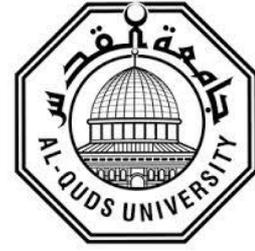


**Deanship of Graduate Studies
Al-Quds University**



**Towards Green Economy in Palestine:
Pathways to Sustainable Development and Poverty
Eradication through Investing in Natural Capital-
Agriculture and Water**

Eman Kamel Abu Rub/ Kafri

M .Sc. Thesis

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Towards Green Economy in Palestine:
Pathways to Sustainable Development and Poverty
Eradication through Investing in Natural Capital-Agriculture
and Water

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This thesis is submitted in fulfillment of the
requirements of Master degree in sustainable
development Al Quds University

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Thesis Approval

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Jerusalem – Palestine

2014

Dedication

To my beloved mother who trusted, encouraged and supported me with a great love and belief in my abilities despite all the difficulties we faced together.

To the soul of my father whom I felt always surrounding me and supplying me with energy and power to move on.

To my lovely four daughters: Taqwa, Aman, Malak and Tarteel, and my sweet son Mo'men for being so patient and supportive during my study.

To Ayman - my beloved husband who doesn't save any effort to help, comfort and support me.

To my lovely brothers – the five candles that lightened my life - Ayman, Ahmad, Amjad, Ameer and Aram

Eman Kamil Abu Rub/ Kafri

Declaration

I certify that this thesis submitted for the degree of master is the result of my own research, except where otherwise acknowledged, and that this thesis or any part of the same has not been submitted for a higher degree to any other university.

Eman K. Abu Rub/ Kafri

Dat: / /2014

Signature

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Definitions and Acronyms

Green Economy	It is the economy that results in increased human well-being and social equity while significantly reducing environmental risks and ecological scarcities. (UNEP,2011)
Green Growth	Green growth is the means by which the current economy can make the transition to a sustainable economy while reducing pollution and greenhouse gas emissions, minimizing waste and inefficient use of natural resources, maintaining biodiversity, and strengthening energy security. (OECD,2009)
Sustainable Development	Sustainable development is the development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs (IISD,2011)
Poverty	A condition characterized by severe deprivation of basic human needs including food, safe drinking water, sanitation facilities, health, shelter, education and information. (World Bank,2010)
Natural Capital	The stock of natural resources, such as water and oil. Natural capital includes many resources that humans and other animals depend on to live and function, which leads to a dilemma between depleting and preserving those resources. (TEEP,2010)
Environment	The environment is defined as the whole physical and biological systems in which man and other organisms live. - Physical environment: that includes the built environment, natural environment, air conditions, water, land and atmosphere - human environment: people surrounding the item

or thing. This is also known as the social environment and includes the spiritual environment, emotional environment, home, family etc. The environment is a fluid dynamic thing. (Miler,1995)

Brown economy

Brown Economy (or Black Economy) means that economic growth depends only on petrochemicals such as coal, petroleum and natural gas. In the process of this form of production, great amounts of carbon dioxide and soot are released into the atmosphere. (EDUI,2010)

Market (Classic) economy

An economic system in which economic decisions and the pricing of goods and services are guided solely by the aggregate interactions of a country's citizens and businesses and there is little government intervention or central planning. This is the opposite of a centrally planned economy, in which government decisions drive most aspects of a country's economic activity. (Gregory and Stuart,2004)

GDP

Gross domestic product: The monetary value of all the finished goods and services produced within a country's borders in a specific time period, though GDP is usually calculated on an annual basis. It includes all of private and public consumption, government outlays, investments and exports minus imports that occur within a defined territory (IMF,2010)

MDG's

Eight international development goals that were established following the Millennium Summit of the United Nations in 2000, following the adoption of the United Nations Millennium Declaration. All 189 United Nations member states at the time (there are 193 currently) and at least 23 international organizations committed to help achieve the Millennium Development Goals by 2015, the goals follow:

1. To eradicate extreme poverty and hunger
2. To achieve universal primary education
3. To promote gender equality and empowering women
4. To reduce child mortality rates
5. To improve maternal health
6. To combat HIV/AIDS, malaria, and other diseases
7. To ensure environmental sustainability
8. To develop a global partnership for development

(UN,2000)

Abbreviations

UNEP	The United Nations Environment Program
ESCWA	United Nations Economic and Social Commission for Western Asia
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organization
UNRISD	The United Nations Research Institute for Social Development

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Abstract

This research aims to investigate the role of a green economy in achieving sustainable development through investing in natural capital as an effective instrument towards a green economy, and poverty eradication in Palestine. The thesis first introduces the background that refers to the poverty problem in Palestine and RIO +20 conference where Green Economy was adopted. The research problem was summarized by the question: “Can the Palestinians achieve sustainable development and eradicate poverty through investing in the available natural capital?”. To achieve the research goals and objectives, the analytical descriptive approach (systems analysis) was chosen using different research tools such as: critical and analytical revision for the national development plan 2011-2013 from green economy point of view, two questionnaires targeted governmental and non-governmental organizations, the researchers and academics, in addition to interviews with policy and decision makers. The conceptual framework included the historical context of the green economy, the various definitions of green economy and its concepts, in addition to the deference between classic economy and green economy, the poverty and poverty eradication definition, and their relation with natural, in addition to the relation between natural capital and green economy. The Palestinian background of economic situation, natural capital, and development were also summarized. The main conclusions of the study were that “agriculture and water sectors are among the most important sectors in Palestine to be invested in to eradicate poverty and implement green economy concepts”, and, “Palestine can move forward towards green economy but slowly and after overcoming the barriers and constraints that stands against this step”. The main recommendations were that “it is advocated for a clearer definition and better understanding of the goals of the green economy to be achieved at the national level. Ensure that the green economy will strengthen sustainable development and not replace it” and “Comprehensive solutions are needed for sustainable development which leads to taking the green economy into consideration while planning to solve the poverty problem in Palestine”, in addition to other recommendations targeting the strategies and plans that Palestine should develop that mainstream green economy as a method of sustainable development.

نحو اقتصاد أخضر في فلسطين: مسار إلى التنمية المستدامة ومكافحة الفقر من خلال الاستثمار في راس

المال الطبيعي (الزراعة والمياه)

إعداد: أيمن كامل توفيق أبو الرب/كفري

إشراف: د. يوسف أبو صفية

الملخص

أطروحة تهدف إلى تقصي دور الاقتصاد الأخضر في تحقيق التنمية المستدامة ومكافحة الفقر من خلال الاستثمار في رأس المال الطبيعي (المياه والزراعة) كأداة فاعلة للوصول لاقتصاد أخضر. تقدم خلفية الأطروحة إشارة لمشكلة الفقر في فلسطين وإلى مؤتمر ريو +20، حيث اعتمد الاقتصاد الأخضر، أما مشكلة الرسالة فقد تم تلخيصها في السؤال: "هل يمكن للفلسطينيين تحقيق التنمية المستدامة والقضاء على الفقر من خلال الاستثمار في رأس المال الطبيعي المتاح؟". لتحقيق أهداف البحث، تم اختيار المنهج الوصفي التحليلي (تحليل النظم) باستخدام أدوات بحثية مختلفة مثل: المراجعة النقدية والتحليلية لخطة التنمية الفلسطينية 2011-2013، والمقابلات التي استهدفت كبار صانعي السياسات الفلسطينيين (الوزراء أو الوكلاء) والاستبانات حيث تم تصميم استباناتين الأولى استهدفت صغار صانعي السياسات (مساعدو الوكلاء والمدراء العامون) والثانية استهدفت المنظمات غير الحكومية وأساتذة الجامعات والباحثين ذوي العلاقة بموضوع الرسالة. شمل الإطار المفاهيمي السياق التاريخي للاقتصاد الأخضر، وتعريفات مختلفة للاقتصاد الأخضر ومفاهيمه، بالإضافة إلى الاختلاف بين الاقتصاد الكلاسيكي والاقتصاد الأخضر. كذلك تم توضيح وتعريف الفقر والقضاء على الفقر، وعلاقتها برأس المال الطبيعي، والعلاقة بين رأس المال الطبيعي والاقتصاد الأخضر، بالإضافة إلى إعطاء نبذة عن الوضع الاقتصادي الفلسطيني، ورأس المال الطبيعي، والتنمية في فلسطين. وكانت الاستنتاجات الرئيسية للأطروحة: "أن قطاعي الزراعة والمياه من بين القطاعات الأكثر أهمية في فلسطين لاستثمارها للقضاء على الفقر وتطبيق مفاهيم الاقتصاد الأخضر"، و "أنه يمكن لفلسطين المضي قدماً نحو تطبيق الاقتصاد الأخضر ولكن ببطء، وبعد التغلب على الحواجز والمعوقات التي تقف ضد هذه الخطوة. ومن التوصيات الرئيسية التوصية بتعريف

أكثر وضوحاً وفهم أفضل لأهداف الاقتصاد الأخضر التي ينبغي تحقيقها على المستوى الوطني". و "التأكيد على أن الاقتصاد الأخضر وسيلة لتحقيق التنمية المستدامة وليس بديلاً لها". و "هناك حاجة لحلول شاملة لتحقيق التنمية المستدامة التي تؤدي إلى أخذ الاقتصاد الأخضر في الاعتبار عند التخطيط لحل مشكلة الفقر في فلسطين". بالإضافة إلى توصيات أخرى استهدفت الاستراتيجيات والخطط حيث ينبغي لفلسطين وضع خطط واستراتيجيات التنمية الوطنية والتي يعمم فيها الاقتصاد الأخضر باعتباره وسيلة للوصول للتنمية المستدامة.

Chapter One

General Framework

1.1 Introduction :

The United Nations Conference on Sustainable Development (Rio+20) took place in Rio de Janeiro, Brazil, in June 2012. The Rio+20 conference was a historic opportunity to define pathways to a safer, more equitable, cleaner, greener and more prosperous world for all. *“The Conference focused on two themes: (a) a green economy in the context of sustainable development poverty eradication and how to build a green economy to achieve sustainable development and lift people out of poverty, including support for developing countries that will allow them to find a green path for development; and (b) the institutional framework for sustainable development and how to improve international coordination to achieve sustainable development” (UNCSD, 2012).*

Currently, there is no international consensus on the problem of global food security or on possible solutions for how to nourish a population of 9 billion by 2050. *“Freshwater scarcity is already a global problem, and forecasts suggest a growing gap by 2030 between annual freshwater demand and renewable supply. The outlook for improved sanitation still looks bleak for over 1.1 billion people and 844 million people still lack access to clean drinking water” (WHO and UNICEF, 2010).* Collectively, these crises are severely impacting the possibility of sustaining prosperity worldwide and achieving the Millennium Development Goals (MDGs) for reducing extreme poverty. They are also compounding persistent social problems, such as job losses, socio-economic insecurity, disease and social instability **(UNRISD, 2011).**

The causes of these crises vary, but at a fundamental level they all share a common feature: the gross misallocation of capital. During the last two decades, much capital was poured into property, fossil fuels and structured financial assets with embedded derivatives. However, relatively little in comparison was invested in renewable

energy, energy efficiency, public transportation, sustainable agriculture, ecosystem and biodiversity protection, and land and water conservation

Most economic development and growth strategies encouraged rapid accumulation of physical, financial and human capital, but at the expense of excessive depletion and degradation of natural capital, which includes the endowment of natural resources and ecosystems. By depleting the world's stock of natural wealth – often irreversibly – this pattern of development and growth have had detrimental impacts on the wellbeing of current generations and presents tremendous risks and challenges for the future. The recent multiple crises are symptomatic of this pattern (UNEP,2012)

Job creation and natural resources management are two of the most daunting challenges faced by the Palestinian economy. It is believed that green growth and economy offers a way to achieve sustainable development by enhancing the productivity of natural assets while preventing the negative social consequences of environmental degradation. In other words, investing in natural capital – agriculture and water- can improve social welfare and hence poverty eradication, while helping employment opportunities. Based on this, this thesis is directed towards testing this possibility in Palestine.

1.2 Thesis Importance

Scientific: This research is considered a new addition to the scientific research on sustainable development methods and it can generate other researches on the ways of implementing and operating green economy concept in other fields of development such as the renewable energy, green building, water conservation and green agriculture.

Applied and operational: The conclusions and recommendations of this thesis may participate in finding solutions for the poverty problem in Palestine and change the vision of decision makers towards the methods of achieving sustainable development

Research: This thesis will be one of the first of its kind that connects green economy and sustainable development with poverty eradication through investing in natural capital in Palestine.

1.3 Problem Statement and Justifications

A phenomenon of poverty in the Palestinian society forms one of the key challenges facing policy makers as a result of their implications and effects that affect large segments of the Palestinian society. The poverty rate among individuals during the year 2011 according to the monthly consumption patterns was 25.8%; 17.8% in the West Bank and 38.8% in the Gaza Strip. About 47.6% of the individuals monthly income is below the national poverty line; of whom 35.6% in the West Bank and 67.1% in Gaza Strip (PCBS, 2013).

“The green economy has been adopted as a tool to achieve sustainable development in Rio+20 United Nations Conference on Sustainable Development declaration 2012” (UNCSD, 2012).

As a developing country, still suffering from the Israeli occupation, with limited natural resources most of them are under the occupying authority's control; Palestine needs now more than ever to find new ways and methodologies to raise the socio-economic sense of responsibility and improve the livelihood of the Palestinian poor through investing in the available natural capital. From this point of view the green economy concept has drawn the researcher's attention as a field of research, composing the following question: **Can the Palestinians achieve sustainable development and eradicate poverty through investing in the available natural capital?**

1.4 Research Main Goal, Objectives and Questions

The main goal of this research is to thoroughly investigate the role of green economy in achieving sustainable development through investing in natural capital as an effective instrument towards a green economy, and poverty eradication in Palestine

To achieve this main goal the following objectives are identified:

- Elaborating on what is meant by a green economy, and why it is important.
- Evaluating the current Palestinian development and economic situation.
- Understanding the relationship between investing in natural capital (agriculture and water) and the concept of a green economy and to what extent, if any, it can help to achieve a green economy and eradicate poverty in Palestine.
- Suggest entry points for environmental mainstreaming in policies and strategies at the national level.

Therefore, the following research questions are raised as main clues to lead the research:

- Why the concept of green economy is important for Palestine and what is its link with sustainable development?
- Can Palestine move a head towards green economy?
- What prerequisites are still needed to move towards green economy?
- What is the link between investing in natural resources and poverty eradication?
- What are the most critical elements needed to be considered to change the Palestinian Economy to Green Economy?
- Whose responsibility to implement green economy in Palestine and how it can be employed to eradicate poverty?
- Are there any policy or institutional modifications required at the national level,
- Is the legal environment good enough to cope with the desired changes, what gaps are there and what modifications are expected.
- What are the major barriers against moving towards green economy in Palestine

1.5 Thesis hypothesis

The research was built on three hypotheses:

- Green economy can be a pathway for sustainable development in Palestine
- It is possible to apply green economy concepts in Palestine by cooperative efforts between governmental and nongovernmental organizations
- Investing in natural capital in Palestine (agriculture and water) can help to eradicate poverty

1.6 Scope and limitations

As the research is focused on a green economy, poverty eradication, and investing in natural capital (agriculture and water) towards a green economy in Palestine, the scope of the thesis research is defined as follows:

Green economy: The scope of the economy in the thesis includes how it is defined, how the theory of green economy developed, when, in what context and why the concept of green economy is proposed, what goals is it going to achieve, why it is important in a time of financial crisis and climate change.

Sustainable Development: The scope of sustainable development in the research includes how it is defined, what is the relation between sustainable development, green economy and poverty eradication

Poverty Eradication: The scope of poverty in Palestine, how it is defined, its magnitude and impacts on the economy and the livelihood of the population, and what role the shift to green economy can play to eradicate poverty, production increase and/or job creation.

Investing in Natural Capital: The scope of investing in natural capital, in particular agriculture and water in the research includes how it is defined, what efforts and activities has been done on investing in natural capital, why it is important, why it is important for Palestine, what main elements it is comprised of, how these elements

are defined, why they are important, and how to evaluate investing in natural resources towards a green economy

However, some limitations are embedded in this thesis due to the following reasons:

First: time limitations: the implementation of the research is determined within two semesters as a part of getting a master degree in sustainable development "Organization building and human resources development"

Second: resources limitations: as the subject of "green economy" is a new field in Palestine, the local scientific researches and articles are very rare according to the researcher's knowledge

1.7 Target groups

A wide range of target groups of the research included:

- Policy and decision makers.
- Researchers and academics.
- nongovernmental organizations.

1.8 Thesis Methodology

As this is a new area of research in Palestine, the hypotheses can be tested through testing a number of indicators, tools and parameters including:

- Improving public health by reducing water pollution,
- Optimizing water supply and quality,
- Environmental actions leading to job creation,
- Improve agriculture methods and irrigation systems,
- Improve waste water treatment and reuse systems.
- Environmental mainstreaming into policies and strategies,
- Adoption of life cycle impacts, and analysis on production tools.

The way to assess such tools and parameters is to go through the economic impacts of the current service level of each of the above and put this as a target which can be achievable in a number of years and test the potential improvements. If this does not work due to the time limitation of the research, then we need to look at the available enabling conditions including the institutional and legal systems, governmental policies and plans, other instruments that are designed in favor of the natural resources, current human resources capacities, and local governance system.

Once available enabling environment elements are identified, other weaknesses can be identified, and look into the possibility of employing the enabling conditions into poverty eradication tools.

To achieve the research goals and objectives, the analytical descriptive approach (systems analysis) was chosen. The following tools will be used:

Critical and analytical revision for the National Development plan 2011-2013 from green economy point of view,

Questionnaires targeting the Junior policy makers in the governmental organizations, NGO's, researchers and academics,

Interviews with senior policy and decision makers

1.9 Thesis Outline

The thesis consists of five chapters:

Chapter 1: Includes a general framework for the thesis research by introducing the research background, defining the research statement and justification, setting the research objective and research question(s), identifying the research scope, finding the research limitations and target population, and giving a general thesis outline.

Chapter 2: Includes the conceptual framework of the research that also includes the concept of green economy, poverty eradication, and investing in natural resources in addition to the current Palestinian development and economic situation throughout the literature review (theses, reports, papers, statistics, etc) and a summary for the progress report of National development plan 2010-2-13 in 2012.

Chapter 3: describes the approach and procedures, the main methodology applied in the thesis, including research approach, methods for data collection and data analysis and reporting

Chapter 4: includes analytical review for the Palestinian national development plan from the green economy point of view, interviews analysis and the analysis of the questionnaires' data, results and discussion of the research findings.

Chapter 5: includes the conclusions and recommendations based on the research findings, analysis and discussion.

Chapter 2

Conceptual framework

2.1 Introduction

Market economy has brought us wealth but not without consequences. Irresponsible and short-sighted economic activities have resulted in varieties of different environmental problems and ecological scarcities. Extraction of raw materials, manufacturing and transportation are causing the lion's share of the most severe impacts of economic activities. Nonrenewable resources are depleted; renewable resources like forests and fish reserves are being used faster than they can regenerate themselves; water, air, and soil are being polluted; landfills are expanding. These examples show that the way we conduct business in today's world is far from the goals of sustainable development. **(Koho,2012)**

2.2 The historical context of the green economy

“The concept of a green economy could be understood in the best way by reference to the historical context. This concept is based on decades of analysis and debate about the interaction between humans, economy and the environment, and associated composition is essential to the concept of sustainable development”. **(UNEP,2011)**

In 1982, the General Assembly established the World Commission on Environment and Development " Brundtland Commission" to take over the study of the relationship between the environment and development. Then, after five years, the Brundtland Commission published its milestone entitled 'Our Common Future', which defined sustainable development as the ability to make development sustainable - as a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The report pointed out the interdependence between the environment and development, in the context that the environment is where we live and development is all what we do in order to improve our destiny **(IISD, 2011).**

Then the United Nations Conference on Environment and Development was held in 1992 in Rio de Janeiro in Brazil. At the conference, governments issued the Rio Declaration on Environment and Development, and adopted Agenda of 21centery, which included a program to the desired working procedures to be taken. And in doing so they stressed that" States should work together to promote the establishment of a supportive and open international economic order that would lead to economic growth and sustainable development in all countries, in order to better address the problems of environmental degradation (UN, 1992).

During roughly the same period, two out of university research where released forwarding for the first time a presentation of the concept of the green economy. The first is an outline of the green economy (Blueprint for a Green Economy), which highlighted the interdependence between the economy and the environment as a way to move forward in the understanding of sustainable development and achievement. And the second is (The Green Economy), which considered the relationship between the environment and the economy in the broader context, and stressed the importance of the relationship between humans and the natural world. Although the two publications put forward for the first time this concept, the green economy has not attracted international attention only after nearly 20 years. (Koho,2012)

In the meantime, a number of international conferences that resulted in further refinement of the definition of sustainable development and its goals were held. The two most prominent of which are the United Nations Millennium Summit and the World Summit on Sustainable Development. The Millennium Summit was held in New York from 6 to 8 September 2000, and led to the adoption by the General Assembly United Nations Declaration Goals, which formed the basis on which was based upon the Millennium Development Goals, a set of eight goals to specific international time and closely related to sustainable development . The World Summit on Sustainable Development was held from August 26 to 4 September 2002 in Johannesburg- South Africa. the leaders of the world renewed their commitment to the Millennium Declaration, and adopted an operational plan encourages the relevant authorities at all levels to develop a sustainable development into account during the decision-making process, including the action work to promote the integration of

environmental costs both domestically and the use of economic instruments. **(UNEP-GE, 2011)**

In 2008, the world witnessed an earlier financial crisis that has led to the weakening and threatening efforts to achieve the Millennium Development Goals and sustainable development **(UNCTAD, 2008)**. Then following this crisis, many governments began to reconsider the models and concepts of traditional economic wealth and prosperity. What stimulated to move forward in debate was the growing probative evidence and increasing recognition of the risks posed by climate change and non-sustainable ecosystem degradation. In this same context, the concept of green economy was emerging once again

The concept of green economy acquired an additional international fame when the General Assembly of the United Nations decided in its resolution 64/236 of 24 December 2009, to organize in 2012 the United Nations Conference on Sustainable Development, which focused on the theme for green economy in the context of sustainable development and the eradication of poverty. **(UN,2009)**

2.3. What is green Economy?

The United Nations defines Green Economy as “one in which the vital links between economy, society, and environment are taken into account and in which the transformation of production processes, production and consumption patterns, while contributing to a reduction per unit in reduced waste, pollution, and the use of resources, materials, and energy, waste, and pollution emission will revitalize and diversify economies, create decent employment opportunities, promote sustainable trade, reduce poverty, and improve equity and income distribution”. **(UN, 1992).**

The United Nations Environment Program introduced a definition; accordingly green economy defined as that the “economy leads to improvement of the situation of human welfare and social equity, at the same time reduces significantly the

environmental risks and ecological scarcities. In the operational level , a green economy can be realized as the economy that directs the growth in income and employment through investments in public and private sectors that will lead to enhanced efficiency of resource use, and reducing carbon emissions, waste and pollution and to prevent loss of biodiversity and ecosystem degradation”. **(UNEP, 2012).**

According to the United Nations Environment Program (UNEP), “a green economy focuses on 11 key productive sectors that will be involved in its operation. Four of them directly involve deploying natural resources - agriculture, fisheries, water and forests, whereas seven sectors require investing in energy and resource efficiencies, so as to reduce the impact on the environment: energy, manufacturing, waste, buildings, transportation, tourism and cities” **(UNEP,2012)**. It is expected that a green economy will bring along green investment, diversification and innovation in technologies, and as a result of this, employment rates will be increased and poverty will decline **(Palma and Robels, 2011)**.

With regard to emerging definitions, it is noted that, while the green economy concept might imply a strong focus on the intersection between the environment and the economy, many recent publications by leading experts and international organizations have made the social dimension explicit by broadening the concept to ‘inclusive green economy’ or ‘inclusive green growth’. Whilst the Rio+20 outcome document did not arrive at an agreed definition on green economy, it did provide some guidance regarding the implementation of the concept and highlighted the importance of integrating social considerations and poverty eradication into green economy policies.**(UNDESA,2012)**

2.4 The Concept of Green Economy

In 2008, the United Nations launched the Green Economy Initiative as one of a number of initiatives aimed at addressing multiple and interrelated global crises which have an impact on the international community, namely:

The Financial crisis: The financial crisis, which hit the world in 2007, is considered the worst financial crisis since the “Great Depression” as it resulted in the loss of many work opportunities and income in several economic sectors. The financial crisis had an adverse impact on economic and living conditions in many parts of the world as it generated increasing government debts and reduced the available liquidity for investment. **(Min,2010)**

The Food crisis: The food crisis was aggravated, during 2008 and 2009, by the increased prices of staple foods which were partially attributed to an increase in production costs, wide expansion of the Bio-fuel sector, and increasing unemployment rates. As a result, the number of people threatened by hunger and malnutrition rose to one billion. **(UNEP,2010)**

The Climate crisis: The climate crisis has emerged as a global priority that requires joined efforts to respond to, adapt to, and mitigate the effects of extreme climate changes which have become more frequent over the past few years **(UNEP,2010)**.

In response to the abovementioned global crises, as soon as the green economy concept emerged in 2008, it mainly focused on reviewing the planning and implementation of trade and infrastructure activities to ensure the best returns on capital investment in natural, human and economic resources while seeking to reduce greenhouse gas emissions, the use of natural resources, and power generation waste, as well as helping to achieve social justice. Besides, urged countries to adopt plans promoting low carbon green growth and clean production as a way to respond to economic crisis and climate change effects **(Min, 2010)**.

Recently, the green economy concept has expanded to cover the investments and actions necessary to respond to all environmental management challenges. “In other words, green economy is no longer limited to climate change and reduction of carbon emissions: Moreover, the concept of green economy initiatives has evolved from achieving short-term green economic growth into strategically developing economic development paradigms in order to achieve long-term sustainable development”. **(UNEP, 2010)**

The green economy is one of the most important themes of the United Nations Conference on Sustainable Development (Rio+20) as it is considered an important pathway and not an alternative to sustainable development. “It is worth noting that a green economy requires complementary social policies, especially for poverty eradication, in order to reconcile social goals with the proposed environmental and economic goals” (ESCWA, 2011).

The last few years have seen the idea of a “green economy” float out of its specialist moorings in environmental economics and into the mainstream of policy discourse. It is found increasingly in the words of heads of state and finance ministers, and discussed in the context of sustainable development and poverty eradication (UNEP,2010)

Transitioning to a green economy has sound economic and social justification. There is a strong case emerging for a redoubling of efforts by both governments as well as the private sector to engage in such an economic transformation. For governments, this would include leveling the playing field for greener products by phasing out antiquated subsidies, reforming policies and providing new incentives, strengthening market infrastructure and market-based mechanisms, redirecting public investment, and greening public procurement. For the private sector, this would involve understanding and sizing the true opportunity represented by green economy transitions across a number of key sectors, and responding to policy reforms and price signals through higher levels of financing and investment (TEEP, 2010)

A green economy must be understood as how economy contributes to sustainable development and not as a replacement to sustainable development. A green economy needs to define the true value of ecosystems and natural resources, and the economic benefits of long-term economically and socially sound economic activities (UNEP,2012). A green economy can contribute to decent jobs and improving social conditions through job security, reasonable career prospect and worker rights, while mitigating pollution and health effects, resources degradation exploitative and harmful work conditions. *“Reducing poverty goes hand-in-hand with sustainable*

resources management and contributes to meet the Millennium Development Goals” (ICLEI, 2011).

2.5. From Classic Economy to Green Economy

The core concept of capitalism is the economic concept of capital, defines capital as “a stock of anything that has the capacity to generate a flow of benefits which are valued by humans” (Porrit 2007). There are five different types of capital: natural, manufactured, human, social and financial capital. Natural and human capitals are prerequisites for manufactured and social capital. In fact, they are the two sources of wealth. Financial capital has only instrumental value; it keeps the whole system operating.

In economic terms "natural (environmental or ecological) capital is flow of energy and matter that yields valuable goods and services"(Porrit, 2007). There are different natural capitals to be distinguished: resources, sinks and services. Resources, both renewable and non-renewable, are most familiar. Sinks are the systems in nature which absorb, neutralize or recycle waste. Climate regulation, soil binding and hydrologic cycle are examples of the variety of services nature provides. The importance of natural capital is evident. All production in human economy is based on natural capital and more importantly it is the provider of services, without it the human society could not sustain itself.

Market economy has clearly brought wealth and improved well-being of several societies over time, but it has also created negative externalities such as environmental risks and ecological scarcities. This proves that current economic model fails to recognize the true costs of producing goods. Focusing only on gross domestic product (GDP), which has been the most favored macro indicator of progress, doesn't tell the whole story. Economic activities of human beings consume more biomass than the Earth can produce on sustainable basis. The flaw of the current model is that: costs and losses of destroying the Earth are absent from the prices in the market place (Hawken 2010).

While the current model, “brown economy” is causing negative impacts on the environment, green economy decouples resource use and environmental impacts from economic growth decreasing the harmful effects of economic activities. The idea of continuous economic growth still exists but the growth is meant to be implemented in an Earth-friendly way. (UNEP 2009)

Figure 1.2 illustrates how green economics views the formal economy as embedded within a system of social structures and only a very small part of economic activity. For mainstream economists the only part of the diagram that matters is the ‘formal economy’ which is called the ‘circular flow’, where the social and environmental setting within which these exchanges between households and business take place were ignored. But in reality these transactions are embedded within social relationships, and these in turn are enclosed within the planet, which is itself a closed system. It is when we fail to recognize these complex interrelations that things go off course. The diagram also illustrates the injustice inherent in the allocation of rewards within a capitalist economy, which only values what is exchanged in the monetary economy. (Cato, 2009)

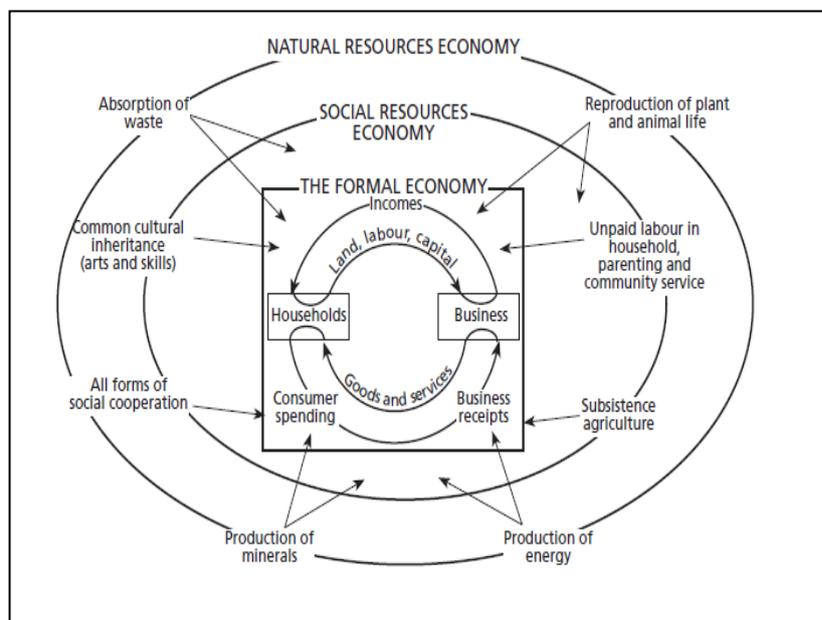


Figure 2.1 Widening the consideration of economics beyond the classical economists’ ‘circular flow’

Source: Hutchinson, Mellor and Olsen, 2002

The obvious problems being caused by economic growth have not been ignored by academics: they were noticed by some in the economics profession, who then attempted to incorporate these concerns into their discipline. This led to the development of environmental economics, and also the related study of natural-resource economics. Conventional economics considers environmental impact to be an ‘externality’, something outside its concern. Environmental economists were keen to bring these negative impacts back within the discipline. However, they still approached the subject in a scientific and measurement-based way, for example using shadow pricing to measure how much people were concerned about noise pollution or the loss of habitat. In other words, the way in which economics traditionally marginalizes or ignores something that cannot be priced was still adhered to, but the response was to attempt to evaluate in some way aspects of life which economics had ignored. Green economists would consider this to be a category error. They believe it is important to accept that some aspects of life have social or spiritual value. **(Hutchinson, Mellor and Olsen, 2002)**

2.6 Poverty and Poverty Eradication

2.6.1. Definition of Poverty

Giving a comprehensive definition of poverty is difficult, because there is no all-encompassing definition of poverty. Poverty is a social construct, so its definition varies according to whoever formulates the concept. However, besides the diverse and various definitions that have been given by scholars, there is consensus that the poverty that prevails in the lives of the poor is very hard to imagine **(Abiche, 2004)**. In reality, poverty can be observed by physical weakness due to malnutrition, sickness or disability. It also creates social isolation and results in powerlessness and hopelessness **(Chambers, 1998)**. Moreover, it causes depression and psychological stress in the minds of poor individuals.

According to the World Bank, poverty is categorized as both absolute and relative. Absolute poverty is described as a lack of basic security, the absence of one or more factors that enable individuals and families to assume basic responsibilities and to enjoy fundamental rights. On the other hand, **Walkins, 1995**, notes that relative poverty is used in terms of particular groups or areas in relation to the economic status of other members of the society. Poverty results from and even consists of a lack of basic securities, which include financial resources, but also education, employment, housing, health care and other related aspects. When the consequences of this insecurity are severe they lead to deprivation in new life areas (**Woden, 2001 and World Bank, 2001**).

2.6.2. Poverty and natural resources

Issues in poverty reduction and natural resource management define the links between poverty reduction and natural resources. About three in four poor people live in rural areas, where they depend on natural resources for their livelihoods, and about 90 percent of them depend on forests for at least some part of their income (**USAID, 2006**).

Most developing countries, and certainly the majority of their populations, depend directly on natural resources. The livelihoods of many of the world's rural poor are also intricately linked with exploiting fragile environments and ecosystems (**Barbier, 2005**). Over 600 million of the global rural poor currently live on lands prone to degradation and water stress, and in upland areas, forest systems, and dry lands that are vulnerable to climatic and ecological disruptions (**UNEP, 2011**).

In general, the poor have limited access to physical and financial capital. In addition, rich and poor people use natural resources in different ways. The rich often derive more environmental income, in absolute terms, from natural resources than the poor, but the poor derive a higher percentage of their income from natural resources. Small-scale activities in the forest, fishing, agriculture, livestock, and mining sectors can contribute up to 70 percent of rural household cash incomes and even greater values for subsistence. Because they have greater political power, the rich are able to exercise stronger control over access to resources (**USAID, 2002**).

Resource scarcity is an increasing threat to future economic growth and a real challenge to the manufacturing industries, especially scarcity of fresh water, oil and gas, and some metals. Secure resource provision needs to be supported by healthy ecosystems, the vitality of which depends on biodiversity.

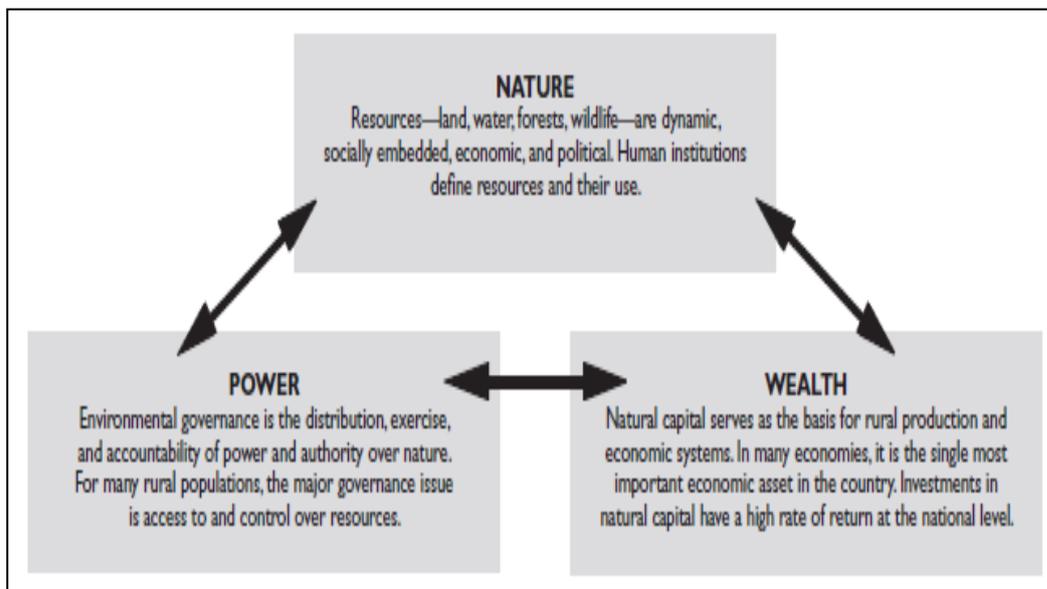


Figure 2.2: Nature-Power and Wealth Triangle

Source: USAID, 2002, Nature Wealth and Power.

Within the next upcoming two decades Mediterranean countries will have to create 30 to 40 million new opportunities for jobs to keep up the current level of employment. Moving towards reducing the environmental degradation and take the advantage of natural capital has the potential at the country to create more jobs than it destroys (**MED report, 2012**).

How environment contributes to poor growth livelihoods?

- Poor people rely on natural resources to earn incomes in sectors such as agriculture, fishing, and forestry. Natural resources also provide food and shelter for the poor.
- Health: Environmental conditions account for a significant portion of health risks to poor people. By one estimate, environmental hazards account for 21 percent of the overall burden of disease worldwide (the combination of days spent sick and deaths due to sickness).

- Reduced vulnerability: Poor people are more vulnerable to natural disasters, effects of climate change, and environmental shocks that damage livelihoods and undermine food security.
- Improving environmental management reduces vulnerability.
- Ecosystem Services: Public goods such as watersheds, mangrove forests, and ecosystem services provided by protected areas are especially beneficial to the poor and improve quality of life (UNDP, 2011).

2.7 Green Economy and Natural Capital (Agriculture and Water):

2.7.1. Greening Agriculture:

Green agricultural practices can boost productivity and contribute to poverty reduction. *“Of 286 best practice initiatives adopted by farmers in 57 low-income countries showed an average yield increase of nearly 80 percent—including integrated pest and nutrient management, conservation tillage, agro-forestry, aquaculture, water harvesting and improved livestock management”*. (Pretty et al. 2006).

The greening of agriculture refers to the increasing use of farming practices and technologies that simultaneously (UNEP, 2011):

- Maintain and increase farm productivity and profitability while ensuring the provision of food and ecosystem services on a sustainable basis;
- Reduce negative externalities and gradually lead to positive ones; and
- Rebuild ecological resources (i.e. soil, water, and air and biodiversity of natural capital assets) by reducing pollution and using resources more efficiently.

A diverse, locally adaptable set of agricultural techniques, practices and market branding certifications such as Good Agricultural Practices (GAP), Organic/Biodynamic Agriculture, Fair Trade, Ecological Agriculture, Conservation Agriculture and related techniques and food supply protocols exemplify the varying shades of green agriculture (UNEP, 2011).

Farming practices and technologies that are instrumental in greening agriculture include:

- Restoring and enhancing soil fertility through the increased use of naturally and sustainably produced nutrient inputs; diversified crop rotations; and livestock and crop integration;
- Reducing soil erosion and improving the efficiency of water use by applying minimum tillage and cover crop cultivation techniques;
- reducing chemical pesticide and herbicide use by implementing integrated and other environmental friendly biological pest and weed management practices;
- Reducing food spoilage and loss by expanding the use of post-harvest storage and processing facilities

For a developing country to be able to measure success in moving towards the objectives of greening agriculture, two categories of indicators are proposed:

Table 2.1: Potential indicators for measuring progress towards green agriculture

Action indicators	Outcome indicators
Number of enacted and implemented policy measures and officially approved plans that promote sustainable agriculture (including trade and export policy measures, payment for ecosystem services through agriculture, etc.)	Percentage and amount of land under different forms of green agriculture (Organic, GAP-good agriculture practices, conservation, etc.)
Level of governmental support to encourage farmers to invest in conversion to green agriculture and get the farm and the product certified	Decline in use of agro-chemicals as a result of conversion to green agriculture; and the number and percentage of farmers converting to green agriculture
Percentage of agricultural budget that is earmarked for environmental objectives	Increasing proportion of Payments for Environmental Services as a percentage of total farm income

Proportion of available producer support utilized for environmental objectives as a percentage of total agricultural producer support	Number of agriculture extension officers trained in green agriculture practices
Approved measures that reduce or eliminate barriers to trade in technologies and services needed for a transition to a green agriculture	Number of enterprises set up in rural areas, especially those that produce local natural agricultural inputs, to offer off-farm employment opportunities

Source UNEP, 2011: Towards Green Economy, pathways to sustainable development and poverty eradication

2.7.2 Water and development

In 2000, governments committed to a wide range of Millennium Development Goals (MDGs) that rely upon access to water and made a specific commitment to halve the number of people without access to clean water and adequate sanitation by 2015. The 2010 update on progress towards the water specific goals reports that 884 million – nearly 1 billion people – lack access to clean drinking water. When it comes to sanitation, 2.6 billion people do not have access to improved sanitation services. One in seven of those people without access to adequate sanitation services live in rural areas (**WHO/UNICEF, 2010**).

Shifting to a green economy requires careful management of all resources, especially water, which differs from other resources in some very important ways; as, water is arguably more fundamental than any other resource - to life itself, supporting a huge array of ecosystem services, and to every economy and society. As mentioned in the United Nations Millennium Ecosystem Assessment (**MA, 2005**), the Economics of Ecosystems and Biodiversity (**TEEB, 2010**) noted that ecosystem services include water cycling as a supporting service;

- Water-flow regulation, and water purification and waste treatment, as regulating services;
- Water as a provisioning service: including the provisioning of plants, fish and other organisms grown in or with water.

Water has always played a central role in societies and is a key driver of growth and poverty alleviation. It is a source of production, growth, and prosperity, but it is also a threat because of its destructive powers which can cause poverty and death through droughts and floods, and can cause contamination, disease, dispute, and conflict. All aspects of production depend on water – agriculture, industry, energy, and transport.

Most industrialized nations have a legacy of ‘easy hydrology’ – low rainfall variability and rain distributed throughout the year and perennial rivers sustained by groundwater base flows (**Grey and Sadoff, 2007**). They invested heavily in water infrastructure, institutions and management capacity to both exploit the benefits of water and to insulate society and economic growth against water’s destructive powers.

Developing countries recognize this but lack the investment, institutional structures, and capacity to improve their water security. Most have large rural populations that rely on subsistence agriculture and are exposed to the vagaries of unpredictable seasons and also to the ‘difficult hydrology’ of absolute water scarcity and severe flood risk, usually at different times but often in the same place (**Grey and Sadoff, 2007**).

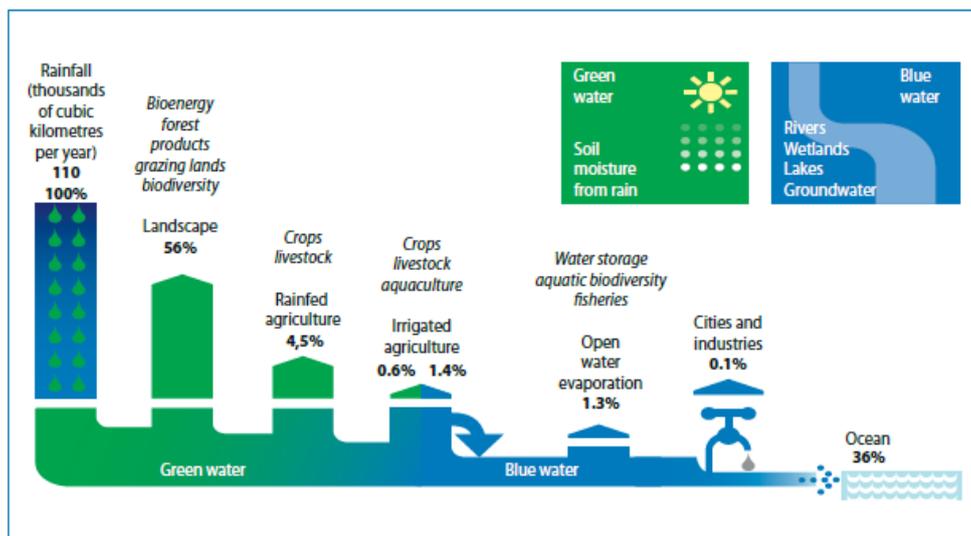


Figure 2.3: Green water (refers to rainwater stored in the soil or on vegetation). Blue water (is surface and groundwater,) Source: Molden, D. 2007. Water for life, water for good: A comprehensive assessment of water management in agriculture. International Water Management Institute, Columbo and Earthscan, London.

Water security is the main aim of investment in water. But does investment in water drive growth or does growth drive investment in water? In most cases water security is a driver of growth and a prerequisite for business investment. But in some places good water management comes as a consequence of growth. Improved water supply and sanitation, for example, can boost economic growth. Poor countries with improved access to clean water enjoy average annual growth rates of 3.7% whereas countries with the same per capita income without access have average growth of only 0.1% (SIWI, 2005).

The main characteristics of water security are:

- Ensure enough water for social and economic development.
- Ensure adequate water for maintaining ecosystems.
- Sustainable water availability for future generations.
- Balance the value of water with its uses for human survival and welfare.
- Harness productive power of water.
- Maintain water quality and avoid pollution and degradation.

Governments need policy instruments that accelerate progress to a green economy. Seeking a green economy will not be easy and will require unpopular decisions. For example, the price of natural resources will have to increase. This is happening for oil and minerals, and water and food may have to go the same way if it is to be taken as a serious part of the green economy and not just exploited. Similarly, subsidies for environmental, including water pollution, have to be removed and taxes reformed to promote natural resource efficiency not profligate waste. Incentives are needed for business to adopt green practices and government investment programs should target climate adaptation (e.g., flood measures, water reuse and recycling) and research for new green technologies. This will have to be accompanied by public awareness to promote green solutions. It is essential that we develop a framework for green growth and water security that incorporates the integrated approach and addresses water within wider socio-economic goals (GWP, 2012).

2.8 The Palestinian Economy: A Historical Background

Over the decades, since the British colonization of Palestine in 1919 and until the establishment of the Palestinian National Authority, the Palestinian economy had not been subjected in its development and growth to any national policy to draw its track and identify its growth rates in accordance to the objectives of national economy. On the contrary it has been destroyed, mutilated and became dependent on external assistance , causing deep structural imbalances that hindered the development and growth and veered towards the interests and objectives of the Israeli economy. **(Abdelkarim, 2012)**

As a result of these policies, the Palestinian National Authority has inherited a fragile and dependent economy in 1994, suffering from non-existent or weak infrastructure and limited capacity of the Palestinian labor and disruption between GNP and GDP, in addition to chronic deficit in the trade balance.

Treasury revenues and the volume of deposits and bank loans are indicators for economic growth and financial development. In the period from 1996 - 1999 treasury revenue rose in an annual rate of 17% and contributed 19% of GDP in 1996 and 23% in 1999 and during this period the Palestinian Authority tried to reduce the deficit in the general budget where the deficit in 1996 reached approx. 4% of GDP, while in 1999 it was 1% of GDP. On the other hand volume of loans and banking facilities increased up to 22% annually and the volume of private deposits up to 15% annually. Here it is worth to be mentioned that despite the rapid growth in the local economy in most of its components, the prices rate increase for the consumer did not exceed 2.5% in 1999 **(Abul Qomsan, 2005)**.

During the period from 1999 to 2009, the Palestinian economy can be divided into four intervals (stages): **(Palestinian Strategic Report, 2009)**.

1. The descending direction for the period 1999-2002: growth decreased for three years due to the Israeli extremist procedures and practices.

2. The ascending direction for the period 2003-2005: GDP started to increase due to the national and international efforts to create a suitable economic environment.
3. The descending period of 2006: that came due to the Israeli economic blockade on West Bank and Gaza. The GDP decreased in 2006 to 5.6% from 2005.
4. The growth back in the period 2006-2009: a relative improvement occurred despite the Israeli war on Gaza. This improvement referred to the aid and support funds provided by donor countries to the Palestinians that covered a large proportion of the public budget deficit.

Table 2.2: Key economic indicators in the Palestinian Territories

Indicator	Most recent year
Country surface area	6257 km ² *
Population size	Current 4.29 million (2012)* Projection (2020) 5.46
Population growth rate	2.71% (2012)*
No. of households	736 thousand (2012)*
GDP (USD)	1,775 million (2013- 2 nd quarter)
GDP/capita (USD price)	427 (2013-2 nd quarter)
GDP growth rate	5.9% (2012)
Share (%) of agriculture and fisheries in GDP	5.9% (2011)**

Source: PCBS: The performance of the Palestinian economy 2012-2013

* PCBS: On the Eve of the International Population Day 11/07/2012

** PCBS: percentage contribution to GDP by economic activity 2011

A phenomenon of poverty in the Palestinian society forms one of the key challenges facing policy makers as a result of their implications and effects that affect large segments of the Palestinian society. Besides, the poverty indicators in Palestine are

not subject to a specific direction and its association with the political and security effects and the other external factors such as the international aid, the matter that makes it more difficult for policy makers to monitor the changes and development of plans and programs designed to eliminate poverty. The Palestinian society does not only suffer from the phenomenon of poverty, but this community is exposed to the systematic process of impoverishment and marginalization by the occupation in order to maintain the causes of poverty, and the weakening of the productive base of the Palestinian economy, and increase the dependency on the Israeli economy (PCBS, 2013).

The poverty rate among individuals during the year 2011 according to the monthly consumption patterns was 25.8%; 17.8% in the West Bank and 38.8% in the Gaza Strip. About 47.6% of the individuals monthly income is below the national poverty line; of whom 35.6% in the West Bank and 67.1% in Gaza Strip (PCBS, 2013).

Also about 12.9% of the individuals in 2011 had suffered from extreme poverty, according to the monthly consumption patterns of the household; 7.8% in the West Bank and 21.1% in the Gaza Strip. At the level of income, it has been shown that 36.4% of the individuals' monthly income is below the extreme poverty line; 24.3% in the West Bank and 55.9% in the Gaza Strip (PCBS, 2013).

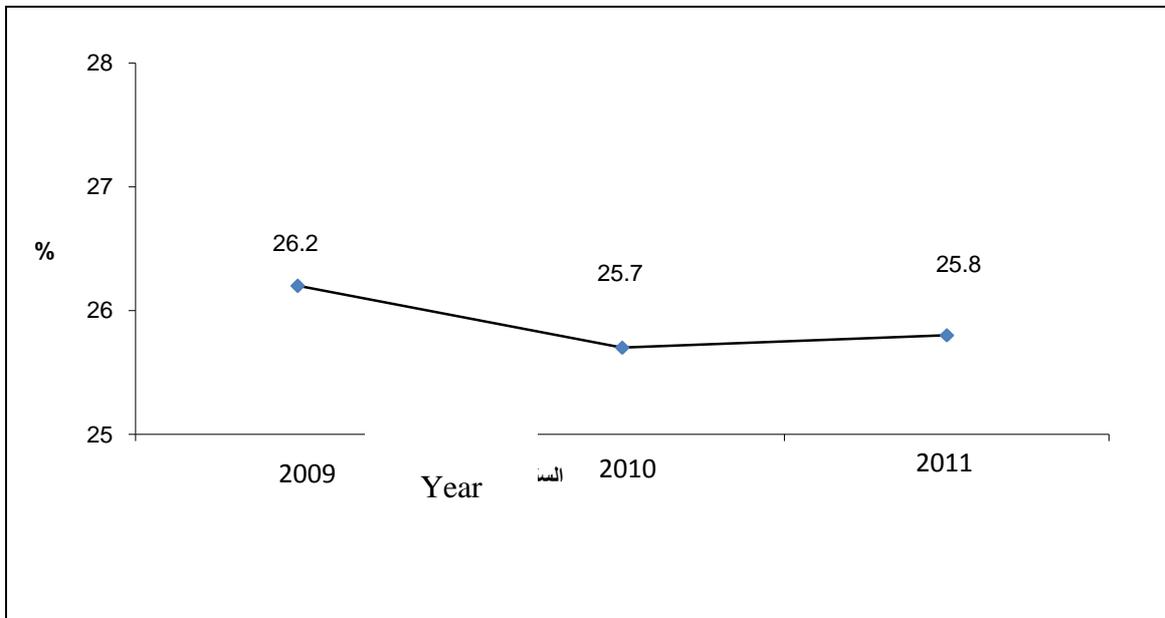


Figure 2.4: The percentage of those who are below the national poverty line in Palestine, 2009-2011

Source: PCBS: Environment and Sustainable Development in Palestine, 2012.

Unemployment has remained stubbornly high in the PNA territories. In 2011 the unemployment rate was 26 per cent, compared to 30 per cent in 2010. However, the observed improvement was accompanied by a worrisome 4 per cent decline in labor productivity. Despite 5 per cent growth in the West Bank, unemployment did not improve in 2011, indicating that the sectors with higher job-creation potential and productivity are impacted by occupation and the tightened movement and access restrictions. In Gaza, as international organizations were able to implement some projects following a modest easing of Israeli restrictions on imports, the labor market picked up and unemployment declined by 9 percentage points to 33 per cent in 2011 **(PCBS, 2012)**.

PNA territories' wage growth lagged after inflation in 2011 **(PCBS, 2012)**. Consequently, average real wages in 2011 were 8.4 per cent lower than their level five years earlier. The decline in average real wages was more pronounced in the West Bank; the modest rise in Gaza doesn't change the fact that wages in Gaza are 70 per cent of the average in the West Bank **(PMA, 2012)**.

2.9 Natural Capital Situation in Palestine

2.9.1 Nature and Biodiversity

The occupied Palestinian territory is located in a unique position among different biogeographic regions: the European, Asian and African continents, the Mediterranean and the Red Seas. The territories are divided into five agro-ecological zones (the Jordan Valley, the Eastern Slopes, the Central Highlands the Semi-coastal Plain, and the Coastal Plain) which are all vastly different in climate. As a result of this distinctive situation, the region has considerably high biodiversity. The natural ecosystems of the area are exceptionally important because of their unique intrinsic value, their stabilizing effect on the environment, and direct support for human activities such as agriculture, animal husbandry, forestry, traditional and pharmaceutical health products, and many others **(Sabeel, 2007 and ARIJ, 2007)**.

As a historic centre of crop diversity and cultivation, Palestine is the birthplace of many essential crops such as wheat, barley, vines, olives, onions, and pulses (**EQA, 2006 and ARIJ, 2007**).

Over time, the Palestinian environment has suffered considerable degradation. Both the Palestinian population, and Israeli occupation and settlers have placed extensive pressure on the fragile ecosystem of the occupied Territories. Natural ecosystems have been, and continue to be, destroyed to make way for agricultural, industrial, or housing developments. A number of pressures therefore affect natural habitats in Palestine: unplanned urban expansion, overgrazing, over-exploitation, deforestation and unplanned forestry activities, desertification and drought, soil erosion, hunting, invasive alien species, pollution, and contamination.

The situation in the occupied Palestinian territory is unique in the sense that the State of Palestine (SoP) has only limited control over its own territory.

Consequently, the Israeli occupation and its consequences both dominate other internal policies, including environmental policies, and also limit the scope for action by the State of Palestine.

The Israeli occupation exacerbates these problems, as it limits the Palestinian State's ability to regulate land use, to properly monitor the status of the environment and to enforce environmental protection measures. In addition, there is also a direct impact of the Israeli occupation on natural resources, adding to the existing pressures. Direct impacts of the occupation include the building of settlements, bypass roads and military outposts, the destruction of infrastructure and seizure of agricultural land, including deforestation of forested areas. (**ARIJ, 2007**)

2.9.2 Agriculture and Land Use

The Israeli occupation affects the Occupied Palestinian Territories environmental policy in two ways: first; the Israeli settlements and the military infrastructure in the West Bank exert pressures on the environment (in terms of water abstraction,

generation of wastewater and solid waste, air pollution, and the use of land).

(ARIJ,2009)

Secondly, the statutes of the occupation (as laid out in the Oslo agreement) limit the PNA's ability to effectively address the environmental problems they are facing. In line with the Oslo agreement, the PNA only has authority to make decisions on the 2.7% of the West Bank that fall under the “Area A” and – within limits – the 25.1% under “Area B”. For the majority of the territory (72.2%) that belongs to the “Area C”, the PNA has no control. This has very practical implications for decisions like designating nature reserves and protected areas, establishing landfills, or constructing sewage treatment plants. Often, such projects can only be undertaken in the “Area C”, as areas A and B are typically densely populated, built-up areas. However, any projects in Area C require the consent and cooperation of Israeli Authorities. The PNA’s control over the Gaza strip is limited by the political fallout between the Fatah-lead Palestinian government in the West Bank, and the Hamas-lead administration in Gaza. This means that the PNA’s authority and control over the Gaza strip is ineffective.

Since the 1967 war, the Israeli occupation authorities confiscate large areas of Palestinian land in the West Bank and Gaza Strip for the following purposes:

- The establishment of Israeli settlements since Israel has established hundreds of colonial sites.
- Bypass roads to serve the colonies.
- Security zones surrounding the colonies and banned Palestinians from entering.
- Protected areas for the future colonial projects

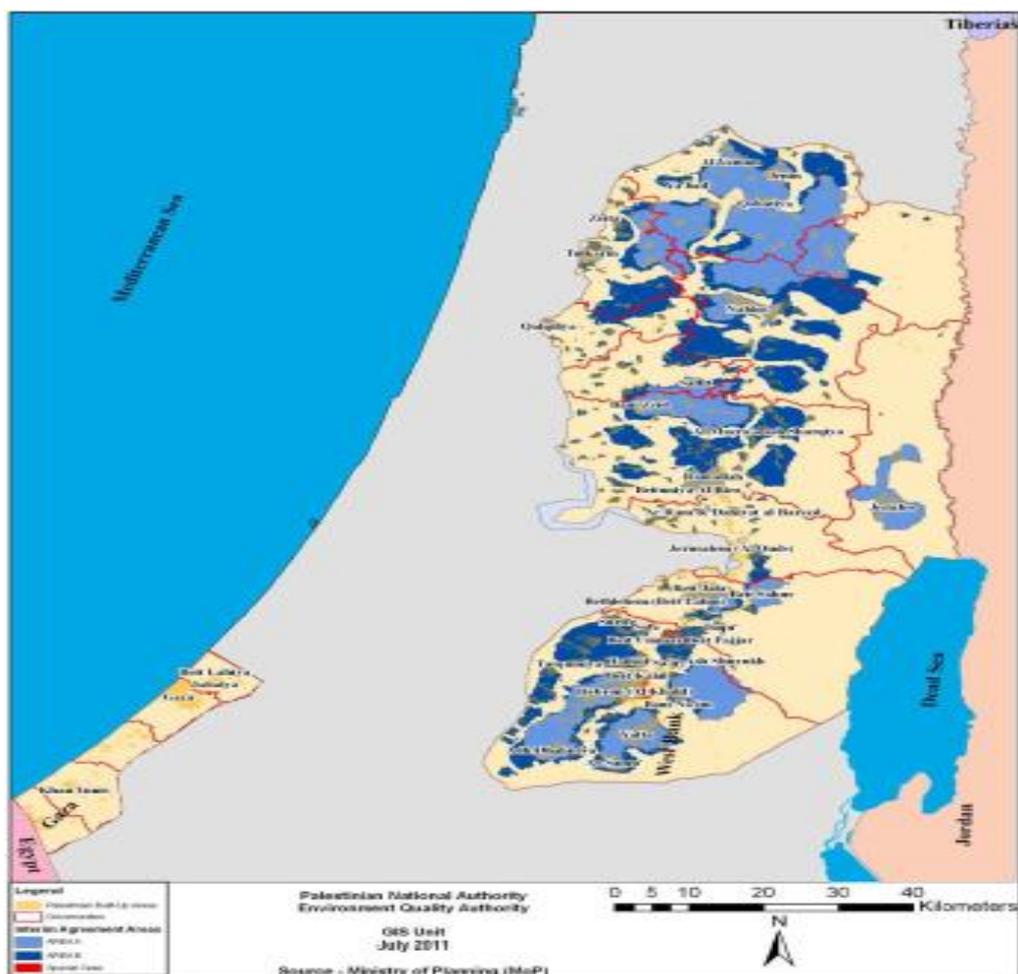


Figure 2.5: Distribution of Areas A, B and C within the Palestinian Territories

Source: Palestinian Ministry of Planning, 2011

The area of the West Bank and the Gaza Strip is 6257 km² divided into the provinces of the north (the West Bank) and covers an area of 5879 km², and the Gaza Strip with an area of 378 km². The territory of the West Bank and the Gaza Strip, according to property and land use by the Ministry of Housing is divided to the following: the territory of government, Waqf land and private lands.

Change in the use of cultivated land in the Palestinian territories has dropped from what it was the situation in 2000 to more than 33 km² in 2006, then receded to decline to about 2 km² in 2008. The area of cultivated land in the year 2000 in the Palestinian territories was about 1,515 km², then it fell to 1,513 km² in the year 2008, (PCBS,2008)

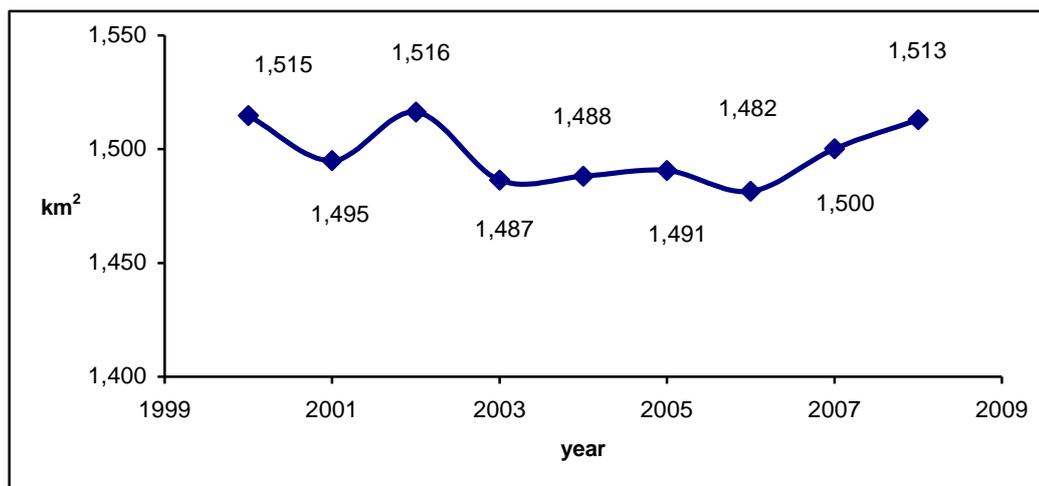


Figure 2.7: Change in the use of cultivated land in the Palestinian territories, 2001-2008 (Units: km²)

Source: PCBS, 2008. Land use statistics in the Palestinian territories

Area of cultivated land during the year 2010 amounted to 810.7 km², according to the Census of Agriculture data, 2010 and this area increased to 931.5 km² in 2011.

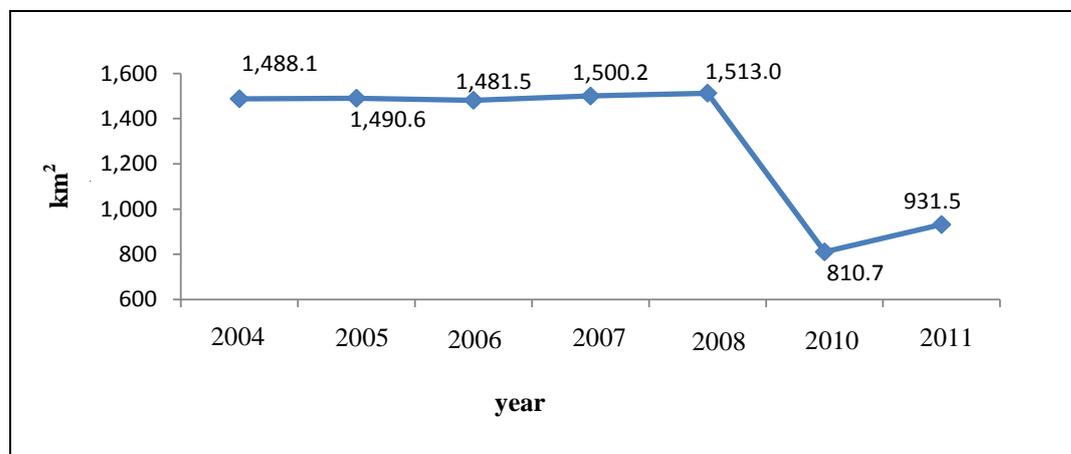


Figure 2.8: Area of cultivated land in Palestine, 2004-2011

Source: PCBS: Environment and Sustainable Development in Palestine, 2012

2.9.3 Water:

Water is the most prevalent issue on the Palestinian environmental agenda, and access to water is also among the most contentious points in the negotiations between Israel and Palestine as Israel controls all of Palestinian surface and ground water.

The Israeli occupation strongly influences the oPt water situation, both in terms of access to the available water resources, and by limiting the Palestinian National Authority’s capacities to effectively improve the situation (e.g., drilling water wells, construction of wastewater treatment infrastructure) (**Country Report, 2011**).

In terms of improved access to drinking water, sanitation and hygiene, water services have deteriorated, particularly in rural areas, due to inadequate maintenance of municipal water systems. While nearly 80% of the population in the West Bank and Gaza have piped water supply on their premises (**WHO, UNICEF, 2010**), around 170 villages in the West Bank still lack access to a piped water system (**ARIJ, 2006**). The available water supply is therefore not adequate to properly address public health concerns.

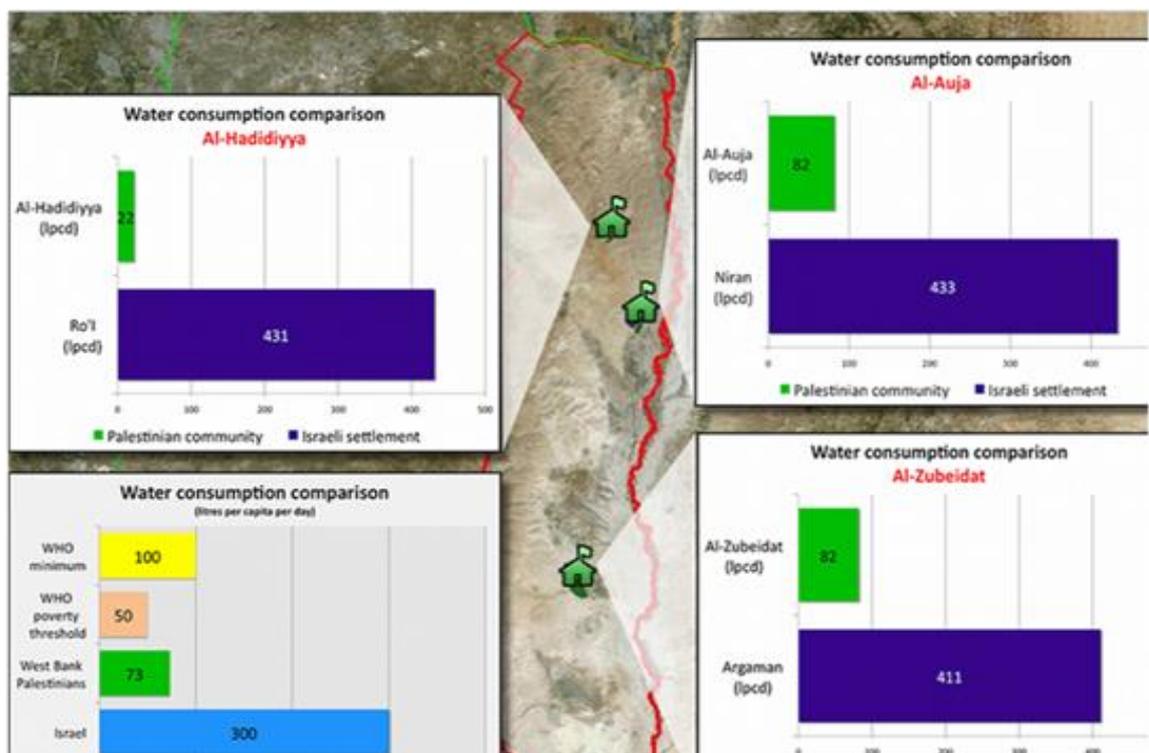


Figure 2.9: Water consumption comparison between Palestinian communities and Israeli Settlements

Source: EWASH, Maps 2014.

<http://www.mits.ps/alhaqge/Violations%20Mapping/Water/ComparisonOverview.png>

1. *“Israel retains control of all underground and surface water resources in the West Bank. Due to allocations of trans-boundary water resources agreed upon under the Interim Agreement on the West Bank and the Gaza Strip (1995), Palestinians are only allowed to abstract 20 percent of the "estimated potential" of the Mountain aquifer under the West Bank, Israel abstracts the balance (80 percent) plus overdraws its sustainable yield often by more than 50 percent”.* **(EWASH,2013)**

Palestinians faces Israelis complications and restrictions their water resources as they are forced to get the Israeli permit for establishing or rehabilitating water infrastructure in the West bank. The Joint Water Committee JWC was established to implement the Oslo Interim Agreement on Water, to oversee management of the shared aquifers and to ensure that the West Bank receives the extra water accorded under Article 40. Whilst both Israelis and Palestinians sit on this committee, Israel has veto power and final say on decisions. A number of essential projects for Palestinians have been denied permits or delayed as a result. To make up for part of the supply shortfall, Palestinians are forced to buy water from Mekorot, the Israeli national water company, some of which extracted from wells within the West Bank. This has increased Palestinian dependency on Israel. **(EWASH,2013)**

2. *“Average Palestinian consumption of water is of 50 lpcpd, well below the 100 liters recommended by the World Health Organization (WHO). In contrast, the average Israeli daily per capita consumption is at least four times the Palestinian average from available freshwater, but rises to 300 liters when taking into account non-conventional water production such as desalinated seawater”.* **(EWASH, 2013)**

3. *“Marginalized communities in the West Bank survive on less than 20 liters per capita a day, the minimum amount recommended by the WHO in emergency situations to sustain life. The situation is particularly worrying in Area C, an area under full Israeli control, which comprises 60 percent of the West Bank, and where Israeli settlements are often located. In contrast, nearby settlements have unrestricted access to water, well-watered lawns and swimming pools”.* **(EWASH,2013)**

4. *“Around 200,000 Palestinians in the West Bank have no access to water network connections. As a result, they have to travel long distances to the nearest water source*

(e.g. filling point) and pay high amounts for tanker water of dubious quality. Furthermore, the ability of Palestinians to reach sources of water is obstructed due to movement and access restrictions such as checkpoints, earth mounds, and the separation wall, imposed by the Israeli military. These increase significantly the costs of accessing water with some families having to pay as much as 40 percent of their monthly income for water (global accepted standard is 4 percent). Those with network connections often have their pipes run dry, especially during the summer months, when Israel rations water to Palestinian communities (but not to settlements) to only a few days a week”. **(EWASH,2013)**

5. Restrictions on access to water, in violation of international humanitarian and human rights law have increased the risk of displacement of Palestinians from certain areas. In July 2010, Israel halted the supply of water to Al-Farasiye (Jordan Valley) before demolishing most of the village **(EWASH, 2013)**.

In terms of wastewater collection, the majority of households in urban areas are already connected to wastewater collection systems, with connection rates of up to 90%. However, connection is significantly less in rural areas; in addition, some major cities (e.g., Jericho) remain without centralized wastewater collection system. Regarding wastewater treatment, the currently existing treatment plants in oPt are clearly inadequate to handle the amount of wastewater collected. Thus, in the West Bank, 93% (33.5 MCM/year) of produced wastewater is discharged untreated into the environment. The wastewater treatment plants located in the Gaza Strip, which only function at moderate efficiency rates (40-60%), operate above their capacity and are in need of upgrading and maintenance. About 4.9 MCM/year of untreated wastewater and the (partially) treated wastewater is discharged into the environment, mainly the coastal environment **(ARIJ, 2007)**

1. Only 31 percent of Palestinians in the West Bank are linked to the sewage network, with only one Waste Water Treatment Plant (WWTP) in operation, due to Israel’s refusal to grant the necessary combination of Joint Water Committee approval or Civil Administration permits, or Israeli military security clearance for the construction and operation of sanitation and wastewater treatment facilities. For

example the approval process for the Salfit WWTP has been held up by Israel since 1996. (ARIJ, 2007)

2. None of the settlement "outposts" have wastewater treatment facilities and existing facilities in settlements are often non-functioning or provide limited or insufficient treatment of wastewater. Raw sewage from settlements often flows through the West Bank valleys and pose a serious public health and environmental risk. (EQA,2000)

3. Settlers often destroy Palestinian water infrastructure, polluting wells and springs as well as destroying infrastructure and livelihoods. (EWASH, 2013)

The wastewater form the largest environmental pollutant at the moment, and the fact that the Palestinian territories suffer from scarcity of large water sources, should encourage those involved in the management and use of treated wastewater to work on wastewater treatment, and its utilization in various fields as a potential resource (EQA, 2000). The lack of effective wastewater treatment has impacts on nature, biodiversity and groundwater quality and endangers public health (ARIJ, 2007). The process of management and use of treated wastewater in the agricultural field has great economic importance (Barham, 2006) such as:

1. To maintain a reserve of groundwater, as the use of treated wastewater in agriculture or any other uses instead of using potable water leads to saving such water for drinking use, as well as maintaining the repository underground water from attrition, and reduce groundwater pollution.
2. Increase the scope of agricultural areas, for the production of various agricultural crops, and at a lower price, in terms of minimizing the costs related to the production, import and use of fertilizers because of the existence of the necessary elements for the plant in the treated wastewater.
3. Reduce the demand for traditional water, and head to the treated wastewater in agriculture which leads to a decline in the price of water for irrigation, and also their availability in time for the operations of irrigating different crops. This will lead to reduced production costs with the increase in actual production.
4. Increase the stock of underground water, through the use of surplus treated wastewater, and this will lead to maintaining the repository underground

water to future generations, this item can be implemented through a commitment to international specifications and standards for wastewater treatment

2.10 Development and Development Plans in Palestine

The experience of the Palestinian community in development is a unique experience due to the specificity of the Palestinians being under Israeli occupation since 1967. The presence of the occupation and the absence of a state with full sovereignty on the land, people and resources, led to the uniqueness of the Palestinian development work.

Since its occupation of the Palestinian land, Israel has marginalized the development process, and has not given a fair distribution of resources compared to those allocated to areas of Israel or even the settlements in the Palestinian areas, knowing that what was allocated by the so-called "Civil Administration" for the occupied Palestinian territory are from tax income. The resources allocated to the areas of the occupied territories remained a part of Israeli security budget, and spending process was not based on studies of the real needs of the population development priorities. The Israeli occupation authorities worked, and are still working to append the Palestinian market to the Israeli market, and try to prevent the establishment of Palestinian industries that may compete with the Israeli industries, so as to ensure the subordination of this market to Israel as leverage to pass the colonial policies of occupation. And it can be inferred that the Israeli perspective to the process of spending on projects in the occupied Palestinian territory was, and still seen from a security dimension, not development. **(MAS, 2005)**

On the other hand the Palestinians themselves were not aware of the concept of the development process and its impact on the society development, and the Palestinian individual has focused on gaining a living. Perhaps one of the most prominent reasons for the absence of this awareness is the weak political institutional work in the occupied Palestinian territories, and concentration of the Palestinian efforts outside the occupied territory for liberation and independence. **(MAS,2005)**

The Palestinian National Authority made several attempts to put development plans, and the first was the Development Program for the Palestinian National Economy 1994 - 2000, followed by the Palestinian development plan 1998 - 2000, then the Palestinian development plan 1999 - 2003, then Medium Term Development Plan 2005-2007, which was prepared in 2004 in order to guide foreign aid donors, and then the plan for Palestinian reform and development 2008-2010, and then plan the rehabilitation and reconstruction of the Gaza Strip in 2009, and last but not least, the national development plan 2011-2013. (**Awad, 2012**)

The reconstruction and development efforts led by the Palestinian National Authority (PNA) during the years of the transitional phase (1994 - 2000) did not achieve results that meet the aspiration of the Palestinian people in the progress and prosperity. This is due to several reasons both internal and external, namely the absence of Palestinian developmental vision, absence of national policies agenda that define general political economic and social orientations on which policies and interventions, depending on priorities and possibilities, are built, and the absence of the concept of comprehensive medium and long term strategic planning (**Awad,2011**). Also external conditions of the Israeli occupation, and foreign interventions have disrupted the implementation of several development plans that have been prepared, as what has happened with the Palestinian development plan 1999 - 2003, which was interrupted after the outbreak of Al-Aqsa Intifada, and Israel's destruction of infrastructure of Palestinian institutions, especially security ones; or external pressure, as what had happened after Hamas' victory in the legislative elections in 2006, and the subsequent interruption of foreign aid to the Palestinian national authority, and the disruption of a medium-term development plan 2005-2007. Thus, some development plans have been turned into recovery, restoration or rehabilitation plans, and instead of moving forward the result returned to the starting point.

2.11 National development plan 2011-2013 progress summary in 2012:

The National Development Plan (NDP) 2011-13 summarizes the Palestinian government's policy agenda, macroeconomic and fiscal framework, and monitoring and evaluation framework for 2011 to 2013. The NDP is the product of the second

comprehensive tri-annual national planning process, following on from the Palestinian Reform and Development Plan (PRDP) 2008-10.

The process underlying the development of the NDP 2011-13 included more extensive consultation with a broader range of stakeholders; the 13th Government Program entitled *Ending the Occupation, Establishing the State*, and preparation of 23 sector and cross-cutting strategies that fall within four major sectors: Governance, Social, Economy and Infrastructure.

Compared to previous national planning cycles, the NDP 2011-13 is distinctive of including a monitoring and evaluation framework, which ensures a monitored performance and implementation of the national policy agenda. It provides national indicators that show the impact of NDP implementation on the Palestinian society. Within this framework, macroeconomic indicators cast light on performance of the Palestinian economy. Measurement indicators highlight the progress of national sectors in all four major sectors.

According to the PCBS data, the economic situation in the Palestinian territory has not generally changed throughout 2012. The Palestinian economy is still impaired by a declining standard of living, rising poverty, low productivity, and a high rate of population growth.

Recently, the PNA has been further crippled by an exacerbating financial crisis. As a result, the PNA is incapable of repaying due liabilities. Causes of the PNA financial crises can be summed up as follows:

- Declining external aid to the PNA. Compared to US\$ 977 million in 2011, only US\$ 600 million were granted in aid to the PNA. In contrast with 2007, external aid sharply declined by US\$ 1,111 million.
- Rising deficit in the trade balance. This represents the difference between Palestinian exports and imports of goods and services. The trade balance deficit jumpstarted from US\$ 2523.2 million in 2006 to US\$ 3469.9 million in 2010, and continued to climb to US\$ 4265.7 million in 2011.

- Widening gap between public revenues and public expenditures, resulting in a budget deficit. Prior to financing, budget deficit marked US\$ 1303 million in 2012 compared to US\$ 1583 million in 2011.
- A broad gap between development and recurrent expenditures. In 2011 and 2012, development expenditures scored only 10% of total expenditures.
- Receding external aid has caused a rise of the PNA public debt as a result of increasing bank loans. In 2012, public debt rose to US\$ 2203 million, including US\$ 1106.8 million as local debt and US\$ 1096.8 as external debt.

GDP saw a rise in 2012. In fixed prices, GDP amounted to US\$ 6797.3 million compared to US\$ 6421.4 in 2011, reflecting an economic growth of 5.9%. Throughout 2012, the Palestinian territory registered growth in the majority of economic activities, with the exception of agriculture, forestation and fishing which featured a significant decline. Growth mainly affected major economic activities with a relatively higher contribution to the GDP

Regarding the Infrastructure and Public Policies Strategic Plan, it was developed depending on the sector plans for the following sectors: Energy, environment and natural resources, solid waste, housing and public buildings, transportation and facilities, international ports, water, waste water and telecommunications and information technology.

In terms of environment and natural resources, the policy priorities falling under the environment and natural resources sector are to develop laws and regulations containing dissuasive provisions aimed at protecting the environment, and put these laws into effect, and continue to grow forests and woodlands through the initiative of "Greening of Palestine" and the implementation of programs to combat desertification, and strengthen supervision and inspection, and the formation of environmental police and comprehensive campaigns to educate all members of society, and urged them to use natural resources in a responsible and sustainable manner.

2.11.1 Accomplishment for Environment and Natural Resources sector:

- Preparing the first draft of the system for appropriate environmental conditions for natural resource extraction activities in implementation of the law 7 of 1999 on the protection of the environment.
- Assigning of 31 judicial officers so that their powers of inspection are in accordance with the organizational structure of the Ministry of Environmental Affairs.
- Approving by the Council of Ministers on 28/02/2012 of the national plan for the protection of natural resources and historical monuments and special provisions in the framework of legislation and laws in force as part of a setup project for the national spatial plan.
- Preparing the final draft of the general guidance for environmental assessment procedures include: Guidelines for the preparation of EIA studies - manual for consulting offices, and public directory for environmental impact assessment procedures - Investor's Guide, a guide for environmental audit, manual for control and environmental inspection.
- Providing measuring devices for the control of the environment, such as measurement of gases, dust, and radiation.
- Completing of the survey of substances that deplete the Ozone Layer.
- Completing the implementation of the Horizon 2020 program, which includes capacity building, and training courses for the staff of public and private and non-governmental sectors through the Ministry of Environmental Affairs in the field of solid waste management and wastewater treatment and reuse, sustainable development and environmental pollution

2.11.2 Challenges:

1. Degraded Palestinian environmental situation where there are quarries and stone crushers that do not meet minimum environmental standards, and the flow of waste water in the valleys, and the expansion of land suffering from desertification, and the absence of a clear strategy for the distribution of the few water sources on the different sectors ... etc.

2. Lack of coordination among the various parties related to the environment sector.
3. Limited ability to implement key interventions that contribute to the preservation of the Palestinian environment.

2.11.3 Water sector

The policy priorities for the water sector to control water resources and the creation of a public network to provide citizens with clean drinking water and provide enough water for agricultural and industrial uses, doubling the pace of work on the rehabilitation of wells and water supply systems, as well as drilling new wells in an orderly manner, and directing public investment for the construction of desalination water plants and enhancing the efficacy of water harvesting and irrigation systems and their effectiveness.

2.11.3.1 Accomplishments for water sector:

1. The preparation of the final draft of the strategic plan for the water and wastewater, and submitting it to the council of Ministers for approval.
2. The preparation of the final report to describe the water sector, which includes the final recommendations under the project “Institutional Review of the Water Sector (IWSR))” and the preparation of the draft of a new law on water within the program of Legal Review, (LR) and submitting it to the Council of Ministries for approval, as well as preparing a development for the Water Department, and the preparation of a new structure for the Water Authority under the program of Organization Restructure and Change of Management (OR and CM).
3. Constructing a public network to provide citizens with clean drinking water in many areas.

2.11.3.2 Challenges:

1. Unavailability of periodic data necessary to ensure the effectiveness of the planning process (including follow-up and evaluation) in the water sector, including the per capita share of potable water, the proportion of losses from distribution networks.

2. Poor institutional capacity of local bodies for the operation and management of water systems, which leads to a delay in the implementation of many projects where donor countries require the establishment of joint services councils to manage these projects.
3. Private ownership of many of the groundwater wells used for agricultural purposes, leading to unsustainable management of groundwater.
4. Low per capita share of potable water and the sharp contrast in quantities available among different regions.
5. Contamination of drinking water, mainly, in the Gaza Strip.
6. Obtaining the Israeli approval for water projects is a major obstacle to the development of the water sector, where it must obtain the consent of the Joint Water Committee and the civil administration for all water projects

2.11.4 Wastewater sector

The priorities of the wastewater sector are to establish more sewage networks and treatment stations in all parts of Palestine and to provide service to all citizens in order to enhance, promote and protect the public health standards; and direct public investment for the construction of treatment plants, and supply treated sewage water that suits agricultural and industrial uses.

2.11.4.1. Accomplishment in wastewater sector:

Continuation of work in the waste water treatment plants west Nablus, North Gaza and Meselyia

2.11.4.2. Challenges:

- Lack of wastewater treatment plants with high efficiency and with high accommodation capacity that allow expanding sewage networks in the Palestinian territories.
- Slowness in administrative procedures that enable the launch of projects for the construction of wastewater treatment plants, where areas classified as (c) are better for the establishment of such projects which will require approvals from the Israeli side, as well as these projects requiring strong institutions capable to manage them efficiently and effectively, which most often requires

restructuring of local government bodies to include sanitation services, and capacity building.

- Low public awareness regarding the re-use of treated wastewater.

2.12 Literature Review:

The following theses, reports and papers were reviewed:

2.12.1 Towards a green economy- Exploring the political feasibility of carbon tax policy in Ireland, 2010, Min Sujie, Lund University, Sweden (Master thesis):

The theme of the study was that climate change and carbon tax as a policy instrument to achieve the green economy, and political feasibility as one of the key policy evaluation criterion. The researcher used the cross-sector survey by analyzing the four most critical elements that affect the political feasibility of carbon tax policy in Ireland: political context, social equity, environmental effectiveness, and cost effectiveness. The research approach is mainly focused on the political feasibility analysis.

Tools: literature reviews, interviews, questionnaires, local media sources and observation.

Main findings:

1. The carbon tax policy generally fits the current political context in Ireland, but the current government needs more time, experience and persuasiveness in the public to implement the carbon tax policy
2. The social (in) equity is mainly across the energy, transport, agriculture sector and the rural communities, with the latter three most adversely affected by the carbon tax policy

2.12.2 The connections between green economy and Bio- mimicry,2012, Jenni Koho, Unevirsiity of applied science, Turkey (master thesis):

The aim of the study was to show connections between green economy and bio-mimicry and to point out applicability of the method in greening economic activities.

This study is a theoretical research based on data, which consists of literature and articles written on bio-mimicry and economy.

The study shows clear connections between bio-mimicry and green economy. Bio-mimicry is about innovating new technologies and green economy stresses the importance of technology transfer to developing countries.

The research method of this study is a qualitative mapping research, and the analyzing method used is context analysis

Main Findings:

1. There are clear connections between bio-mimicry and green economy. Connections can be found only by defining these two concepts
2. Bio-mimicry can be used in adopting green economy and also used as a tool for making business greener
3. Bio-mimicry can help making business greener and hence contributing to transition towards green economy

2.12.3 Adrian Mill, 2012. Pursing Green Growth in the STRING Region, A Participative Approach towards a Green Growth Strategy, Lund University – University of Manchester (Master thesis)

The aim of this thesis is to develop and apply a participative and iterative approach towards the development of a GGS, using the STRING Region as a case study. The research approach adopted in this thesis is ‘Action Research’ (AR), an interactive inquiry process

Main Findings:

1. One of the key points arising from this study was that all participants expressed a desire for the GGS to reflect and support on-going efforts to implement the EU2020 growth strategy.
2. The involvement of stakeholders in the development of the GGS was considered central to the overall premise of this study

2.12.4 UNSWP-United Nations System-wide Perspective, 2011 – Environment Management Group /UN. Working towards a Balanced and Inclusive Green Economy (report)

The report talked about the green economy and its role in the eradication of poverty on a broader context in the projected population growth, which further raises the stakes in poverty reduction efforts. These efforts depend on higher consumption and production. Without appropriate policies in place, population growth will further significantly increase pressures on all natural resources.

Main Findings:

In a transition to a green economy, public policies will need to be used strategically to reorient consumption, investments and other economic activities – in line with domestic development agendas and contexts – towards:

- Reducing carbon emissions and pollution, enhancing energy and resource efficiency and preventing the loss of biodiversity and ecosystem services.
- Improving access to energy, food, freshwater, biological resources, sanitation services, public health and health care, new jobs, labor protection, social protection systems, information and communication technologies (ICTs) and training and education including education for sustainable development and the promotion of sustainable consumption

In the agriculture and food sectors, investments should aim at improving food and nutrition security and livelihoods while reducing emissions and other negative environmental impacts along the entire food chain through:

- Reducing farm-to-table transport distances.
- Sound soil and nutrient management, including reduced use of chemical fertilizers and pesticides and promotion of organic agriculture.
- Efficient harvesting and water use.

2.12.5 ESCWA, 2011. Green Economy in the Arab Region: Overall Concept and Available Options Beirut (Report).

The reports focused on the assured environmental, economic and social benefits of green economy.

Main Findings:

- 1. Addressing Environmental Challenges:** Mechanisms of transition to a green economy are particularly focused on cutting carbon emissions resulting from energy production and consumption, especially that upgrading the efficient use of energy and expanding the use of renewable energy are the main pathways towards a green economy.
- 2. Stimulating Economic Growth:** a green economy is expected to grow faster in the long term (2020 and beyond) to reach higher growth rates than the current ‘business as usual rate.
- 3. Poverty Eradication and Employment Opportunities Creation:** The global transition to a green economy could create huge opportunities of “green jobs” in the different economic sectors, such as employment in the fields of renewable energy generation, energy efficiency, ecosystem rehabilitation and protection, ecotourism, waste management, etc. Such transition brings solutions to eradicate unemployment in the Arab region

2.12.6 UNEP, 2012. Towards Green Economy- Pathway to Sustainable Development and Poverty Eradication (report)

The reports focused on the assured environmental, economic and social benefits of green economy.

Main Findings:

- 1.** In the short term, economic growth under a green scenario may be less than under business-as-usual. However, in the longer term – 2020 and beyond – moving towards a green economy would outperform business-as-usual by both traditional measures (GDP growth) as well as more holistic measures (per capita growth).

2. In a number of important sectors, such as agriculture, buildings, forestry and transport, a green economy delivers more jobs in the short, medium and long-term than business-as-usual.
3. Public investment will be required to jump-start an effective transition to a green economy. There is much more private capital available than the financial resources of the public sector.

2.12.7 OECD, 2011. Towards Green Growth (Report)

Greening growth will require much more efficient use of resources to minimize environmental pressures. Efficient resource use and management is a core goal of economic policy and many fiscal and regulatory interventions that are not normally associated with a “green” agenda will be involved.

Main Findings:

Strategies for green growth need a long-term vision incorporating:

- Diagnosis of key constraints limiting returns to green investment and innovation.
- An assessment of environmental conditions and risks going forward.
- Links to structural economic reform priorities.
- Stakeholder engagement and cost-benefit analysis.
- Regular review of policies and measurement of progress

2.12.8 Villa Valmer, 2012. Towards Green growth in the Mediterranean countries, Implementing Policies to enhance the productivity of the natural assets, CMI (center for Mediterranean Integration) World Bank MED (Report).

Green growth offers a way to achieve sustainable development by enhancing productivity of natural assets while preventing the negative social consequences of environmental degradation.

Main Findings:

Governments should:

- Promote energy and water efficiency as top priorities.
- Get prices right for water, energy and Land by making sure they reflect social costs and other externalities of resource use.

2.12.9 UN DESA and UNDP, 2012. Synthesis of National Reports for RIO+20 (Report).

Many countries have made substantial progress over the last twenty years in establishing and strengthening the institutional frameworks necessary to ensure sustainable development. The progress made on the conceptual and institutional levels in the two decades that followed the Earth Summit represents a significant achievement.

Main Findings:

Based on this analysis of the national reports, it is possible to identify five suggested priority areas for advancing sustainable development:

1. Strengthening institutions and governance systems and building capacities for collaboration and coordination.
2. Unpacking and operationalizing the “green economy.
3. Reinforcing the connection between the SD agenda and the MDGs.
4. Meaningfully engaging stakeholders, including governments, civil society, and the private Sector.
5. Measuring development progress in a way that looks across the three pillars of sustainable development.

2.12.10 Karen Chapple, 2008. Defining the Green Economy: A Primer on Green Economic Development, University of California, Berkeley (Research)

Main findings:

1. Cities and states should consider enacting policies such as green building standards with provisions for local purchasing and hiring.
2. Cities might stimulate consumption through green building policies, support for open space amenities, and technical assistance for retailers.

3. Local governments might look to sectors that have traditionally provided well-paying, career-track jobs, with established job training programs and relationships with unions, such as utilities and transportation.

2.12.11 Diana Alarcon and Christina Bodouoglou, 2011. Sustainable Agricultural Innovation Systems (SAIS) for Food Security and Green Economies UNRISD, conference Green Economy and Sustainable Development: Bringing Back the Social Dimension Geneva (paper).

The aggravation of global food insecurity and the recent famine in the Horn of Africa, coupled with growing international awareness over the risks of increasing greenhouse gas emissions and greater food price volatility, provide an opportunity to strengthen the political consensus necessary to accelerate the adoption of sustainable agricultural development strategies, including the necessary investments for implementation.

Main findings:

- Current agricultural technologies and practices are a major source of greenhouse gas emissions, land degradation, biodiversity loss, and water scarcity and pollution.
- Recent developments in the global food system provide a rare opportunity to advocate for radical changes in the institutions that govern agricultural development and to turn the focus of attention to the needs of small-scale farmers and rural women, particularly in poverty-struck and food-insecure countries.

2.12.12 Amalia Palma and Claudia Robles. 2011 The Green and the Social: How Far, How Close in Latin America, UNRISD conference Green Economy and Sustainable Development: Bringing Back the Social Dimension Geneva (Paper).

This paper has analyzed the social dimension of a green economy, discussing the extent to which this approach may lead to poverty-reduction and sustainable development in developing countries. Green jobs are often advocated as a key social dimension of a green economy. However, there are few guidelines for how these can

be promoted within countries so that they meet decent work standards, thus sustainably eradicating poverty.

Main Findings:

1. Investing in social assets becomes a crucial factor for poverty eradication in the long run. However, there is no guarantee that social spending will be kept equal and will rise among Latin American countries, particularly at times when GDP decreases.
2. A green economy comprises both expansive and inward economic cycles

2.12.13 Adnan A. Hezri and Rospidah Ghazali, 2011: Social Aspects of the Green Economy Goal in Malaysia: Studies of Agriculture, Renewable Energy, and Waste Initiatives UNRISD conference Green Economy and Sustainable Development: Bringing Back the Social Dimension, Geneva (Paper).

The paper proposes that seeking growth from pro-poor and pro-disadvantaged environmental investment should be considered as the key attribute of a green economy.

Main Findings:

1. The learning process should by no means be a one way communication. What the communities consider as best for their livelihood may turn out to be a bad choice for the environment.
2. As a precondition to establishing a participatory process on 'greening' local economies, the baseline conditions need to be well understood before strategizing community involvement.

2.12.14 Rula Majdalni, 2011. Developing the environmental goods and services in the Arab Region for transformation into a green ESCWA Beirut (Paper)

The paper concentrated on developing concepts of green economy, building consensus regarding its component in the Arab region and the policy mix capable of developing such an economy in the region. It also strived to build capacity in the development of a national environmental goods and services sector as a means of transformation into a green economy.

Main Findings:

1. Advised for a clearer definition and better understanding of the goals of the green economy to be achieved at the regional level, and raised concerns regarding the emergence of a dual approach, both sustainable development and green economy, and the possibility of the green economy approach taking precedence over sustainable development.
2. Concerns are to be raised regarding the adoption of an Arab initiative on green economy, which may be problematic given the disparities between Arab countries in terms of key economic sectors.
3. Many developing countries have limited access to private capital. A large amount of the funds needed for green investments at scale in the initial stages of the transition towards a green economy must come from new and innovative financing mechanisms

Chapter Three

Approach and Procedure

3.1 Methodology

Chapter 3 describes the main methodology applied in the research, including research approach, methods for data collection and data analysis.

In this study, the descriptive and analytical approach was used. This approach is based on the description of the phenomenon under study, as well as a review and analysis of national and sectors' plans and strategies, and reading in the International reports of United nations and Rio +20.

A critical analysis to the national development plan has been conducted, interviews with the senior decision makers have been conducted in order to collect data and information supporting the thesis main tool; two questionnaires were designed; one of them targeted junior decision makers in the Palestinian government, and the second targeted specialists in the field of economy, environment, agriculture and water in public organizations, NGOs, research institutions, and academics. Decision and policy makers with a direct relationship with sustainable development planning and the issues of green economy, water and agriculture were selected in addition to the academics and researchers in the fields of development and economy in three Palestinian Universities (Annajah, Bir Zeit and Al Quds). The collected data has been analyzed and displayed using the statistical package SPSS and Excel

3.2 Thesis approach

The thesis approach is mainly focused on the descriptive analytical (system analysis) methodology, which is a holistic type of research; that is breaking the problem into researchable parts and then aggregating the evaluation into an explanation of the whole. **(Clark, 2005)**

Depending on that the thesis problem "green economy possibility in Palestine" was divided into two parts; Part 1: Sustainable development and the national plans, Part 2: investing in natural capital (water and agriculture), and poverty issues and poverty eradication efforts.

To conduct the theoretical and practical research, the research approach applied in the thesis is as follows (see figure 3.1):

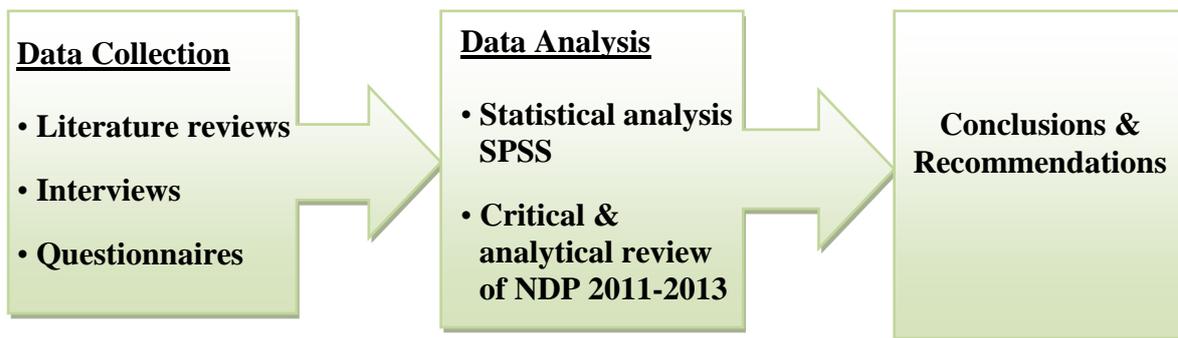


Figure 3.1: Thesis Approach

3.3 Methods for data collection

The data collection methods applied in the research includes:

Literature reviews: Literature reviews are usually used to identify the existing knowledge about a certain subject and what methods are useful for analyzing this subject (**Spicker 2006**). Examining how others have already researched the topic by literature review may help to form the research questions (**Berg 1995**). An extensive review of the relevant literature and academic documentation lays the groundwork for the theoretical framework of the research, as well as building up a broader theoretical base for the data analysis afterwards. Literature reviews in the research are applied in establishing the conceptual framework of the green economy, sustainable development, natural capital and Poverty Eradication.

Interviews: Interviews have proven to be “an effective method of collecting information for research questions” (**Berg 1995**). In the case study of the thesis research, interviews are conducted as “purposive conversations” as suggested by **Spicker (2006)** and play a key role of targeting the stakeholders and key actors and collect the information for an identified purpose, bridging a gap that the other sources of evidence are not able to accomplish. Interviews applied in the thesis research targeted the policy and decision makers in an aim to conduct a deeper investigation on the location of green economy and sustainable development in the national development policies and plans.

Questionnaires: Questionnaires are not limited to the schedule and availability of the interviewees. Besides, questionnaires can be developed in a more flexible way aiming to collect more comments and opinions from different people. The questionnaire developed in the case study of the research is of great significance for expanding the information and data base by receiving feedback from Palestinian NGO's, private sector, academies and researchers from different backgrounds. It is designed to gauge deferent opinions on the possibility of moving to green economy in Palestine thus to explore how much the NGO's, private sector, academics and researchers are familiar with the green economy concepts and its relation with poverty eradication.

3.4 Methods for data analysis

Methods for data analysis applied in the thesis research include:

Critical and analytical revision: for the Palestinian National Development Plan 2011-2013

Statistical analysis: The data collected through the questionnaires were analyzed using Excel spreadsheets and SPSS (Statistical Program for Social Science).

3.5 Thesis procedure

The descriptive and analytical methodology was followed in this study. Figure 3.2 shows the procedures that were followed to achieve the thesis methodology

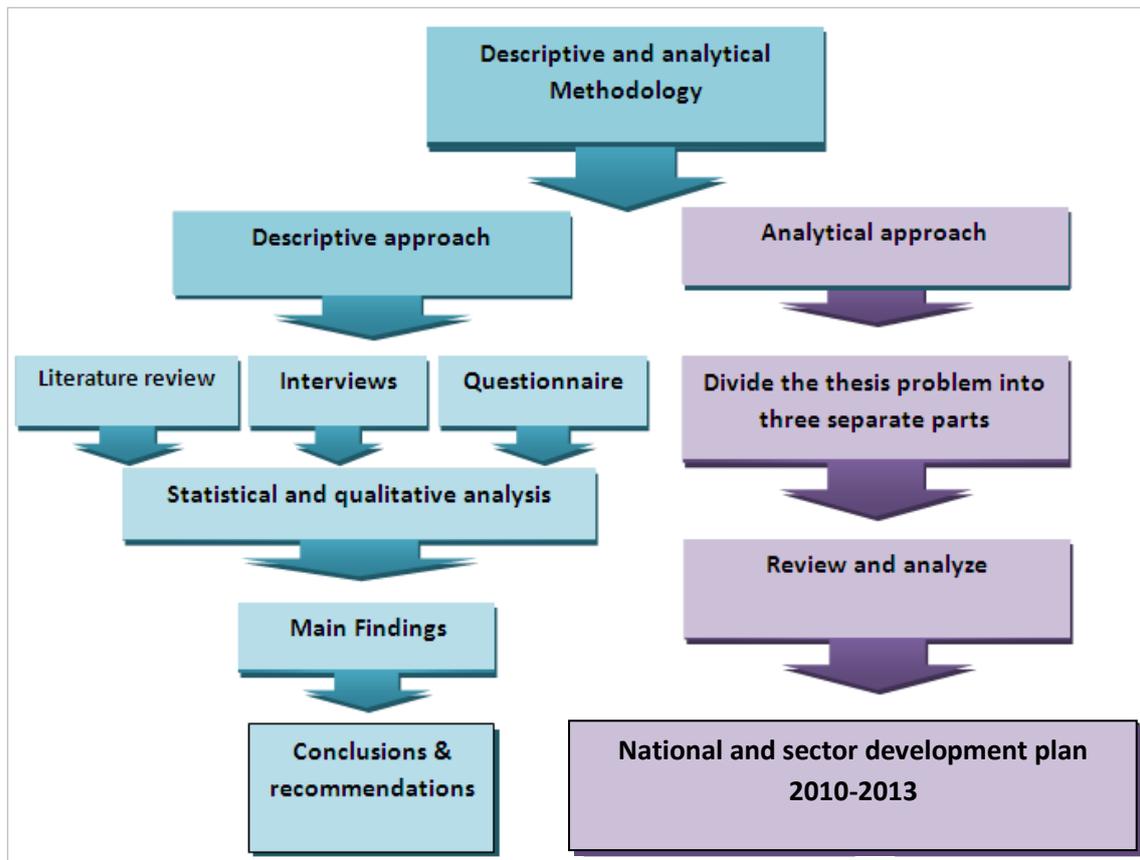


Figure 3.2: Thesis procedure

3.5.1 Questionnaires Design:

Both the questionnaire and interviews were used as methods of data collection; two questionnaires were designed to collect the data. The first questionnaire targeted the junior policy makers and planners in the governmental organizations and it was divided into two parts; Part one was to measure whether green economy was mainstreamed in the Palestinian national development plans; and part two was to measure how the national and sector plans were developed. The second questionnaire targeted the NGO's, private sector, academics and researchers. It was divided into three parts; part one measured the knowledge of green economy; the second part measured involvement in national plans formulating; and part three measured the knowledge of the link between green economy, natural capital and poverty eradication. Interviews were used with senior policy makers.

3.5.1.1 Governmental organizations questionnaire axes and paragraphs:

The governmental organization's questionnaire consists of two axes; the first axis is about mainstreaming the green economy in the Palestinian national development plan and it includes 77 paragraphs about knowledge of Palestinian national and sector development plans, Palestinian agriculture and water sector's development plans and priorities, means of measurement of the political commitment to move towards green economy modifications required to move towards green economy, and constrains to mainstream the green economy in the Palestinian national and sector development plan. Five-point Likert scale, (5) very important, (4) important (3) less important, (2) not important and (1) not sure, was used. The second axis is about how the national and sector plans were developed, and it consists of 26 paragraphs that include questions about the ways used to develop the Palestinian national and sector plans, the parties involved in formulating the plans, and the major barriers. Table (3.1) shows the governmental organizations questionnaire axes and paragraphs.

Table 3.1: Governmental organizations questionnaire axes and paragraphs

No.	Axes	Paragraph
1	Mainstreaming green economy in the national and sector plans	77
1.1	Knowledge of national development plan	6
1.2	Knowledge of sector development plan	6
1.3	Agriculture and water development plan	10
1.4	Measuring political commitment towards green economy	4
1.5	Required policy and institutional modification	7
1.6	Policy and institutional modifications required to move towards green economy	10
1.7	Constrains against mainstreaming green economy in the national development plan	9
1.8	Constrains against implementing agriculture and water plans within SD & GE	18

1.9	Priority areas of intervention to improve the national development plan Indicators to assess progress or gaps towards sustainable development	7
2	How was the national and sector plans developed	26
2.1	How was the national and sector development plans formulated	8
2.2	Involvement of the NGO's and academics and researchers in formulating the plans	6
2.3	Expectation of NGO's and other parties' involvement in formulating the plans	3
2.4	Barriers against moving towards green economy in Palestine	9

3.5.1.2 Non-governmental organizations, academics and researchers questionnaire axes and paragraphs:

The governmental organization's questionnaire consists of three axes; the first axis is about Knowledge of green economy and includes 45 paragraphs. The second axis is about national development plan and consists of 25 paragraphs. The third axis is about the link between green economy, natural capital and poverty eradication and it consists of 16 paragraphs. Table 3.5 shows the details of the non-governmental and academics and researchers questionnaire paragraphs and axes.

Table 3.2: Non-governmental organizations' academics and researchers questionnaire paragraphs and axes

No.	Axes	Paragraph
1	Knowledge of green economy	45
1.1	Understand the term of green economy	8
1.2	Link between green economy and sustainable development	5
1.3	Is it important for Palestine to move towards green economy	10
1.4	Main constrains against moving towards green economy	8
1.5	the most critical elements needed to be considered to change the Palestinian Economy to Green Economy	8

1.6	Is the legal environment good enough to cope with the desired changes	6
2	National development plan	25
2.1	Knowledge of national development plan and its level	6
2.2	Dialogue with the government in formulating the development plan	7
2.3	The expectation of NGO's involvement to strengthening move towards green economy	3
2.4	Barriers against moving towards green economy in Palestine	9
3	The link between green economy, natural capital and poverty eradication	16
3.1	Import sectors to be considered to build green economy in the context of poverty eradication	6
3.2	Important natural capital to invested to eradicate poverty	5
3.3	Natural capital investment contribution in poverty eradication	5

3.5.2 Questionnaires validity and reliability

Tool's validity means the ability of the tool to measure the subject it was created for (Deng & Dart, 1994). While reliability means that the test gives the same results when it is repeated on the same sample and under the same conditions the measurement results do not vary from case to case.

The research tool's validity was checked before distributing process. It was reviewed and arbitrated by professionals in the fields of environment, water, statistics and natural resources. They were supplied with the suggested drafts of the questionnaires before distributing them for data collection. The professional were asked to review the questionnaires and arbitrate them from both sides of form and content, and their

observations and opinions were followed to develop and adjust the questionnaires, and put it in the final image.

To test the thesis's tool's validity and reliability two methods were used; test and re-test method where exploratory questionnaires were distributed on a sample twice with two-week lag and then the correlation coefficient between answers was calculated for both times, and correlation coefficient was high (0.76), which is an indication of the reliability and validity of the questionnaire for the purposes of the thesis.

The Cronbach's alpha is a method to provide a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1. The Cronbach's alpha was used as a second method to measure the validity and reliability of the questionnaire as the questionnaire was distributed for a sample of 10 persons. Using the SPSS, the Cronbach's alpha for the thesis questionnaire was high "0.91":

$0.91 \times 0.91 = 0.8281 \longrightarrow 1 - 0.8281 = 0.17$ which means that the error variance (random error) was low "0.17" which means also that the questionnaire is reliable to be distributed for the whole sample.

For the purpose of conducting statistical analysis of the preliminary data of the thesis the statistical program Statistical Package for Social Research (SPSS) - has been used. Appropriate statistical methods and tools have been used such as the descriptive statistical analysis method in order to describe the study sample using percentages and frequency tables, mean and standard deviation in addition to using variance analysis

3.6 Study population and sample

The study population, targeted by the first questionnaire, consists of the governmental organizations' policy makers and planners (junior), and the population targeted by the second questionnaire consists of the heads and directors of the non-governmental organizations who are involved in the planning for sustainable development, natural capital issues and poverty issues, academics and researchers in the field of sustainable development, economic, environment or related fields. Tables 3.3 and 3.4 show the

study population for governmental organizations', researchers and academics' and NGO's questionnaires and the number of distributed and recovered questionnaires.

Table 3.3 Study sample for governmental organization questionnaire

Governmental organizations		
Organization name	No. of distributed questionnaires	No. of recovered questionnaires
Ministry of Planning	12	9
Ministry of Economy	5	3
Ministry of Agriculture	8	7
Environmental Quality Authority	5	3
Water Authority	3	3
PCBS	5	4
Sub total	38	29

Table 3.4 Study sample for NGO's private sector, academic and researchers' questionnaire

Academics and researchers		
Organization name	No. of distributed questionnaires	No. of recovered questionnaires
Annajah University	3	3
Birzeit University	5	3
Al Quds University	6	3
Polytechnic	3	0
Applied Research Institution – Jerusalem (ARIJ)	6	5
Sub total	23	14

Non-Governmental organizations		
PARC	8	8
Palestinian Hydrologic Group	6	6
House of water and environment	2	1
Palestinian Wastewater engineers group	1	0
Individual researchers	8	5
PADICO	3	1
Sub total	28	21
Total	89	64

For the governmental and non- governmental organizations the purposive sample was used either for the organizations and the respondents.

Chapter 4

Results and Discussion

This chapter includes a detailed review for the main results of the thesis

4.1 A critical and analytical review for the Palestinian national development plan 2011-2013

Given the main Thesis question as: Can the Palestinians achieve sustainable development and eradicate poverty through investing in the available natural capital? This is an attempt to look into the plan and see if it responds to this question, otherwise, where are the possibilities and opportunities for the PA in this regard.

A critical review of this document may not be completed or considered fair as the preparation of the document was originally based on a number of sector strategies and plans; among these were the agricultural and environmental sector strategies as well as the water and other sectors.

Therefore, the national strategy may not cover the details or the basis within each strategy which then requires a thorough investigation in each to be able to answer the above question.

In reference to the above issue, the most important strategy included within the plan is the agricultural related strategy which was built with a number of goals including among others: Palestine food security issue as one way of eradicating poverty.

The Palestinian National Authority (PNA) has started working towards Sustainable Development SD since its establishment through the various relevant institutions strategies and plans of action that were established. However, significant progress is hampered by the ongoing Israeli military occupation.

Together with the Israeli impacts, several overarching institutional challenges affect the attempt of achieving SD. The main challenges include:

- National sector classification differs from the three pillars of SD (environment is a cross-cutting theme, rather than a macro-sector by itself).
- Imposed conditional donor funding,

- Diversion of development assistance towards emergency funding – either as a result of real emergencies or out of a political motivation un-unified legislations, inactive Legislative Council,
- Inability to enforce laws in the whole oPt due to lack of sovereignty,
- “Parallel” structures in the WB and GS, and
- Human rights challenges.

Regardless of all above, a clear commitment towards sustainable development can be witnessed throughout the national development plan, some of the indicators and declarations for such commitment include:

- Protection of various human rights including the right to a well-balanced and a clean environment in the Basic Law;
- Inclusion of principles of good governance in the Basic Law;
- Development of various Palestinian Laws;
- Development of national strategic plans: the Palestinian Reform and Development Plan (PRDP) (2008-2011); Palestinian National Development Plan (NDP, 2011-2013) and 23 sector and cross-sector strategies;
- Development of 65 Strategic Development and Investment Plans in participation with the local community;
- Adaptation of the Millennium Development Goals (MDGs) and their integration in the Palestinian development plans.

The PA has developed a comprehensive agriculture strategy, A Shared Vision and a complementary Action Plan (2011-2013). These were developed through a consultative process including farmers – the key stakeholders. Efforts have also been made to ensure that gender is mainstreamed throughout the strategy and action plan. The agricultural strategy confirms that Food Security is a multi-sector challenge and that food security goes beyond the narrow concept of self-sufficiency.

The Occupied Palestine Territory belongs to the most food import dependant region in the world. The net food imports accounted for over 80 percent of national consumption and are projected to rise even further. This high reliance on imported

food can be attributed to both demand and supply side factors. Demand side factors are the rising population, whereas the supply side factors include limited basic natural resources such as land and water.

This lays an important responsibility on the agricultural sector, as agriculture addresses the root causes of food insecurity: rural poverty and food availability (production, processing and marketing). The fact that these activities are not coordinated, not adjusted to the real needs, is undermining structural solutions, especially in the agricultural sector.

Based on the above, the preparation of the agricultural strategy action plan has considered a number of priorities, among those are:

- Special attention to women, small farmers and poorest regions,
- Partnership projects between the public and private sectors, or those with high level of beneficiaries' contribution to costs,
- Availability of human and institutional capacities for implementation, within the limited time frame,
- Projects that lead to exploitation of natural resources in an efficient and sustainable manner, particularly the untapped resources, such as rainwater, brackish water, wastewater and uncultivated land.

These priority areas are among the known priorities and actions that can lead to a green economy shift in a country if implemented.

In other areas and especially in the infrastructure sector embedded in a number of strategies, the PA has also focused on the sustainable management of natural resources and protecting the environment. Further efforts towards sustainable use – such as reusing wastewater from treatment plants under development in Gaza and in the West Bank – will be key issues in water sustainability. Environmental protection laws, coupled with sufficient resources, and effective enforcement, will be important.

On the environmental sector, several achievements in the environmental management were observed in oPt that might be considered as the right direction towards green

economy shift. Among those, and can be the most important, is acknowledgement of a well-balanced and clean environment as one of the human rights in the Palestinian Basic Law. Further, the principle of sustainability has been introduced in the Basic Law by emphasizing that preservation and protection of the Palestinian environment from pollution, for the sake of present and future generation is a national duty.

4.1.1 Linkages of Desertification, Climate Change and Green Economy

The combating desertification strategy is one of the important achievements towards SD and highly linked to green economy. The improvement of a seemingly purely environmental aspect, desertification, is directly linked to improvements under all three pillars of SD, e.g. activities to alleviate poverty in rural areas. According to combating desertification strategy, there are 127 ongoing or recently completed projects that are of relevance to combating desertification, land degradation, and adaptation to drought in oPt, summing up to US\$ 86 million . These projects are distributed as follows; eleven on land use, 23 on livestock, 15 on water harvesting and storage, 49 on water management, and 29 on plant production and irrigation.

4.1.2 Green Economy in the Context of Sustainable Development and Poverty Eradication within the Palestinian National Plans.

Green economy in oPt is seen throughout the national plan largely as an economic approach that limits the negative impacts on the environment and foster environmental protection, thus providing a healthier, cleaner and well balanced environment for the benefit of the people. The United Nations defines Green Economy as “one in which the vital links between economy, society, and environment are taken into account and in which the transformation of production processes, production and consumption patterns, while contributing to a reduction per unit in reduced waste, pollution, and the use of resources, materials, and energy, waste, and pollution emission will revitalize and diversify economies, create decent employment opportunities, promote sustainable trade, reduce poverty, and improve equity and income distribution”.

The mixing between green economy and sustainable development within the plan and most of the Palestinian development plans was obvious. However there is still a lack of clarity within the concept of Green Economy (GE) especially when it comes to

designing projects towards its practical achievement, which has led to difficulties with developing a Palestinian definition. It is important to indicate that any definition of GE should not replace the concept of SD; rather it should be used as one of the tools for its achievement. It is important to study the opportunities and challenges of green economy, and the implementation tools for such a transition.

Although the GE definition is not clear in any national plan, there is an understanding on some of components that would fit within this concept, such as renewable energy, integrated resources management, green loans, green jobs, green buildings, green jobs, solid waste recycling, reuse of treated wastewater, and green agriculture. Although many concerns of how the concept would and could be utilized, there is an agreement that various aspects of green economy are applicable and in use in oPt. It is important to indicate that green agriculture was strongly advocated for by NGOs, while the government has strongly indicated interest in green energy. GE is not seen as a priority by the PNA, out of fear that a transition towards GE might reduce the economic growth, in addition to the obstacles being imposed by the Israeli occupation. This approach is contradictory to the one seen by NGOs, where a view prevails that GE can be a tool to achieving economic development while protecting the environment and the marginalized.

4.1.3 Green Agriculture

The agricultural strategy is one of the few strategies that address environmental, social and economic aspects. Agriculture is thus one of the few sectors, for which both the government and NGOs see the three pillars of SD (Economic, social and environment) could converge if proper policies and strategies are undertaken. Since most agricultural holdings are of small size, policies to develop the agricultural sector that focus on the small holders would have a direct beneficial effect on poverty reduction and food security. If, in addition, environmental aspects are integrated into such equitable agricultural development, a green agriculture for poverty eradication could emerge. Green agriculture would result in improving agricultural production efficiency and reducing waste production. Further, it would lead to sustainable management of natural resources, including land, water, fish stocks and biodiversity.

4.1.4 Palestinian Initiatives in Green Economy

To illustrate the new direction of the PA towards green economy, it should be made clear that almost all implementation plans developed by the different sectors and are considered as part of the national plans are referring to a number of initiatives that can be regarded as a green economy based initiative. Some of these may include composting – a tool for achieving green agriculture, recycling, green loans, green energy, green jobs, and green buildings.

4.1.5 Conclusion:

Regardless of the fact that the green economy concept is not clearly indicated within the Palestine national development plan, and that a definition is not officially there in any legal document, Palestine has taken a number of steps if built on could lead to poverty eradication as well as other goals and objectives of the green economy.

However, with the continuous Israeli occupation impacts on the livelihood and economy, achieving the goals may not be as expected in terms of time and magnitude. The PA is asked through this analysis to institutionalize and legalize all green economy initiatives to be able to magnify the expected outputs in the future. At the same time, a clear definition of green economy is expected, and the term is to be clearly embedded in the future PA plans and strategies.

4. 2 interviews tool analysis:

4.2.1 Agriculture

4.2.1.1. The link between investing in agriculture, eradicating poverty and achieving green economy and sustainable development in Palestine

Economic growth in Palestine and other developed countries are typically preceded by and based upon agricultural growth. Higher farm productivity enhanced producers' own incomes, in cash and in kind, and created demand for agricultural labor. This growth is multiplied in various ways: first, through backward linkages with an agricultural input supply sector; second, through forward linkages with agro-processing industries, transportation, and trade; and, third, through consumer linkages when enhanced rural prosperity that leads to new demands for goods and services.

Further, production of export crops brought foreign exchange. Finally, the availability of food at relatively low prices enabled the growing labor force to feed itself at modest wage rates. The reduced hunger among poor net food buyers, who spend more than half of their incomes on food, and facilitated other sectors to grow at the same time, while expanding national food demand kept food prices sufficiently high to encourage farmers to enhance productivity.

- a. The performance of irrigation water management with respect to economic growth and poverty reduction is greatest when complementary investments are made in related infrastructure and services. Thus, along with the investments in water resources development, there must be an investment in roads, agricultural related industries and services.
- b. Irrigation water, though critical, is only one of the factor inputs or services essential for enhancing farm productivity and income. Therefore, strengthening the support services such as agronomic research, extension system and financial services.

4.2.1.2. The main barriers against moving towards green economy in Palestine especially in the agriculture sector.

- a. With regard to Palestinian agriculture under occupation, often we hear that agricultural marketing is the biggest problem. The fact that this is not true because the surplus is only in a few crops, while suffering from a fatal deficiency in most of agricultural needs, which form the backbone of our food security, so we import it either from the occupier or from the outside. The problem lies in what and how we grow. Is it right to grow strategic crops in limited quantities; at a time in which we grow some other unnecessary unplanned crops in huge quantities with unsecured exportation; because we do not control the borders?
- b. The small agricultural holdings or what is known as fragmentation of properties is not the problem; since green and self-reliant agriculture encourage the return to smallholders. Our problem, then, lies in our lack of a national production policy that depends on the local production input.

c. Although Palestinian agriculture sector have an ambitious sector development plan that includes indirectly most of the green economy initiatives , still, the actual implementation of this plan is bound to several conditions:

- The limited natural resources (water in particular),
- The absence of full control on the natural capital (water and land) due to the occupation practices in dividing the Palestinian areas to (A,B and C) and the control on the underground water resources in addition to the obstacles the occupation put against establishing wastewater treatment plants that could serve the development of the agriculture sector,
- The lack of financial resources needed to move the agriculture sector into a green sector due to the limited governmental budget,
- The poor coordination between the several concerned ministries and governmental organizations,
- Under-level cooperation between the governmental and non-governmental, private and civil society organization and
- The unclear definition , concept and understanding of the term "green economy" and its relation to sustainable development

2.2.1.3. The importance for Palestine to go ahead towards green economy.

It is important for a country with limited resources such as Palestine to go forward towards sustainable development using green economy concept specially the investing in natural capital. As water and land are considered of the most important resources in Palestine, such a step could be reflected on the following aspects:

- a. Increase the productivity through increasing the cultivated lands using land reclamation and the fight against desertification,
- b. Fight unemployment by creating new job opportunities,
- c. Improve the quality of agriculture and production through using clean agricultural approaches and
- d. Increase the environmental quality through encouraging the organic agriculture, reuse the wastewater, decrease chemical fertilizers use.

4.2.1.4. Pre-requisites for agriculture sector to go ahead toward green economy

- a. A higher political commitment in both planning and implementation levels.
- b. A higher level of coordination and cooperation among the concerned ministries and governmental organizations and unifying efforts to achieve sustainable development.
- c. Special institutional, organizational, legal, and regulatory mechanisms that enhance the functioning of farming to marketing need to be instituted.
- d. Public awareness to spread the term and principles of Green economy using media.
- e. A higher level of engagement and involvement of the concerned NGO's, private sector and individuals on both planning and implementation levels.
- f. Allocate public funds to targeted agricultural growth as an investment with sufficient economic returns and as an effective way to trigger overall economic growth and to improve the wellbeing of the Palestinian poor.

4.2.2. Water and wastewater

One sector that, by receiving the deserved attention and investments, will provide high levels of economic, social and environmental returns and can thus be a building block for the new Green Economy is water. Investments in safe drinking water and sanitation are a path to economic growth.

4.2.2.1. The link between investing in water, eradicating poverty and achieving green economy and sustainable development in Palestine

Regarding the Fresh water: Although the Fresh water resources in Palestine are very limited and controlled in most of the time by Israeli occupation, the

- a. Success of green economy depends on sustainable management of water resources and on safe and sustainable provisioning of water supply.
- b. Investment in water infrastructure in order to deliver water and to process wastewater both from individuals and from business could lead to many job opportunities.

- c. Investing in clean water lead to healthier population and reduce the expenses on health sectors to be invested in more development aspects, as when people get sick they cannot work and more cost expenditure on medical treatment is needed.
- d. Investing in maintaining the water supply networks reduce the huge quantities of lost water due to the damaged water supply networks, the matter that leads to reduce the price of water for the consumer.
- e. Investments in water infrastructure and water policy reform are urgently needed to increase water supply and efficiency.
- f. Investing in water reaps high levels of economic, social and environmental returns.

Regarding the wastewater:

Fresh water is a scarce resource in Palestine for drinking purposes, food production and many other uses. Although water scarcity is a major driving force for water reuse for a range of options, wastewater treatment and reuse/disposal is critically important in water abundant areas for environmental reasons. Regardless of the freshwater availability in a typical setting, there is a need to manage (collect, treat and reuse/dispose) wastewater. Reusing water, after an appropriate treatment which fits the reuse purpose, supports the resilience of human and natural systems under water stress and can also offer an alternative and affordable source of water.

Investing in wastewater could leads to many advantages including poverty eradication:

- a. Health and social benefits: The existence of sewage collection network and waste water treatment plants can significantly reduce the risks of health problems such as diarrheal diseases, dysentery etc. There are also social benefits through reduced odor, improved water quality for the use in domestic activities.
- b. Treated wastewater can be used in agriculture, industry, stone industries etc., so clean water will be preserved for drinking purposes. On the other side treated wastewater used in agriculture encourage farmers to expand cultivated lands which lead to maximizing production and more job opportunities and increase income.

- c. Water treatment plants create many job opportunities.

4.2.2.2. Main barriers against moving towards green economy in Palestine especially in the water sector

- There is lack of consistent and significant information that can quantitatively provide a way forward for decision makers to act in favor of wastewater management.
- Lack of institutional capacity to execute wastewater management measures. These include lack of autonomy on financial, technical and human resources and a backing of clear regulations for the execution of various activities in wastewater management.
- Lack of plans, strategies and platforms for coordination, collaboration and cooperation of institutions, and stakeholders in the water and wastewater sector.
- Lack of the public education component on the importance of adequate wastewater management and the consequences of its absence.
- Lack of clear mechanisms as to how the costs of providing wastewater management services are going to be recovered ;
- Lack of cooperation between public and private sectors.
- Lack of the transfer of affordable, effective and financially feasible technologies.
- Lack of capacity at community level to manage and operate services, in order to ensure sustainability in operations and to yield expected desired results.

4.2.2.3. Importance of green economy for Palestine especially in water sector

- a. Investing in water and wastewater is important for the protection of the environment as wastewater treatment prevent groundwater pollution, soil pollution and other environmental pollution.
- b. Maintaining the right of citizens for access to clean water by maintaining clean water networks and infrastructure.
- c. Using treated wastewater in agriculture and industry preserve clean water to be used for drinking.

4.2.2.4. Pre-requisites for water sector to go ahead toward green economy

- a. Re-design the role of government as investor in water infrastructure, also building capacity for sustainable project implementation.
- b. Integrate government's role as water regulator and as investor, in order to provide an optimal legal and institutional environment for investments in wastewater and water infrastructure that contribute to poverty alleviation.
- c. Measuring poverty reduction impacts of investments in water and wastewater is required.
- d. Public awareness for the safe use of treated water in many activities.
- e. Overcome the occupation barriers against establishing wastewater treatment plant all over the Palestinian state.

4.3 Governmental questionnaire analysis:

The questionnaire for the governmental organizations targeted the junior decision and policy makers (director general and above except the minister). The Governmental organizations questionnaire consists of two parts. The first part contained 9 questions:

4.3.1 Measuring the knowledge of the junior decision and policy makers of Palestinian national development plan:

About 96.6% of the respondents knew about the existence of the Palestinian development plan, and 3.4% did not know about it.

Table 4.1: Respondents Answers about Their Knowledge of Availability of National Development Plan

Respondents answers	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	28	96.6	96.6	96.6
No	1	3.4	3.4	100.0
Total	29	100.0	100.0	

Regarding mentioning green economy in the national development plan, the following table illustrates the respondents' answers.

Table 4.2: Respondents Answers about Mentioning Green Economy in the National Development Plan

Respondents answers	Frequency	Percent	Valid Percent	Cumulative Percent
The plan includes green economy as a priority to achieve sustainable development	1	3.6	3.6	3.6
It includes general statements on the role of green economy	2	7.1	7.1	10.7
The plan makes reference to green economy, but not as an instrument to sustainable development	4	14.3	14.3	25.0
The national development plan makes no reference to green economy	21	75	75.0	100.0
Total	28	100.0	100.0	

4.3.2 Measuring the knowledge of the junior decision and policy makers of Palestinian sectors' plans

About 96.6 % of the respondents knew about the availability of the Palestinian sector development plan, and 3.4 % did not know about it.

Table 4.3: Respondents Answers about their Knowledge of Availability of Sector Development Plans

Respondents answers	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	28	96.6	96.6	96.6
No	1	3.4	3.4	100.0
Total	29	100.0	100.0	

Regarding mentioning green economy in the sector development plan, about 75% of the respondents who answered yes in the previous question answered that the sector

development plan make no reference to the green economy. Also 14.3%) of the respondent answered that the sector development plan makes reference to green economy, but not as an instrument to sustainable development

Table 4.4: Respondents Answers about Mentioning Green Economy in the Sectors Development Plans

Respondents answers	Frequency	Percent	Valid Percent	Cumulative Percent
strategy includes green economy as a priority to achieve sustainable development	1	3.6	3.6	3.6
includes general statements on the role of green economy	2	7.1	7.1	10.7
plan makes reference to green economy, but not as an instrument to sustainable development	4	14.3	14.3	25.0
The national development plan makes no reference to green economy	21	75	75.0	100.0
Total	28	100.0	100.0	

4.3.3. Measuring the knowledge of the junior decision and policy makers of the existence of a strategic or sector development plan for agriculture and/or water sectors.

About 96.6% of the respondents answered that they know about the agriculture and/or water sector plan, 3.4% answered that they don't know about it.

Table 4.5: Respondents Answers about Their Knowledge of Availability of Sector Development Plan for Agriculture/Water

Respondents answers	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	28	96.6	96.6	96.6
No	1	3.4	3.4	100.0
Total	29	100.0	100.0	

Among those who answered yes, 100 % mentioned that there are sector plans for both sectors; agriculture and water.

Also, those who answered yes mentioned priorities in the agriculture and/or water sector plans. Table (4.6) shows these priorities with their frequencies and percentages.

Table 4.6: Priorities in the Sector Plan of Agriculture and/or Water

Priority	Frequency	Percentage
Job creation, poverty eradication and organization building	17	60.7%
Only Institutional building and poverty eradications	7	25.0%
Job creation, and organization building	3	10.7%
Green economy and sustainable development	1	03.6%
Total	28	100%

4.3.4 The political commitment towards green economy and sustainable development and their relation with poverty eradication,

Six respondents (about 20.6 %) of the respondents mentioned that there are objective ways for measuring political commitment towards green economy and sustainable development and their relation with poverty eradication. On the other hand 23 respondents (about 79.3%) of the respondents disclaim such ways. Among those who said yes, mentioned indicators of policy commitment towards green economy and sustainable development and their relation with poverty eradication.

Table 4.7: Indicators of Political Commitments Towards Green Economy and Sustainable Development and their Relation with Poverty Eradication

Indicator	Frequency	%
percentage of agriculture labor to total labor force	1	16.69%
percentage of poor depending on consumption patterns	1	16.69%
labor force participation	1	16.69%
GDP	3	50.0%
Total	6	100%

4.3.5 Investigate if any institutional modifications required to be done in order to move towards green economy in Palestine.

Twenty one respondents (about 72.4%) of the respondents agreed that modifications need to be done and 8 respondents (about 27.6%) of the respondents denied that.

Those who agreed classified the required modifications as shown in table (4.8):

Table 4.8: Modifications Required to Moving Towards Green Economy in Palestine from the Governmental Organization Point of View

Modifications	Frequency	%
Merge institutions, Streamline institutions, Establish new institutions	5	23.8
Improve coordination among existing institutions, Merge institutions, Streamline institutions	5	23.8
Establish new institutions, Streamline institutions, Change mandate(s) of institution(s)	3	14.3
Change mandate(s) of institution(s), Improve coordination among existing institutions, Merge institutions	2	9.5
Merge institutions, Streamline institutions, Establish new institutions, Change mandate(s) of institution(s), Improve coordination among existing institutions	6	28.6
Total	21	100

4.3.6 Measure and rate the main constrains to mainstream green economy in the Palestinian national development plan

The respondents' answers were as shown in table (4.9).

Table 4.9: Respondents Answers Regarding the Main Constraints to Mainstream Green Economy in the Palestinian National/Sector Development Plans

	N	Mean	Std. Deviation
Legislation	29	4.90	0.310
low priority within the Ministry	29	4.03	0.981
Budgetary allocation to SD&GE	29	4.17	0.848
inadequate coordination between ministries	29	4.41	0.568
Low level of media interest	29	3.86	0.789
Low private and NGO's involvement	29	3.90	0.939
lack of data and limited knowledge	29	4.28	0.751
inadequate or unpredictable international support	29	3.59	0.911
inadequate public awareness or engagement	29	3.93	0.923
Total	29	4.12	0.780

4.3.7 Measure and rate the main constraints to agriculture and water sector plans using GE as an instrument to sustainable development,

The respondent answers were as shown in table (4.10).

The most important constraint with a mean of 4.62 was the occupation procedure, and then the lack of experience and the second constraint with a mean of 4.48 and the third is the laws and legislations with a mean of 4.41.

Table 4.10: Respondents Answers Regarding the Main Constraints for Using GE in the Agricultural/Water Plans

	N	Mean	Std. Deviation
Lack of experience	29	4.48	0.634
Limited resources	29	3.97	0.552
Inadequate budget	29	4.21	0.546
Inadequate external support	29	3.52	0.785
Access to external finance	29	3.52	0.871
Laws and legislations	29	4.41	0.780
Occupation procedures	29	4.62	0.561
Informal restrictions	29	4.14	0.875
Total	29	4.11	0.591

4.3.7 Ranking Palestinian priority areas of intervention that would improve the national capacity to benefit from sector strategy for agriculture/and or water.

Three main sectors were identified and each has a number of sub-sectors. The respondents ranked the highest three priorities from their point of view considering (1) as the highest rank.

In the policy and regulations sector the highest three priorities were in sequence: policy and administration management with a mean of 1.38, training and education with a mean of 1.21 and new regulations with a mean of 0.93.

In the sector of natural capital investment, the highest three priorities were in sequence: Agriculture with a mean of 1.17, job creation with a mean of 1.10 and wastewater treatment and reuse with a mean of 1.07.

In building institutions sector, the three highest priorities were ranked as follows: poverty eradication issues with a mean of 1.76, sustainable development issues with a mean of 1.52 and land use and urban planning issues with a mean of 1.41.

Table 4.11: Ranking Palestinian priority areas of intervention that would improve the national capacity to benefit from sector strategy for agriculture/and or water.

Sectors	Sub-sectors	Mean	Std. Deviation
policy and regulations	Policy and admin. management	1.38	0.416
	New regulations	0.93	0.099
	Training and education	1.21	0.626
	Awareness	0.90	0.430
	SD&GE-related adjustment	0.69	0.212
Natural capital investment	Wastewater treatment and reuse	1.07	0.632
	Investing in clean water	1.03	0.236
	Job creation	1.10	0.210
	Increase productivity	0.66	0.043
	Forestry & fisheries develop.	0.21	0.559
	Agriculture	1.17	0.141
Building Institutional capacity	The sustainable development issues	1.52	0.555
	Green economy and growth issues	0.48	0.738
	Poverty eradication issues	1.76	0.091
	Land use and urban planning issues	1.41	0.096

4.3.8 Indicators or information on sustainable development have proven to be most useful for assessing gaps and progress towards sustainable development.

The results show that the main three indicators are comprehensive indicators (e.g. MDGs) with a mean of 4.31, environmental indicators with a mean of 4.24 and economic indicators with a mean of 4.21.

Table 4.12: Indicators of Sustainable Development have Proven to be Most Useful for Assessing Gaps and Progress Towards Sustainable Development

Indicators	Mean	Std. Deviation
Economic Indicators (e.g., GDP growth, trade performance)	4.21	0.828
Comprehensive Indicators (e.g, MDGs)	4.31	0.899
Poverty Indicators	3.76	0.911
Environmental Indicators	4.24	0.877
Social Indicators (e.g., Unemployment, life expectancy)	3.97	0.882
Results of Public Opinion Surveys	4.03	0.752
Others	3.90	0.829
Total	4.06	0.854

The second part of the governmental organizations questionnaire discussed how was national and sector plans developed and it contained 4 questions:

4.3.9 How the Palestinian national and/or sector development plans developed.

The answer with highest mean was for " the regional development plans are agreed upon through meetings of members and convened by the member holding the presidency", this answer's mean was 4.334, the second answer was for "the participatory approach" with a mean of 3.03 then in the third place came the answer "each policy area is served by a standing committee of national experts" with a mean of 2.76.

**Table 4.13: Respondents Answers about the Way the Development Plans
Developed**

Developing plans methods	N	Mean	Std. Deviation
<i>Ad hoc</i> meetings of national experts on specific topics	29	0.66	0.512
Meetings of national experts on the basis of decisions taken at summits of heads of states	29	0.34	0.766
There is a standing committee responsible for policies and strategies	29	1.14	0.656
National experts meet in standing committees on policy areas	29	1.38	0.801
Each policy area is served by standing committees of national experts	29	2.76	0.776
Regional development plans are agreed upon through meetings of members and convened by the member holding the presidency	29	4.34	0.432
Donor driven and international expert input	29	2.17	0.218
Participatory approach	29	3.03	0.718
Total	29	1.98	0.879

4.3.10. Engaging in dialogue with the private sector and NGO's in the formulation of national and sector plans

About 79.3% of the respondents answered with yes and 20.7% answered with no. Those who answered yes specified with whom this dialogue as follows: an average of 1.93 of the respondents mentioned that they had dialogue with "individuals and other NGO's." the second answer with a mean of 1.03 was for the "National private sector and NGO's committee". The third answer with a mean of 0.83 was for "National Sector associations".

Table 4.14: Respondents Answers regarding Engaging in Dialogue with the Private Sector and NGO's in the Formulation of National and Sector Plans.

Respondents answers	Mean	Std. Deviation
Regional private sector and NGO's committee	0.31	0.471
National private sector and NGO's committee	1.03	0.121
National sector associations	0.83	0.681
Individuals and other NGO's	1.93	0.242
Total	1.025	0.379

4.3.11. How can local cooperation strengthen support for green economy and sustainable development?

"What are your expectations for NGO's and private sector's roles in this regard? This was an open ended question were the respondents expressed different expectations from the NGO's and private sectors to support the green economy and sustainable development, the most important issues the respondents mentioned were:

- Spread out the term and concepts of green economy,
- Better planning process,
- Improve the international financial and technical support,
- Improve the institutional performance of the governmental organizations,
- Encourage joint projects among the GO's, NGO's and private sector in the fields of sustainable development,
- Increase Awareness,
- Good environmental impacts specially on water and agriculture

4.3.12. The major barriers to implementation of moving towards green economy

. The respondents answers where as shown in table 4.15

The "Inadequate coordination between ministries" and "the low political priority for integrated decision making' have the highest mean among the answers of the respondents with a mean of 4.59, in the second place "the lack of experience" and

"the Inadequate NGO's and private sector involvement" with a mean of 4.34, and in the third place the "Inadequate public awareness or engagement" with a mean of 3.93.

Table 4.15: Respondents Answers Regarding the Major Barriers to Implementation of Moving Towards Green Economy

	Mean	Std. Deviation
Inadequate coordination between ministries	4.59	0.682
Low political priority for integrated decision making	4.59	0.682
Problems created by slow growth	3.62	0.775
Lack of expertise	4.34	0.721
Lack of data	3.52	0.871
Inadequate or unpredictable international support	3.90	0.081
Inadequate public awareness or engagement	3.93	0.923
Inadequate NGO's and private sector involvement	4.34	0.721
Total	4.07	0.682

4.4 Non-governmental, academics, researchers' questionnaire analysis:

The non- governmental, academics and researchers questionnaire of those organizations and individuals involved in the development, environment, economy and agriculture sectors. The questionnaire consists of 3 parts. The following are the analyses of each part's questions. The first part of the questionnaire measured the knowledge of green economy and consists of 6 questions.

4.4.1 Understanding of the meaning of the term "green economy" in the context of sustainable development and poverty eradication

Among the 35 respondents, 34 (about 97.1) understand the meaning of the term "green economy and only one didn't. The 34 respondents know that the term of green economy means "a combination of environmental, social and economic issues".

Table 4.16: Respondents Answers about Understanding the Term of "Green Economy"

Respondents answers	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	34	97.1	97.1	97.1
No	1	2.9	2.9	100.0
Total	35	100.0	100.0	

4.4.2 Is green economy linked to sustainable development, and how

Thirty two of the respondents (about 91.4%) said that the green economy is linked to sustainable development and 3 of them (about 8.6%) said that there isn't a link between them.

Of the 24 respondents (about 75%) who answered yes, said that green economy is a tool to sustainable development, while 8 respondents (about 25%) of those who answered yes said that green economy is a supplement to the sustainable development

Table 4.17: Respondents' Answers about the Availability of a Link Between Green Economy and Sustainable Development

Respondents answers	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	32	91.4	91.4	91.4
No	3	8.6	8.6	100.0
Total	35	100.0	100.0	

Table 4.18: Respondents' Answers about the Type of Link Between Green Economy and Sustainable Development

Respondents answers	Frequency	%	Valid Percent	Cumulative Percent
Green economy is an alternative to sustainable development	0	.0	.0	.0
Green economy is a supplement to sustainable development	8	25.0	25.0	25.0
Green economy is a tool to sustainable development	24	75.0	75.0	100.0
Total	32	100.0	100.0	

4.4.3 The Respondents opinion on the importance of moving towards green economy for Palestine, whose responsibility and, if Palestine can move ahead towards green economy?

Twenty seven respondents, about 77.1% said it is important for Palestine to move towards green economy while 8 respondents about 22.9 said it is not important. Among those who answered yes about 81.5% said that it is the government, the NGO's the academics and researchers' together responsibility to move Palestine towards green economy, while 18.5% said it is the government alone responsibility.

Table 4.19: Respondents answers regarding the importance for Palestine to move towards green economy

Respondents answers	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	27	77.1	77.1	77.1
No	8	22.9	22.9	100.0
Total	35	100.0	100.0	

Table 4.20: Respondents Answers about Whose Responsibility to Move Palestine Towards Green Economy

Respondents answers	Frequency	Percent	Valid Percent	Cumulative Percent
Governments	5	18.5	18.5	18.5
NGO's	0	.0	.0	18.5
Academic and researchers	0	.0	.0	18.5
All	22	81.5	81.5	100.0
Total	27	100.0	100.0	

About 59.3% of the respondents who said it is important for Palestine to move towards green economy mentioned that Palestine is ready to move towards green economy but slowly, 18.5% mentioned that Palestine is not ready yet to move towards green economy and 18.5% said Palestine is ready immediately to move towards green economy.

Table 4.21: Respondents Answers about How ready Palestine is to Move Towards Green Economy

Respondents Answers	Frequency	Percent	Valid Percent	Cumulative Percent
No, not yet	5	18.5	18.5	18.5
Yes, but slowly	16	59.3	59.3	77.8
Yes, Immediately	5	18.5	18.5	87.3
Others	1	3.7	3.7	100.0
Total	27	100.0	100.0	

4.4.4 The main constraints to move towards green economy in Palestine

With a mean of 4.69 the answer "Elaborating and implementation of plans, strategies, programs and projects to SD and GE" was the most important constraint against

moving towards green economy, while 4.46% was for the answer "legislations", and in the third place "Budgetary allocation for SD & GE".

Table 4.22: Respondents Answers for the Main Constrains to Move Towards Green Economy

Respondents Answers	Mean	Std. Deviation
Legislation	4.46	0.657
Elaboration and implementation of plans, strategies, programs and projects to SD&GE	4.69	0.471
Budgetary allocation to SD&GE	4.31	0.796
Establishment of dedicated institution at high level decision making	4.20	0.933
Level of media interest	3.66	0.725
Private and NGO's involvement	3.89	0.134
Israeli occupation	3.89	0.993
Total	4.16	0.673

4.4.5 The most critical elements needs to be considered to change the Palestinian economy to green economy

With a mean of 4.63 the respondents pointed to "governmental non-governmental and private sector collaboration" as the most important element that needs to be considered to change the Palestinian economy to a green economy, then with equal means of 4.37 the points "Improve the national development plan", "Improve the sector plan" and "awareness" took the second place of importance, and in the third place of importance came the neighborhood experience transfer with a mean of 4.17.

Table 4.23: Respondents Answers for Elements to Be Considered for Change

	Mean	Std. Deviation
Improve the national development plans	4.37	0.490
Improve the sector development plans	4.37	0.770
Awareness	4.37	0.547
Media collaboration	3.80	0.719
GO's, NGO's and private sector collaboration	4.63	0.490
International aid	3.66	0.998
Neighbourhood experience transfer	4.17	0.568
Institutional building	4.31	0.471
Total	4.21	0.632

4.4.6 The most critical elements needs to be considered to change the Palestinian economy to green economy

About 77.1% of the respondents said that the legal environment is not suitable to cope with the desired changes to move towards green economy, while 22.9 said it is suitable.

Table 4.24: Respondents Answers about the Legal Environment Suitability to Cope with Changes Needed to Move Towards Green Economy

Respondents answers	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	8	22.9	22.9	22.9
No	27	77.1	77.1	100.0
Total	35	100.0	100.0	

Among those who think the legal environment is not suitable to cope with the desired changes to move towards green economy, 33.3% think that there is a need to modify the current laws and legislations, 26.0% think that there is a need to activate some un-

activated laws and legislation, while 22.2% think that new laws and legislations are needed.

Table 4.25: Respondents Answers about the Changes Needed in the Legal Environment to Be Suitable for Moving Towards Green Economy

	Frequency	Percent	Valid Percent	Cumulative Percent
New laws and legislations	6	22.2	22.2	22.2
Modify the current laws and legislations	9	33.3	33.3	55.5
Activate some un-activated laws and legislations	7	26.0	26.0	81.5
Give legal authorization to the concerned organization	5	18.5	18.5	100.0
Total	27	100.0	100.0	

The second part of the questionnaire investigated the knowledge of the Palestinian National Development plan and consists of 4 questions:

4.4.7 The respondent previous knowledge of the national development plan and the level of knowledge

Almost 71.4% of the respondents were familiar or reviewed the Palestinian national development plan while 28.6% were not familiar with it or never reviewed it.

Table 4.26: Respondents Answers about Their Previous Knowledge of Palestinian National Development Plan

Respondents Answers	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	25	71.4	71.4	71.4
No	10	28.6	28.6	100.0
Total	35	100.0	100.0	

Among those who are familiar with the national development plan 32% was just heard about it, 28% shared in formulating it at some stage and 24% reviewed it roughly.

Table 4.27: Respondents Answers about Their Level of Knowledge of Palestinian National Development Plan

Respondents Answers	Frequency	Percent	Valid Percent	Cumulative Percent
Just heard about it	8	32.0	32.0	32.0
Reviewed it roughly	6	24.0	24.0	56.0
Studied it carefully	4	16.0	16.0	72.0
Shared in formulating it at some stage	7	28.0	28.0	100.0
Total	25	100.0	100.0	

4.4.8 If the respondents entered in a dialogue with the government for formulating the national development plan, and with whom

About 51% of the respondent entered in a dialogue with the government for formulating the national development plan at some stage, while 48.6% didn't enter in any kind of dialogue with the government for formulating the national development plan at any stage.

Table 4.28: Respondents Answer Regarding Entering in a Dialogue with the Government for Formulating the National Development Plan

Respondents Answers	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	18	51.4	51.4	51.4
No	17	48.6	48.6	100.0
Total	35	100.0	100.0	

Among those who entered in a dialogue with the government for formulating the national development plan 72.2% had entered in the dialogue through national sector associations, 22.2% as individuals from NGO's, private sector, academics and researchers.

Table 4.29: Respondents Answers about the Way they Entered the Dialogue with the Government for Formulating the National Development Plan

Respondents answers	Frequency	Percent	Valid Percent	Cumulative Percent
Regional private sector and NGO's committee	1	5.6	5.6	5.6
National sector associations	13	72.2	72.2	77.8
National private sector and NGO's committee	0	.0	.0	77.8
Advisory committee from academics and researchers	0	.0	.0	77.8
Individuals from NGO's, private sectors, academics and researchers	4	22.2	22.2	100.0
Total	18	100.0	100.0	

4.4.9 The expectations for NGO's and private sector's roles in moving towards green economy

- Sharing in national plans formulation for wider vision.
- Implementing projects and programs under the green economy term.
- Promoting for investing in natural capital to reduce poverty.
- Refuse conditioned finance for their projects unless it suits their agenda.
- Networking with ministries and other governmental organizations to move Palestine towards green economy.
- Awareness campaign with Palestinian society towards moving to green economy and its benefits.

4.4.10 The major barriers to implement moving towards green economy in Palestine

The most important barrier against moving towards green economy from the NGO's, academics and researchers' and private sectors point of view was the "Inadequate coordination among ministries with a mean of 4.66, then the "low political priority for integrated decision making" with a mean of 4.37, and in the third place "Problems created by slow growth" with a mean of 4.23.

Table 4.30: Respondents Answers Regarding the Major Barriers against Moving Towards Green Economy

Respondents Answers	Mean	Std. Deviation
Inadequate coordination among ministries	4.66	0.684
Low political priority for integrated decision making	4.37	0.490
Problems created by slow growth	4.23	0.808
Lack of expertise	3.57	0.655
Lack of data	4.00	0.686
Inadequate or unpredictable international support	3.43	0.608
Inadequate public awareness or engagement	4.11	0.631
Inadequate NGO's and private sector involvement	4.11	0.631
Total	4.06	0.649

The third part of the questionnaire is about the link between green economy, natural capital and poverty eradication.

4.4.11 The economic sectors considered to be most important to build a green economy in the context of sustainable development and poverty eradication

The respondents gave the highest importance for the water sector to be invested in to build green economy with a mean of 4.37, in the second place came the agriculture sector with a mean of 4.29 and in the third place came the energy sector with a mean of 3.69.

Table 4.31: Respondents Answer Regarding the Most Important Sector to be Invested in to Achieve Green Economy

Respondents Answers	Mean	Std. Deviation
Agriculture	4.29	0.612
Water	4.37	0.664
Tourism	3.31	0.416
Energy	3.69	0.733
Trade	3.46	0.613
Total	3.82	0.608

4.4.12 Natural capital could be invested mostly to eradicate poverty

With a mean of 1.8%, investing in water and wastewater as a natural capital can lead to poverty eradication while agriculture came secondly with a mean of 1.00.

Table 4.32: Respondents Answers Regarding Natural Capitals that could Be Invested Mostly to Lead to Poverty Eradication

Respondents answers	Mean	Std. Deviation
Agriculture	1.00	0.000
Water & water recycling	1.80	0.584
Fisheries	0.77	0.330
forests	0.37	0.060
Total	0.99	0.244

4.4.13 Sectors' contribution to poverty eradication, other specific sustainable development goals?

Maximize production, with a mean of 2.14, is the most recognized contribution for investing in natural capital to eradicate poverty, then income maximizing with a mean of 1.26 and job creation in the third place with a mean of 1.00.

Table 4.33: Respondents Answers Regarding the Investing in Natural Capital Contribution in Poverty Eradication

Respondents Answers	Mean	Std. Deviation
Job creation	1.00	0.000
Income increase	1.26	0.182
Maximize production	2.14	0.590
Capacity building	1.63	0.622
Others	0.11	0.816
Total	1.23	0.442

4.5 Discussion:

The goal of sustainable development is to increase the opportunity for humans in terms of the environment, economy and society. The depletion of the natural environment reduces opportunity and increases poverty. Poverty reduction shares a common goal with sustainable development. Whether green economy is a way to achieve sustainable development and eradicate poverty in Palestine or not, the following discussion for the thesis questions within the data collected through different tools can answer this question:

4.5.1 Importance of green economy for Palestine and its link with sustainable development

From the senior policy makers point of view as they answered question number 1 in the senior interviews questions:

- a. The green economy is important for Palestine as increasing the cultivated lands using land reclamation and the fight against desertification is one aspect of investing in natural capital that could lead to increase the productivity, share in fighting unemployment by creating new job opportunities and increasing income which leads to share in poverty eradication.

- b. By investing in wastewater and improve the quality and quantity of agriculture and production and increase the environmental quality through encouraging the organic agriculture, reuse the wastewater, Palestine can step forward towards taking green economy in consideration for upcoming development plans.

From the a of the analytical review for the national development and agriculture sector plan point of view, although the GE definition is not clear in any national plan, there is an understanding on some of the components that would fit within this concept, such as renewable energy, integrated resources management, green loans, green jobs, green buildings, solid waste recycling, reuse of treated wastewater, and

green agriculture. Although many concerns of how the concept would and could be utilized, there is an agreement that various aspects of green economy are applicable and in use in Palestine has taken a number of steps, if built upon, could lead to poverty irradiation as well as other goals of the green economy and objectives.

From the academic, researchers, NGO's and private sector's point of view as they answered question 1.1, 1.2 and 1.3a, about 91.1% of the respondents understand the term of green economy that it is a tool of sustainable development. Almost 75% of the respondents mentioned that it is important for Palestine to move towards green economy

4.5.2. Palestine ability to move ahead towards green economy

From the senior policy makers' point of view and the analysis of national development plan, Palestine has been already moving towards green economy somehow through some components of the national development plan 2011-2013 and through some sector plans such as agriculture sector development plan. There is an understanding on some of components that would fit within this concept, such as renewable energy, integrated resources management, green loans, green jobs, green buildings, solid waste recycling, reuse of treated wastewater, and green agriculture. Although many concerns of how the concept would and could be utilized, there is an agreement that various aspects of green economy are applicable and in use in Palestine and could be seen through Palestinian sharing in Marseille conference for green growth in the Mediterranean countries 2012 and other conferences and committees. Palestine still didn't take a solid decision to move towards green economy which is not seen as a priority by the PNA out of fear that a transition towards green economy might reduce the economic growth.

The majority of the junior governmental respondents agreed in their answers on question number 1.1 and 1.2 that neither the national development plan nor the sectors plans mentioned the green economy frankly in their items.

From the NGO's, academic and researchers point of view 59.6% of the respondents agree that Palestine can move towards green economy but slowly and after doing the

needed legal, planning and institutional modifications to cope with moving towards green economy.

4.5.3. Prerequisites still needed for Palestine to move towards green economy

Through the recommendations of national development plan, The PA is asked to institutionalize and legalize all green economy initiatives to be able to magnify the expected outputs in the future. At the same time, a clear definition of green economy is expected, and the term is to be clearly embedded in the future PA plans and strategies.

From senior policy makers point of view the following prerequisites are needed to move towards green economy in Palestine:

- a. A higher political commitment in both planning and implementation levels,
- b. A higher level of coordination and cooperation between the concerned ministries and governmental organizations and unifying efforts to achieve sustainable development,
- c. Special institutional, organizational, legal, and regulatory mechanisms,
- d. Public awareness to spread the term and the principles of Green economy using media, and
- e. A higher level of engagement and involvement of the concerned NGO's private sector and individuals on both planning and implementation levels.

From the NGO's, academics and researchers' point of view the following prerequisites are needed to enable Palestine to move towards green economy:

- a. Improve the national and sector development plans,
- b. Increase awareness,
- c. GO's, NGO's and private sector collaboration ,
- d. Neighborhood experience transfer,
- e. Institutional building, and

f. Legal and institutional modifications

From the junior policy makers point of view the following governmental priorities and intervention will enable Palestine to move towards green economy:

1. In policy and regulation sector:
 - a. Policy and admin. Management,
 - b. New regulations, and
 - c. Training and education.

2. Natural resources:
 - a. Wastewater treatment and reuse,
 - b. Investing in clean water, and
 - c. agriculture

3. Building institutional capacity:
 - a. The sustainable development issues,
 - b. Poverty eradication issues, and
 - c. Land use and urban planning issues

Through reviewing the answers of the three above mentioned questions from the governmental and non-governmental point of view it is concluded that the first hypothesis is correct and **“Green economy can be a pathway for sustainable development in Palestine”**

4.5.4. Responsible Party to implement green economy in Palestine and the way it can be employed to eradicate poverty.

The majority of the respondents from senior, junior and NGOs assured that it is a joint responsibility of governmental, non-governmental organizations, academics and researchers' and private sector to implement green economy in Palestine. Taking into consideration that the majority of the junior policy makers mentioned that they have a dialogue with the NGO's, academics and researchers regarding the formulation of the

national and sector plans. More than half of the NGO's respondents mentioned that they entered in a dialogue with the government regarding the formulation of the national and sector development plan at some stage.

The advantages of such a dialogue from the junior policy makers' point of view are:

- Spread out the term and concepts of green economy,
- Better planning process,
- Improve the international financial and technical support,
- Improve the institutional performance of the governmental organizations,
- Encourage joint projects between the GO's, NGO's and private sector in the fields of sustainable development,
- Increase Awareness, and
- Good environmental impacts specially on water and agriculture

And from the NGO's, academics and researchers point of view the advantages of the dialogue regarding formulation of the national and sector development plans are:

- Sharing in national plans formulation for wider vision,
- Implementing projects and programs under the green economy term,
- Promoting for investing in natural capital to reduce poverty,
- Refuse conditioned finance for their projects unless it suits their agenda,
- Networking with ministries and other governmental organizations to move Palestine towards green economy, and
- Awareness campaign with Palestinian society towards moving to green economy and its benefits

4.5.5. Policies or institutional modifications required at the national level.

Both governmental and non-governmental organizations admitted that there is a need to implement policy and/or institutional modifications in order to enable Palestine to move towards green economy in Palestine.

From senior policy makers, the view of the policy makers towards green economy need to be changed and their fears from changing the Palestinian economy to a green one need to be solved by follow up the neighborhoods success experiences in green economy, and try to find alternatives to succeed in moving to green economy.

From the junior policy makers point of view there is a need to different types of institutional modifications as merging institutions, streamlining institutions, establishing new institutions, changing mandate(s) of institution(s), improving coordination among existing institutions.

From the NGO's point of view, the national and sector development plans need to be improved, a capacity building for the governmental organizations regarding the green economy and poverty eradication issues is needed

4.5.6. Suitability of legal environment to cope with the desired changes, gaps and expected modifications?

The majority of NGO's, academics and researchers respondents, point of view **is that** the legal environment is not suitable to cope with the changes needed to move towards green economy in Palestine. The following actions are needed to be held in order to make the legal environment suitable:

- Modify the current laws and legislations,
- Activate some un-activated laws and legislations, and
- New laws and legislations.

From the senior policy makers point of view the legal environment is suitable to cope with the changes needed to move towards green economy except the following points:

- The legislation council is not on duty,
- Some laws needed to be activated, and
- More authority for some legal institution.

4.5.7. Major barriers against moving towards green economy in Palestine

From the senior policy makers point of view the following are constraints to mainstream green economy in the Palestinian national/sector development plans

- Legislations,
- low priority within the Ministry,
- Budgetary allocation to SD and GE,
- Inadequate coordination between ministries, and
- Lack of data and limited knowledge.

Senior policy maker respondents also mentioned the following major barriers to implementation of moving towards green economy:

- Lack of experience,
- Limited resources,
- Laws and legislations, and
- Occupation procedures.

From the NGO's, academics, and researchers point of view the following barriers are facing the implementation and moving towards green economy in Palestine:

- Inadequate coordination among ministries,
- Low political priority for integrated decision making,
- Lack of expertise,

- Problems created by slow growth,
- Inadequate public awareness or engagement, and
- Inadequate NGO's and private sector involvement

From discussing the above mentioned question with the governmental and non-governmental, academics and researchers, their point of view was that the second hypothesis" **It is possible to apply green economy concepts in Palestine by cooperative efforts between governmental and nongovernmental organizations"** is correct.

4.5.8. Link between investing in natural resources and poverty eradication.

From the senior policy makers' point of view, investing in natural capital (agriculture, water and wastewater) could lead to many advantages including poverty eradication:

1. Agriculture

- Higher farm productivity enhanced producers' own incomes, in cash and in kind, and created demand for agricultural labor.
- This growth is multiplied in various ways:
 - First: through backward linkages with an agricultural input supply sector;
 - Second: through forward linkages with agro-processing industries, transportation, and trade.
 - Third: through consumer linkages where enhanced rural prosperity leads to new demands for goods and services from especially rural providers.
- Production of export crops brought foreign exchange.
- The availability of food at relatively low prices enables the growing labor force to feed itself at modest wage rates. This reduced hunger among poor net food buyers, who spend more than half of their incomes on food, and facilitated other sectors to grow at the same time, while expanding national food demand kept food prices sufficiently high to encourage farmers to enhance productivity.

2. Water

- a. Success of green economy depends on sustainable management of water resources and on safe and sustainable provisioning of water supply.
- b. Investment in water infrastructure in order to deliver water and to process wastewater both from individuals and from business could lead to many job opportunities.
- c. Investing in clean water lead to healthier population and reduce the expenses on health sectors to be invested in more development aspects, as when people get sick they considerably cannot work and other cost expenditure on medical treatment is needed.
- d. Investing in the maintenance of water supply networks reduce the huge quantities of lost water due the damaged water supply networks, the matter that leads to reduction of the price of water for the consumer.
- e. Investments in water infrastructure and water policy reform are urgently needed to increase water supply and use efficiency.
- f. Investing in water reaps high levels of economic, social and environmental returns.

3. wastewater

- a. Health and social benefits: The existence of sewage collection network and waste water treatment plants can significantly reduce the risks of health problems such as diarrheal diseases, dysentery etc. There are also social benefits through reduced odor, improved water quality for the use in domestic activities.
- b. Treated wastewater can be use in agriculture, industry, stone industries etc. So clean water well be preserved for drinking purposes. On the other side, treated water used in agriculture may encourage farmers to expand cultivated lands which will lead to maximizing production and more job opportunities and income increase.
- c. Water treatment plants create many job opportunities

From the NGO's, academics and researchers point of view, investing in natural capital can lead to poverty eradication through:

- a. Job creation,
- b. Productivity increase, and
- c. Income increase.

From the discussions of the above mentioned questions with the governmental and non-governmental organizations, the third hypothesis "**Investing in natural capital in Palestine (agriculture and water) can help to eradicate poverty**" is correct.

Chapter five

Conclusions and recommendations

5.1 Conclusions

- 5.1.1. Governmental, non-governmental, academics and researchers interviewees were aware of the existence of the national development plans and sector plans.
- 5.1.2. Governmental and non-governmental, academics and researchers interviewees were aware and understand the term and the concept of green economy in the context of poverty eradication.
- 5.1.3. Governmental, non-governmental, academics and researchers said that, it is important for Palestine to move towards green economy and that it is a joint responsibility of governmental, non-governmental, academics, researchers, other civil society and private sector firms to implement that movement.
- 5.1.4. Governmental non-governmental, academics and researchers see that agriculture and water sectors are among the most important sectors in Palestine to be invested in to eradicate poverty and implement green economy concepts.
- 5.1.5. The respondents' opinion is that Palestine can move forward towards green economy but slowly and after overcoming the barriers and constrains that stands against this step.
- 5.1.6. Governmental, non-governmental, academics and researchers mentioned that they entered in a dialogue with each other at some stage of formulating the national development plan.

5.1.7. The NGO's academic and researchers see that the legal environment is not suitable to cope with the changes needed to move towards green economy and that there is a need to modify the current laws and legislations, activate some un-activated laws and legislations and issue new laws and legislations. On the other side the government sees that the legal environment is good and the obstacles are the absence of the legislative council role and the need to give more authorizations for some institutions.

5.2 Recommendations

The transition to green economy is fundamental for addressing the social, environmental, and economic pillars of sustainable development in Palestine, and in order to succeed in moving towards green economy, the following pathway is recommended for the Palestinian policy makers consider:

5.2.1. Green economy

- It is advocated for a clearer definition and better understanding of the goals of the green economy to be achieved at the national level. Ensure that the green economy will strengthen sustainable development and not replace it.
- Comprehensive solutions are needed for sustainable development which lead to take the green economy into consideration while planning to solve the poverty problem in Palestine.
- Incentives should be availed for initiatives contributing positively to the green economy.
- Increased research and development to support the green economy initiative.

5.2.2. Planning and strategies:

- Palestine should develop national development plans and strategies where green economy is mainstreamed as a method of sustainable development.
- The new plans and strategies should then be incorporated into wider sector plans and strategies—for agriculture, rural development, and water that consider investing in natural capital particularly agriculture and water that recognize both importance for agricultural growth and poverty reduction.
- More consultation and coordination with the NGO's, academics and researchers, private sector and civil society organizations regarding mainstreaming green economy in the Palestinian plans and strategies is advocated.
- Looking for alternatives and find solutions to overcome the constraints and barriers caused by the occupation that stand against moving towards green economy in Palestine.
- Improved enforcement of laws on natural resource management

5.2.3. Investing in natural capital and reducing poverty

- Make investment in natural capital (agriculture and water) a driver for poverty reduction by ensuring policies that promote and encourage green economy concepts
- Enhancing sustainable productivity by increasing cultivated land, change methods of production that leads to increasing productivity, increase job opportunities and encourage green agriculture and the reuse of treated

wastewaters to help create income opportunities. Increase agricultural output in a sustainable and socially responsible manner

- Invest in training, knowledge sharing, and extension services, as well as research and development to close the uptake gap for existing tools and ensure new solutions to be available for tomorrow.
- Involvement of private sector and NGO's, as they are key components in moving towards green economy.
- Community awareness on sustainable use of natural resources

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