشيد استهلاك المياه وإعادة استخدام المياه العادمة للزراعة.**
- **تطبيق نظام حوافز للمباني والمنشآت الصناعية أسوة بالأنظمة الغربية.**
- **Ensuring complying with the regulations and environmental laws through continuous monitoring, and providing more incentives for renewable energy, water treatment, and sustainable buildings.**

ANNEX5 : RESULTS OF POLICY MAKERS SURVEY (ANSWERS/NUMBER OF VOTES HIGHLIGHTED IN GREY)

اسم المؤسسة التي تعمل بها **(إجابة مفتوحة)**				
• سلطة المياه الفلسطينية. • سلطة الطاقة والموارد الطبيعية • سلطة جودة البيئة				
برأيك ما هي نسبة ارتباط المفاهيم التالية بالاقتصاد الأخضر				
	%25-0	%50-26	%75-51	%100-76
الاقتصاد قليل الانبعاثات الكربونية	**0**	**1**	**0**	**2**
كفاءة الطاقة في القطاع الصناعي	**0**	**1**	**1**	**1**
كفاءة المياه في القطاع الصناعي	**1**	**1**	**1**	**0**
الاعتماد على مصادر الطاقة المتجددة	**0**	**1**	**0**	**2**
الاقتصاد قليل الانبعاثات الملوثة للهواء	**0**	**2**	**0**	**1**
تدوير النفايات	**0**	**2**	**0**	**1**
كفاءة استهلاك المواد الخام	**2**	**0**	**0**	**1**
الأبنية والمدن المستدامة	**1**	**0**	**1**	**1**
الإنتاج النظيف/الممارسات الصديقة للبيئة	**0**	**2**	**0**	**1**
المنتجات العضوية	**0**	**3**	**0**	**0**
المساحات الخضراء والسيطرة على التصحر	**0**	**1**	**1**	**1**
تقليل الملوثات الناتجة في المياه العادمة	**9**	**2**	**0**	**1**
أين ترى الاقتصاد المحلي من الاقتصاد الأخضر؟				
قريب جداً	قريب	متوسط	بعيد	بعيد جداً
0	**0**	**0**	**3**	**0**
اختر الداعم الموجود حالياً لكل من المؤشرات التالية؟ (يمكنك اختيار أكثر من إجابة)				
	سياسات محلية	نظام حوافز	إمكانيات محلية (كوادر/	لا أعلم

			معرفة/إمكانية اقتصادية و غيرها)	
الاقتصاد قليل الانبعاثات الكربونية	**0**	**1**	**3**	**0**
كفاءة الطاقة في القطاع الصناعي	**2**	**1**	**3**	**0**
كفاءة المياه في القطاع الصناعي	**1**	**1**	**0**	**2**
الاعتماد على مصادر الطاقة المتجددة	**2**	**2**	**2**	**0**
الاقتصاد قليل الانبعاثات الملوثة للهواء	**2**	**1**	**1**	**1**
تدوير النفايات	**1**	**2**	**0**	**0**
كفاءة استهلاك المواد الخام	**0**	**1**	**1**	**1**
الأبنية والمدن المستدامة	**1**	**1**	**1**	**1**
الإنتاج النظيف/الممارسات الصديقة للبيئة	**2**	**1**	**2**	**0**
المنتجات العضوية	**2**	**1**	**2**	**0**
المساحات الخضراء والسيطرة على التصحر	**2**	**1**	**2**	**0**
تقليل الملوثات الناتجة في المياه العادمة	**1**	**1**	**2**	**0**

هل أصدرت مؤسستكم أي سياسات تدعم وجود الاقتصاد الأخضر محلياً؟ إذا كانت الإجابة نعم يرجى توضيح الإجابة

(إجابة مفتوحة)

- **استراتيجية سلطة الطاقة، قانون الطاقة المتجددة وكفاءة الطاقة**
- **استراتيجية البيئة عبر القطاعية**
- **نظام إدارة النفايات الصلبة**
- **نظام رابط المساكن والمنشآت بشبكة الصرف الصحي**
- **استراتيجية الإنتاج والاستهلاك المستدامين**

هل شاركت فلسطين بأي من الحراكات/المؤتمرات/الفعاليات العالمية و/أو الإقليمية التي تدعم الاقتصاد الأخضر؟ إذا كانت الإجابة بنعم يرجى توضيح الإجابة.

(إجابة مفتوحة)

- **جميع الفعاليات والمؤتمرات ذات العلاقة تم المشاركة بها من خلال الحضور أو من خلال تقنية (Video Conference).**
- **مؤتمرات التغير المناخي.**
- **الاجتماعات الخاصة بأهداف التنمية المستدامة.**

أي ملاحظات أخرى
• يمكن التركيز على إعادة الاستخدام كأساس للمياه والاقتصاد الأخضر. • التشريعات البيئية الفلسطينية داعمة للاقتصاد الأخضر.

ANNEX6 :RESULTS OF BUSINESS OWNERS SURVEY (ANSWERS/NUMBER OF VOTES HIGHLIGHTED IN GREY)

هل واجهت أي عقوبات بخصوص القضايا البيئية؟	
نعم	لا
0	**9**

إذا كانت الإجابة بنعم، ما هي العقوبة؟				
دفع ضريبة	صعوبة الإجراءات الرسمية لنشاط معين	إتلاف منتجات/حظر تقديم خدمات	دفع غرامات مالية	غير ذلك
0	**0**	**0**	**0**	**0**

إذا كانت الإجابة بنعم، أين يقع السوق المستهدف؟			
الأراضي الفلسطينية	الشرق الأوسط	أوروبا	غير ذلك
0	**0**	**0**	**0**

في أي قطاع تعمل؟				
الاستيراد و/أو التصدير	قطاع الأبنية والعقارات	الصناعي	الخدمات	الغذائي
2	**0**	**1**	**5**	**1**

هل تواجه مشكلة في تسويق منتجك لعدم الحصول على شهادات بيئية؟	
نعم	لا
0	**9**

هل أخذت أي اعتبارات بيئية في نشاطات مشروعك؟ وهل انعكس إيجاباً على العائد المادي للمشروع؟	
نعم	لا
3	**5**

إذا كانت الإجابة بنعم أو لا، الرجاء التوضيح
• **ترخيص وفحوصات جودة المنتج.** • **مشروعي خدماتي صرف، تقدم الخدمة أونلاين.** • **استخدام بعض مواد التنظيف ومواد الطاردة للطيور والقوارض.** • **نعم من ناحية الاهتمام بتقليل استهلاك أي نوع من أنواع الموارد التي من الممكن أن تزيد من استهلاك وتدمير البيئة.**

هل ترى أن التكلفة المالية الناتجة عن اتخاذ المعايير البيئية في مشروعك أعلى من الفوائد المالية العائدة؟		
نعم	لا	لا أعلم
1	**7**	**1**

ANNEX 7: LIST OF INTERVIEWED EXPERTS

Name	Organization	Department/Management
Zaghloul Samhan	EQA	Policies and Planning
Murad Al-Madani	EQA	Legal Department
Nidal Katbeh	EQA	Climate Change National Committee
Dala Attari	PalTrade	Green Economy Project
Abd Alrahman Tamimi	Hydrology Group	General Manager
Nidal Atallah	Heinrich Böll Stiftung	Policies Coordinator
Mohammad Mubayyed	PENRA	Head of Energy Efficiency Department
Mohammad Hmeidi	Water Sector Regulatory Council	Executive Director
Subhi Samhan	PWA	Research and Strategic Planning Department
Hazem Kittaneh	PWA	Head of Technical Affairs Department