PhD Thesis

“Perspectives of Urban Growth Management and Sustainable Development in West Bank, Hebron District as a Case Study”

Inaugural Dissertation

zur Erlangung des akademisches Grades eines Doktor der Ingenieurwissenschaften (Dr – Ing) im Fachbereich Architektur Stadt- und Landschaftplanung der Universität Kassel

Vorgelegt von

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Als Dissertation vom
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Declaration

I clarify that the submitted work for the Doctorate Degree to the Faculty of Architecture Urban and Landscape Planning, University of Kassel, Germany entitled “Perspectives of Urban Growth Management and Sustainable Development in West Bank, Hebron District as a Case Study ” is supervised by Professor Uwe Altrock and co supervised Professor Ulf Hahne.

I also declare that the work is completed and written without any aid from other party. I declare before this submission, I did not engage in any program or apply any work to pursue the doctorate degree in architecture either in homeland or in abroad.

All parts of this study have appeared in the other publications and events are mentioned where it is happened during research content and references.

Ismail Talahma

August ,2011
Acknowledgement

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Finally, I must mention and thank from my deep heart the helpfulness from all my family members for all the attention they have paid to the progress of this PhD research report, thanks to their concern and encouragements have long been a driving force for the continuity and consistency of the whole project, and special thanks to all people help me in this research one by one.
Summary

The main objective of this PhD research study is to provide a perspective on the urban growth management and sustainable development in Palestine, and more specifically in Hebron district as a case study. Hebron is located 36 km south of Jerusalem, with an overall population size of around 600,000 people living in a total area around 1246 km$^2$. Hebron is the biggest Palestinian district that has 16 municipalities and 154 localities. The research discusses and analyzes the urban planning system, economical and environmental policies and the solution required to manage and integrate the development elements to develop a sustainable development plan for Hebron. The research provides answers for fundamental questions such as what kind and definition of sustainable development are applicable to the Palestinian case?. What are the sustainability problems there and how the Israeli occupation and unstable political condition affect the sustainable development in Palestine? What are the urban growth management and sustainability policies and actions required from government, public and privets sector in Palestine?

The fast urban growth in Palestine is facing many problems and challenges due to the increase in the population size and the resulting impact of this increase including, but not limited to, the demand of new houses, need for more infrastructure services, demands on new industrial, commercial, educational and health projects, which in turn reduces the area of agricultural lands and threatens the natural resources and environment. There are also other associated sustainability problems like the absence of effective plans or regulations that control urban expansion, the absence of sufficient sustainable development plans at the national levels for the district, new job requirements, Israeli restrictions and occupation for more than 60 years, existence of construction factories near residential areas, poor public awareness and poor governmental funds for service projects and development plans.
The study consists of nine chapters. Chapter One includes an introduction, study objectives, problems and justifications, while Chapter Two has a theoretical background on sustainability topic and definitions of sustainability. The Palestinian urban planning laws and local government systems are discussed in Chapter Three and the methodology of research is detailed in Chapter Four. As for Chapter Five, it provides a general background on Hebron District including demographical and economical profiles, along with recommendations related to sustainable development for each profile Chapter Six addresses the urban environment, sustainability priorities and policies required. Chapter Seven discusses and analyzes infrastructure services including transportation, water and wastewater. As for Chapter Eight, it addresses the land use, housing and urban expansion beside the cultural heritage, natural heritage with relevant sustainable development polices and recommendations. Finally, Chapter Nine includes a conclusion and comprehensive recommendations integrating all of urban and sustainability event in one map.

Hebron has a deep history including a rich cultural heritage aged by thousands of years, with 47% of Hebron district population under 14 years old. Being the biggest Palestinian district, Hebron has thousands of industrial and economical organizations beside a large agricultural sector at Palestine level. This gives Hebron a potential to play major roles in developing a national sustainability plan, as the current urban planning system in Palestine needs urgent reform and development to fulfill the sustainability requirement. The municipalities and ministers should find permanent financial aid for urban planning and development studies so as to face future challenges. The Palestinian government can benefit from available local human resources in development projects; hence Palestinian people have sufficient qualifications in most sectors. The Palestinian people also can invest in the privet sector in Palestine in case businessmen have been encouraged and clear investment laws and plans have been developed.
The study provides recommendations associated to the sustainable development in Palestine in general and Hebron, as a case study, in specific. Recommendations include increasing the private sector as well as the public involvement in urban growth management, and stopping unplanned urban expansion, subjecting granting building permits of new projects to the no-harm environmental impact assessment, increasing the coordination and cooperation between localities and central bodies, protection and renovation of old cites and green areas, increasing the quality and quantity of infrastructure services, establishing district urban planning department to coordinate and organize urban planning and sustainable development activities. Also, among recommendations come dividing Hebron into three planning and administrative areas (north, central and south), and dividing the sustainable development and implementation period (2010 to 2025) into three main phases. Finally, the study strongly recommends benefiting from the same urban development plans in similar districts at national and international levels, also to use new technologies and information systems in urban planning process.
Zusammenfassung

allgemeinen Hintergründes zum Hebrondistrikt, erörtert das demographische und wirtschaftliche Profil des Distriks und macht hierzu Empfehlungen; Kapitel 6 befasst sich mit der urbanen Umwelt und den Prioritäten und Maßnahmen für eine nachhaltige Entwicklung; Kapitel 7 analysiert die Infrastruktur wie Verkehr, Wasserversorgung und Abwasserbeseitigung; Kapitel 8 befasst sich mit Landnutzung, Wohnungsbau neben urbanem Wachstum, Denkmal- und Naturschutz, Maßnahmen einer nachhaltigen Entwicklung und Empfehlungen; Kapitel 9 enthält Schlussfolgerungen und stellt die umfassenden Empfehlungen in kartierter Form dar.

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Chapter One

Introduction and Research Overview

1.1 General Study Background
1.2 The Research Issue and Justifications
1.3 The Research Questions and Hypothesis
1.4 Study Problems and Limitations
1.5 Study Objectives
1.6 Research Report Organization
1.1 General Study and Background

Historical Palestine is surrounded by Lebanon and Syria to the north, Egypt and the Red Sea to the south, Jordan and by the West of the Mediterranean Sea to the east according to the data of Ministry of Planning and Ministry of Local Government." The total area of historical Palestine is estimated by about 26,320 km$^2$ of land in addition to 704 km$^2$ of inland water. However, Palestine as of today is divided into two separated areas, namely the West Bank and the Dead Sea, with an estimated area of about 6,210 km$^2$, and Gaza which has an estimated area of about 365 km$^2$. The remaining area is Israel now". (ARIJ-GIS, 2001, MoLG-GIS, 2007)$^1$.

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This PhD research study will address the urban growth management and sustainable development in Palestine via taking the case study Hebron District, (Madenet Al-Khalil) in Arabic. "Hebron is considered as one of the oldest inhabited cities in the world. The studies and investigation researches show that there were human activities in Hebron for more than 5,000 years" (Kuttab & Isaac, 2004.P4).

"Hebron district is located 36 km from Jerusalem which has a part of mountainous series that ranges from 600- 1020m above the sea level" (ARIJ,1995.P2). Hebron is one of the main districts of the Palestinian nine districts. According to the Ministry of Local Government data and the researcher”s observations, Hebron District contains the number of Palestinian cities which have 153 built-up areas like small cities, towns and villages. According to the last official population statistics conducted in 2007, "The overall population of Hebron District areas is around 552,1641 people who live in a total area of around 1246 km2" (PCBS, 2008).

Map (1.3): Hebron District Areas (Source: Hebron Municipality, 2007).

“Hebron is the fourth holiest city for Muslims after Mecca, Medina, and Al-Quds. Al-Haram al-Ibrahimi, the Sanctuary of Abraham or the Tomb of the Patriarchs in the old city of Hebron, is one of the ancient historical, religious, and heritage sites in Palestine. Throughout the centuries, the city of Hebron was a constant target for Persian and Roman invaders until the Islamic conquest during which the city prospered and Muslim emirs and caliphs showed unwavering concern for the city. The ancient architecture of the old city, which goes back to the Mamluk and Ottoman periods, is a witness to the development and sophistication of the city of Hebron” (Hebron Municipality website, 2009, www.hebron-city.ps/etemplate.php?id=24).

After Oslo agreements in 1994 and the establishment of the Palestinian Authority, many fundamental changes took place, mainly in urban planning, social heritage and economical development conditions in the West Bank as well as in Gaza. However, these major changes cause new challenges and opportunities for the development and improvement of people’s life style. However, as a result of the slow changes and progress in the peace process in addition to the socioeconomic conditions, new pressure and risks started on the urban planning and sustainable development conditions. This required comprehensive plans and serious action immediately as well as political decisions to avoid the future urban planning defects and to save the natural resource for coming generations.

The Palestinian ministries” and municipalities’ urban planning engineers are the main bodies managing and controlling the urban planning activities in Palestine. Their main duties are to put the suitable urban plans and rules in order to save the natural resources and to build the modern society as the Palestinian society is converting to civil life for developing its society to face the demand for more services as a result of population number increase. The researcher will try to analyze the conditions of the urban planning growth and the sustainable development requirements in order to examine, analyze and end up with academic recommendations that are hoped to benefit the development
of the districts, cities, towns and villages sustaining development plans. Moreover, this research aims at setting perspectives and highlighting the guidelines that could control or manage the rapid growth in population and construction and the limited resources available in Palestine mainly in Hebron District. Hence, this situation makes it difficult for the ministries, municipalities and local authorities to do their tasks perfectly and sufficiently.

In an interview with the office Director of Hebron Ministry of Local Government, 2008, he stated that "Most of the activities of the urban planning and services projects in the West Bank were controlled and managed via the Israeli civil authority (Military Force in West Bank), and the relevant plans were developed without any comprehensive plans or engineering rules. After the establishment of the Palestinian Authority, the Palestinian ministries, municipalities, universities and consulting engineering offices started putting more realistic and sufficient development and urban plans in order to protect and rescue the natural resources and to make the future sustainable development for the coming Palestinian generations”.

The Palestinian Israeli political conflict lasting for more than 60 years has affected the social, economic and human development process. This, in turn, made the people suffer and face many risks. It also caused more urban challenges and imposed heavy constraints on Palestinians, freedom of movement and investment in both the private and public organizations. These restrictions have increased impacting negatively the political and social conditions, as a result of roadblocks and checkpoints which make the access to work areas, universities and industries very difficult. They also created more problems and challenges in urban planning, especially in the urban expansion, cities’” growth and sustainable development. The question that arises now is how it can be controlled while saving natural resources and making sustainable development and what policy should be considered to achieve urban sustainable goals. However, the sustainable development consists of processes and policies for developing the life style, cities, environment and communities
of land. It can be defined as "development which meets the needs of present generation should not be compromised with the needs and ability of the future generations". (Coplak, & Raksanyi 2003.P9).

Due to the technical and industrial development\(^1\) since more than 100 years, cities and urban development have been facing new kinds of pollution and global environment crises. The term of sustainable development has also been founded and set on top of government’s and decision makers’ agenda, hence; the sustainable development could affect the social issues (including poverty, discrimination, loss of cultural identity, crimes…etc.), economic conditions (such as unemployment, poverty, inflations, traffic congestion, poor services …etc.) and environmental aspects (such as pollutions, noise, deterioration of natural heritage, poor water management, biodiversity…etc). This research study will address the urban growth management and sustainable development in Hebron District affecting the challenges and conditions mainly in Hebron District cities, towns and villages from an academic point of view, theoretical and planning methods, expansions and sustainable development theories, key factors for urban expansion element(Land use, economical development saving natural resources, land use, environment, transportation, Housing …etc). The scientific planning solutions and the academic recommendations are put by the researcher in order to solve problems and to control future urban expansion in Hebron district as a case study in the West Bank-Palestine\(^2\). The comprehensive detailed studies can be found in the research chapters later.

\(^{1}\) The author means when the use of cars and machines in public transportations started.

\(^{2}\) The author proposed to select Hebron District as a case study for many reasons. It is the largest district in the West Bank. It reflects, in many urban places, the actual condition in the West Bank. Besides, there are no previous PhD studies that discusses with Hebron District in terms of this subject. However, the author presents the West Bank as the major study area where it is required.
1.2 The Research Issue and Justifications

The Palestinian urban planning and local government system has not been finalized due to old and bad administrative system especially in municipalities and local government units. These conditions are created by the governments ruled by four foreign powers since the last five centuries. These powers were the Ottomans, the British, the Jordanians, the Egyptians and the Israelis. In 1994, they started the rule of Palestinian authority (Adel, 2002.P11) and the foreign rulers have put the basic foundations for the Palestinian urban planning and local government system but each ruler put his own urban regulations and rules. Moreover the challenges and the risk on the urban development in Palestine have arisen due to the lack of people’s qualifications for receiving the jobs, the corruption in employment, and the experience in different fields as required.

The fast urban growth of the Palestinian built-up area and the increase in population numbers has led to the increase of needs for the housing and the urban projects. However, the new unplanned built-up areas and urban projects covered large areas of agricultural lands and sensitive areas to the buildings and the industrial areas and this will cause a lack in municipality services mainly of such projects and buildings located on the main streets, or will prevent any future planning for the development of the study area. However, the rapid changes in political and peace processes, demographical and socioeconomic conditions have created a substantial pressure on these urban agglomerations which requires serious action and attention as well as a wider view to save the natural resource for the coming generations through the sustainable planning development process.

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1 The Author discusses the laws and urban regulations used in Palestine and it is linked with sustainable development in chapter three.

2 Palestine was under Ottman (Turkish) rule from (1571-1917), and from (1918-1947) under the British occupation, after that, the 1948 war divided Palestine to three area West Bank under the Jordanian rule, Gaza strip under the Egyptian rule and the remaining areas ruled by Israel, finally after 1967 war, all of Palestine became under the Israeli rule and occupation until Oslo agreement and Peace process started.
The main discussion on this issue of this research will address the balance between the yearly population growth, the needs of the new people and the future urban expansion and housing of the Palestinian cities, towns and villages in addition to the construction of new dwellings. Infrastructure and national projects which are solid base plans and sustainable growth management to cover the recent built-up area and the expected future expansion like roads, infrastructure services, network system, environment protection, improving economical conditions … etc. The Palestinian municipalities are facing many problems in constructing random buildings and having shortage of supplying the basic services required. This problem has become more difficult with the construction of random buildings that prevent the municipalities from providing the infrastructure facilities such as roads, communication services, electricity, schools and other public service centers. The municipalities found out that there is an urgent need to update the regional plan for the district and cities in the existing plans of many Palestinian cities, which are more than 30 years old, if existing, and have not covered the new areas annexed to the city where new buildings spread randomly without planning. All these issues will find new sustainable development, urban planning and administrative system with challenges and new requirements, which need thorough analysis and studies.

In the Palestinian area, the researches and projects which discuss and analyze the sustainable development system are still very rare and still there are no official policies or plans to constrain and discuss this sector. However, after the establishment of the Ministry of Local Government, which is responsible directly for most of the urban planning activities, it started by dividing Palestine into 16 administrative areas. Each area has a governorate and a director general who is heading the district office of the ministry of local government and is appointed by a Presidential decision. The responsibilities of urban planning are divided among the governorate, head of local government district office and the mayors of the municipalities. Unfortunately, the scope of work between the different official bodies is not clear and may overlap, which
will create a good environment for corruption and negative compactions. Furthermore, the adoptee of the policy of appointments was not based on administrative rules/factors, rather based on the political affiliation. These appointments are not related to the local administration in any way which has impacted negatively the performance of the central branch of the ministry of local government.

Finally, the main aim of addressing these issues in this research is the justification of the research which indicates that the perspective of growth management shows what policies and plans should be adopted to have sustainable development in Palestinian cities, towns and villages. Hence, this research will include various issues such as physical, social, economic and environmental issues. These issues need more studies, assessment and development plans and the output of these issues will have an impact across a number of local authorities which require a common agreed response in order to meet the requirements of the national policy. Moreover, sustainable urban development plan should be linked with the regional and national planning guidelines in practice as well as in statutory function that are intended to provide a guidance to the decision makers, planning authorities and engineers.
1.3 The Research Questions and Hypothesis

1.3.1 The Research Questions

For any academic research there are many questions that delineate the boundaries and limitations of the research. After reviewing the urban planning system, the role of the Palestinian local government councils, the challenges and difficulties that need a sustainable development in Palestine, the major emerging questions for the study have been summarized and prioritized as follows:

a. What are the main problems that are facing the sustainable development in Palestine?

b. What are the elements and definitions of the sustainable development that matches Palestine’s conditions?

c. What is the role of Palestinians in sustainable development and what is the impact of socioeconomic conditions on the sustainable development?

d. What are the needs for a sustainable development in Palestine?

e. What is the relation between the central authority and the local authority and what is the upgrading system required?

f. Is the relation between the local government institutions and the ministry of local government equal and complementary one away from dictations of the central authority?

g. Which model of sustainable development and urban growth management could be applied in Palestine?

h. How could the sustainable development be applied in Palestine?

i. What are the policies, recommendations and rules that could be followed by decision makers and Engineers to improve the conditions of sustainable development in Palestine?

j. What are the next steps?

1 These Questions and Hypothesis are the main but not all of the questions and hypothesis. During this research, the author answers these question and addresses and discusses against research hypothesis as it is shown in report chapters (5,6,7,8 and 9) through discussions, analysis and recommendations.
1.3.2 Research Hypothesis:

After reviewing the previous studies on the same subject, the research concept of Palestinian urban planning law and the actual urban planning condition has become clearer. The research hypothesis will focus on sustainable development requirements in Palestine, the role of the Palestinian local government institutions and the difficulties faced. Hence, the research depends on the following hypotheses:

a. The Palestinian urban planning system is very old and insufficient and needs fundamental changes.

b. The Palestinian urban planning institutions are willing and able to prepare sustainable development plan to Palestinian cities, towns and villages.

c. The political situation in Palestine will not prevent developing a good sustainable development plan.

d. The public participation and involvement is the main data resource.

e. Palestinian municipalities and engineers have the capability to apply the sustainable development guidelines if they have enough funds and financial aid.

f. The decision maker will support and approve of the studies, plans and new regulations in order to save the environment and prevent more natural resource pollution.

g. The Palestinians have the academic qualifications and experiences to create sustainable development in the community which has good sustainable plans linked with public awareness.

h. This research will be the basis for coming researches on the same subject. The output will be discussed and may be adopted by governmental and public institutions in Palestine.

---

1 A hypothesis is a specific statement of prediction. The hypothesis is almost a proposal, expectation and answers for research questions and objectives. The research output could prove and confirm the hypothesis or not.
1.4 Study Problems and Limitations

After the researcher observes the actual urban conditions in the West Bank and the academic research in the same field, the researcher encounters more problems because Palestine has special conditions that create more problems and challenges as shown below:

a. Absence of effective plans or regulations that control urban expansion in Palestine as well as in the study area.
b. Absence of sufficient sustainable development plans in Palestine.
c. Lack of available land for new housing and infrastructure services.
d. Environmental degradation and pollution. There are few studies and researches for development land use and environmental management in Hebron.
e. Existence of stone cutting facilities (concrete, block, granite, factories) near residential zones especially in Hebron.
f. Existence of animals and chicken farms near the residential area, or in the areas that are intended for future expansion.
g. The cities and villages expand radically and randomly from the center (old city) towards radial direction according to the urban needs.
h. The increased demand for land in urban centers, and thus causing land prices to rise, beside the expansion of Israeli settlements and building of bypass roads.
i. The inclined nature of the land needs a lot of excavations of which the result will be costly.
j. Most Israeli settlements are built on confiscated Palestinian agricultural or communal grazing lands which has led to the uprooting of thousands of fruit trees. As a result, reducing land cover will increase soil erosion.
k. Some towns and villages expand more than others and will lose their identity.
l. Many other problems and challenges will be shown in details in the coming chapters.
1.5 Study Objectives

The main aim of this study is to address the perspectives of growth management and sustainable development in West Bank, Hebron district as a case study. The study aims to:

a. study the Palestinian planning and local government system and put academic recommendations to improve its quality.
b. identify the key development actors in local planning processes concerning organized groups of civil society and local governments
c. discuss sustainable development and growth management urban activities like social, economic, demographical, infrastructures, land use and environment profiles in Hebron District and West Bank.
d. study the current housing situation, urban regulations and development policies.
e. develop academic consultative procedures for new urban expansion and cities growth management in Palestine.
f. strengthen the community based land resource protection practice existing in urban and rural areas and to improve public awareness of the issues related to sustainable development.
g. show the significance of sound environmental management. This is one of the key elements of achieving sustainable development
h. suggest academic solutions and recommendations that can help improve the quality, efficiency and effectiveness of municipal management and services in the field of urban expansion and sustainable development.
i. view the urban conditions in Hebron district and how it could control and manage the future development and to increase the number of people depending on this for their living.
1.6 Research Report Organization

In order to meet the previous mentioned objectives and the questions in the report (which consists of two major components i.e. the theoretical and the empirical), presented in nine chapters, each one addresses specific components within the framework of the study. The first four chapters include the theoretical foundations and the methodological approach where the last five chapters address the empirical, analysis, academic solution and the recommendations. Following are the chapter with more details.

Chapter One – Introduction: The opening chapter offers a general introduction which sets the background, presents the aims, objectives of the study, problems, Justifications, Hypothesis and also the Research breakdown structures.

Chapter Two - Theoretical Tenets of the Content: According to this chapter, there is an introduction about urban settlements development, theoretical presentation about living in cities and the development of suburban life. This chapter includes the Urban Sustainable Development Objectives and Heads of Sustainable Development.

Chapter Three - Contextual Factors for Evaluating Palestinian Urban Planning and Local Government System, Drive Agenda for Research: This chapter highlights the planning framework of the Palestinian and the local government system. This planning system is presented and discussed with recommendation about the legal framework of public administration and the central government. The ministry of local government system is involved in the engineering and the infrastructure framework which has a comprehensive discussion and analysis about the Palestinian urban planning framework.

Chapter Four - Research Methodology: this chapter explains the methodology the researcher has followed to collect data, analyze the study area urban conditions and how he ends up with the recommendations. Moreover,
this chapter presents a systematic account of the research methodology and process to generate the answers against research goals and questions previously proposed.

**Chapter Five - Profile of the Hebron District (Study Area):** As mentioned previously, the previous four chapters mainly address the theoretical and distractive part. However; chapter four includes the actual situation in Hebron District by which we can plan to put the suitable solutions and academic recommendations in order to have a proper urban growth and sustainable development. This chapter gives a general background about Hebron District and all of its cities and villages. The second section of this chapter shows the description about the demographical situation and the economical situation at the end.

**Chapter Six - Hebron District Urban Environment, Content, Policies and Challenges**: the environmental profile is addressed in this chapter. According to the chapter, the researcher addresses and analyzes many urban environment sectors like solid waste and polluting green areas. Moreover, many academic recommendations, polices, and analysis are presented in this chapter.

**Chapter Seven – Infrastructure Services links to Sustainable Development:** This chapter shows the core of all the researches which contains most of infrastructures linked with urban physical planning component like transportation, water, wastewater, electricity and telecommunications. All of these sections show the description about the actual situation at Hebron District besides the analysis and the actions that should be taken to have sustainable development addressed and supported with maps, tables, and pictures.

**Chapter Eight - Land use, Housing and Urban Expansion:** Land use planning is one of the fundamental aspects that should be taken into consideration for any future urban growth management and sustainable development. In this chapter, the researcher discusses the land use and the actual conditions. Besides he addresses the cultural Heritage, natural heritage and urban expansion. These sections show the description of the actual situation in Hebron District and analyze and put the actions for having sustainable development that were addressed and supported with maps, tables, and pictures.
Chapter Nine - Conclusions and Recommendations: Hebron District future is the foundation of the Hebron Plan. This chapter presents the main result and output compared to the previous chapters as it contains Hebron District perspectives, Hebron District urban character, identification, urban development challenges, urban growth management, sustainable development plan, urban sustainable development policies and the recommendations.
Chapter Two

Theoretical Tenets of the Content

2.1 Introduction and Overview
2.2 The Advantage of Living in Cities
2.3 Sustainable Urban Development Dimensions and Principles
2.4 The Objectives of Urban Sustainable Development
2.5 Heads of Sustainable Development
2.1 Introduction and Overview:

The human urban areas that have developed over the last centuries developed within accumulating time. In the twentieth century, new terms and concepts started. An example and main term is sustainable development.  "While indicators of sustainable development were discussed in the environmental economics literature as early as the 1970’s, a renewed call for such indicators was formulated in Agenda 21, one of the main documents coming out of the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro (United Nations 1992). Agenda 21 was adopted by 183 governments at UNCED. Its full implementation was strongly reaffirmed at the World Summit on Sustainable Development held in Johannesburg, South Africa in 2002, ten years after the Rio de Janeiro conference "(UN-New York &Geneva, 2008.P27)

According to the estimations, nearly half of the world's population lives in cities and this is in the third world countries, hence; people travel to cities for job opportunities and works. Urban areas and mainly cities are complex that havw challenge places of contradiction compared to villages and rural areas. However large urban areas like cities have more economical and educational opportunities for urban developing and growth management. "Moreover, many developing countries aspire to become industrialized countries by 2020, with the ability, then, to share their experiences and gains with other developing countries. They will also be able to help bridge the political divide between the least and most developed countries that presently characterize the multilateral process. Implementation of sustainable development should thus be viewed as a political, institutional and technological, rather than a legal, process" (Sanwal, & Advisor, 2003.P12).

The United Nations Conference on Human Settlements (Habitat II, the City Summit) was held in Istanbul in1996 (Istanbul Declaration on Human
Settlements, 1996)\(^1\). The main themes around for which the progress is needed against sustainable development are:

a. "Governance and opportunities for citizens to participate in local decision-making."

b. Housing needs.

c. Urban economy, poverty reduction and job creation.

d. Awareness that women and men use and experience cities differently.

e. Environmental management, disaster mitigation, relief and reconstruction". (UN-Habitat, 2008)

2.1.1 Definition of Sustainability (Sustainable Development):

The terms like sustainability, sustainable community, sustainable environment and sustainable development have almost similar meaning but also have different definitions and different understanding via planners and decision makers. However, when sustainable development is mentioned in front of some people, it means for them living in cities, new urban communities, using modern transportations, use of clear energy, protection of environment and recycling solid wastes…etc. For other people, sustainable development means living in small green areas and farming communities surrounded by open space which has no air pollution and most of food is organic and most of life styles are natural and safe for the environment …etc. From the researcher’s point of view, sustainability is a process with dynamic steps that include discussions, plans, researches and policies rather than fixed regulations and a group of theoretical ideas. The aim behind this process is to understand the actual urban planning conditions which could make the sustainable development and community satisfactory.

After the researcher’s review of many books related to sustainable development in different subjects like economical sustainable development, environmental sustainable development, urban sustainable development it was

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found that the term „sustainability” is not a new subject. It has been existing but in relation to other terms. However, most of the old nations and governments everywhere, in the previous centuries, have recognized the need for their people for water network supply, solid waste collection, society”s needs and economy development.  

“Sustainable development was defined in the Bruntland Report in 1983 as “development which meets the needs of the present without compromising the ability of future generations to meet their own needs.” (Dresner, 31) This is a satisfactory definition for most people, however, when it comes down to the policies of sustainable development, the definition given proves dangerously vague. Interpretations that stem from it can range from „do not touch any of the earth”s natural resources ever again“ to „use them up as quickly as possible.”” (French, 2006.P2)  
The global industrial movement, mainly over the last 50 years, created the sustainability concept and ideas, according to the Coplak "the new birth of the sustainability concept is born almost in the period from 1960 to 1970 because the new situation happened in most world countries and the logical outgrow of a new consciousness about global problems related to environment and development which needs further plans and polices to be adopted ".(Coplak & Raksanyi,2003)  
Sustainability or sustainable development is a process rather than solid ideas or endpoint which makes it difficult to put comprehensive definition. Due to this, there are various definitions and classifications depending on the kind and the subject of work or research. The definition of sustainable development has changed and can be either general or specific. The sustainable development involves not only streets, good services and no pollution; it also includes health and people satisfaction. Sustainable development is the factors that affect the people hereditarily. The following figure shows the living cycles and how it is linked with people’s health and life via different components:
Figure (2.1): The events affect people’s health, hereditary and its relation with sustainable development (Source: European Sustainable Development and Health Series: 2-1997 .P22, Original (Original Whitehead & Dahlgren))

As the researcher observes, there are more than 70 definitions and explanations for sustainable development, sustainable city and sustainability and the most familiar and used one is what is mentioned in Bruntland Report in 1983 as stated above, however; at the following points the researcher will address the common sustainable development definitions and how it could be useful for the case of Hebron:

A."A sustainable city could be defined as a city in which the population enjoys high quality of life and which takes care not to transfer socioeconomic and environmental or health problems to other places or future generations". (EUR/ICP/POLC–European Sustainable Development and Health
For the researcher, this definition is very wide and more theoretical to be useful against the aims and agenda of sustainable development. However, the definition mentions the main components of sustainable development, and so it will be more useful in the developed and planned countries rather than third world countries, like Hebron where people are still looking to have the basic needs like food and the essential services.

B. "A sustainable city is "one in which its people and businesses continuously endeavor to improve their natural, built, and cultural environments at neighborhood and regional levels, whilst working in ways which always support the goal of global sustainable development "(http://www.civ.utoronto.ca/sir/default.htm).\(^2\)

From the researcher’s point of view, this definition is related more to Palestine’s case, hence; the detention includes business which means work, industry and job opportunities in addition to the protection of environment. According to this report chapter, the researcher addresses more subjects related to this definition mainly in chapter five and six.

C. " sustainable urban development must aim to produce a city that is "user-friendly" and resourceful, in terms not only of its form and energy-efficiency, but also its function, as a place for living"(www.rudi.net/books).\(^3\)

According to the researcher, this definition is restricted to environment and energy which is part of sustainability but not the whole of it. In some countries, especially from industrial constrains, this definition could be applied more, and in general the energy is one of the most sustainable development event discussed. Many researchers have been conducted concerning it. As mentioned previously, sustainable development have many other definitions. In general, most of the definitions have the following aims and components. They aim to:

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1 The Original Reference from (Girardet, H. Cities: new directions for sustainable urban living. London, the GaiaAtlas, 1992.)
3 The original Reference is Elkin et al. (1991, p.12)
a. develop the proper land use and improve natural resources.
b. set and prepare plans that fulfill the basic human needs like health, education and income.
c. integrate the cultural heritage and improve the social relations and content among the people in a society.
d. protect the environment in local and global levels and reduce pollution.
e. find new energy resources mainly the clean energy like wind and sun.
f. adopt long urban strategic plans to benefit from the available resource as much as possible without harming the future needs.

The sustainable policies and Sustainable City\(^1\) require more analysis and assessment. Thus, the conditions and technologies could help us to be sufficient to use the sustainable development for one certain condition that may not be sufficient for other conditions. However, what should be taken into consideration that today is the sustainable may become unsustainable because of the change in the new researches and technologies in many life aspects and the new approaches to problems that are identified. The figure below shows more definitions of sustainable development and its links to the social aspects.

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The above definitions indicate that the sustainable city which enables and supports good social, environmental and economic conditions organize the life of people and the management their human needs and requirements smoothly. The following Figure shows the sustainable development challenges which need to be part of sustainable development definitions.
Figure (2.3): The Sustainable Development Challenges (Source: European Sustainable Development and Health Series: 2.P33)

The physical planning like green parks and landscape, strong economy, public transport …etc, could be done easily compared to the general concept of sustainable development, however; urban sustainable development or sustainable city in general should satisfy the social and economical conditions for the people that have space for home living in the city and urban areas with social contacts, space for playing children, health care, educations sufficient environmental management …etc. But the most important matter is satisfying the needs of the local people in places by which the Sustainable city could save and protect historical continuity, identity, urban aesthetics, green and health environment…etc. The following figure shows the main sustainable development challenges which need to be considered for any sustainable development discussion or definitions.
2.2 The Advantage of Living in Cities and Urban Areas

There are different types and sizes of cities, towns and villages and different planning aspects and agendas which are important to assess the sustainable development condition in any city or urban area. However, in most of the Arab world cities and more particularly cities in Palestine, the population is increasing and the housing density has expanded growth to cover the increasing demand on built up areas. For the researcher and the local people in Hebron, most of people believe that big cities are difficult to live in, because they require a specific and modern life style which not as per Palestinian people cultural traditions as a farmer people more than stay in big cities. However, the size of any city should reflect the ability to fulfill the social needs, jobs availability which are important to people and to evaluate the strengths of community life.

According to Peter "The urban structure in the context of Ecocity follows a vision of an ideal "sustainable" urban design. There is a strong linkage between the urban form and sustainable development of the city with appropriate transport structures. Sustainable city is based on the form and scale which supports walking, cycling and efficient public

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transport, and on maximizing opportunities to create more socially and culturally sustainable urban forms within the city, to create more compact city with accessible public services that offer possibilities for communication and social interactions generating the process of identification with the sense of place. It is about developing an appropriate mix of uses in the city and contributing to reducing urban sprawl with its associated social inequity problems " (Coplak & Raksanyi, 2003, P7).

Since the last two centuries, industrial and economic activities in cities created a suitable environment for people by triggering massive migration from villages and rural areas to cities and urban areas. Nowadays, technological developments, infrastructure services and cities” expansion are also being affected by these changes. However, in many countries, we can find economical capital city, educational capital city and political capital city and this depends on the characters and identification of the city. This classification could be applied to Palestinian case. "However, in Palestine as in many other third world countries, the poor management and absence of plans have created an excessive demand for new transportation systems and technology. Due to this, the resources and money are running out without using them. The people of today are using the new means of transportation, mainly the car, which has become an addictive means of transport for suburban residents. The increasing numbers of private cars and other vehicles have led to rapid flowing traffic congestion, creating more safety risks, accidents, noise and air pollution" (Mahasneh, 2008).

The Poor life, unhealthy housing, nutrition and natural resources pollution mainly water pollution led to illnesses and caused deaths at a young age. However, from a sustainable development view, the health and life style of the population for any city should be improved by public health institutions. The people themselves will begin improve and become more active and taking part in the social and economical improvements.
Improving the health and environmental sector in any city is not the only way that achieves sustainable development as many people think. Many urban sectors and items should also be developed similarly such as improved transport, house availability, promoting clearer zoning of different functions and reducing employment percentage. In Hebron District, the increase in the number of population and new human needs like infrastructure services, food, education …etc, lead to more expansion and new built up areas, which affect the natural resources, green areas, agricultural lands and harming the environment.

2.3 Sustainable Urban Development Dimensions and Principles

Sustainable urban development has three main components that are economical sustainable development, social sustainable development and the environment sustainable development. The fundamental component must be in balance and requires an integrated approach, interactions between economy, society and the environment. In the previous definition section, the researcher presented part of concept of sustainable development and in the following

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1 The Author puts this picture as an example only, hence; other cities in Germany are also in the top 10 as shown in website, www.forbes.com/2008/07/21/cities-Europe.
section; the researcher will explain more about the sustainability component which has following topics:

a. Social (socio-cultural) sustainability involves cultural heritage, human relations among people, education, skills, health ...etc.
b. Economic sustainability includes job opportunity; new trades manufactured goods, projects, infrastructure services, information resources, banks...etc.
c. Environmental sustainability comprises protecting natural resources, reducing pollution, waste management; biodiversity, green areas...etc.

Sustainable development Planning, as a system and processes for modern urban strategies is recommended to be the way of achieving sustainability aims at the local, national and global levels by integrating natural resources and industries with people’s needs and new life style systems

Figure (2.4): Main Sustainable Urban Development component

For any sustainable development process, several guidelines should be followed by city and town planners as well as decision makers in order to save city resources, renewable energy sources, create jobs...etc The main relevent principles are to:

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1 The author built this figure, as a means to show that sustainable development is process and movement actions, with three main components: environment, economic and social conditions.
Figure (2.5): Principles of Sustainable Urban Development (Source: Developed by the researcher)

The above mentioned principles are the guidelines that could be different for the places depending on the type, size and identification of urban areas. However, they are needed to build sustainable development mainly for economical, social and environmental development which should be handled and integrated with other components like transportation, land use, housing, cultural heritage …etc. The following are the rules that should be taken into consideration in the researcher’s point of view for sustainable planning in urban areas like Palestine.

a. The sustainable development will not be successful if it is done in one place and affects others, so the planners recommend to integrate the local sustainable issues with the global sustainability.

b. The local people should take part in major sustainable urban planning process and transform the people’s objectives to be feasible in their lifestyle.

c. The sustainable development recommends setting the environment and green areas at the top priority.
d. Assessing and reviewing all master plans and big projects that are linked with sustainable processes and correcting the plans whenever necessary.

e. Building comprehensive data, research and analysis for all urban sectors and more particularly the economic, social, urban, environmental and cultural…etc via individual funds and support to the research center in the academic institutions.

The criteria, rules and principles of all the sustainability should reflect its definition which means to reflect the goal of sustainable development and one of the main problems facing the planner and decision maker for any urban sector is data availability, hence; missing any data will affect the other sectors. Due to this, the data and statistics are very important and fundamental before starting sustainable development process. According to this research, the researcher is looking for data that was collected from available resources, questionnaires and interviews as will be shown in the following chapters.

Figure (2:6): Some Integration between sustainable development component (Environment, Economy and Social). (Source: www.Sustainabledevelopment.
Finally, the sustainable development principles must be understandable and adopted by the ordinary people themselves as well as experts and the planner. Similarly, the sufficient criteria should provide and match a long-term view of the community. Hence, the final principles and criteria cover all the issues that are important to the community as the end user for any project and development.
2.4 The Purpose and Objectives of Urban Sustainable Development

As shown above, the main aim of the sustainable urban development is improving the quality of life of people living in cities, towns and villages. There are general and specific objectives for sustainable development which are divided according to sectors related to transportation, energy, water, sewage, waste, economy, social and cultural issues, landscape …etc. These urban sectors’ objectives are important not only to provide proper grouping of principles and objectives for sustainable urban development but also for defining the relations between each fields to the other. The following figure shows the defying of sustainability goals and how the planners could find the improvement and potential indicator.

Fig (2:7): Community Sustainability Auditing (Source: Jackson & Roberts, 2000)

The following is a brief summary of the general and sartorial sustainable development objectives:

2.4.1 General Objectives\(^1\).

\(^1\) The author tries to put the objectives that could be suitable for Hebron district ad to refer to many other references in this regard. He recommends the readers of any research about the
a. Putting proper policies to save the local and global resources and environment.
b. Developing the natural resources in a way that does not harm the coming generation's requirements.
c. Improving the economical conditions and reducing unemployment.
d. Encouraging the political decision maker to adopt the required sustainable development laws and regulations to organize.
e. Developing public and private infrastructure services (i.e. transportation systems, water, electricity…etc).
f. Developing and strengthening the urban environmental conditions by improving the public sharing and awareness, as well as adopting good planes and sufficient rules.
g. Creating good political, social and environmental relationships among people in cities and their surroundings.

2.4.2 Sectors’ Objectives

2.4.2.1 Urban structure

a. Building sustainable urban plans on the principle that coordinate and organize the city’s urban fabric with the surrounding areas like villages and deserts to be one large urban area.
b. Having a permanent urban planning that matches people’s needs and human scale.


c. Constructing public building and creating green areas for people use.
d. Improving the centers of cities, towns and villages landscape.
e. Improving public transport by using modern systems and technology.

2.4.2.2 Transportation
a. Using environmental designs models like pedestrians, cyclists, passengers of public transport and reducing car traffic.
b. Improving the weak parts of city transportation system like short distances and center easy access.
c. Searching for sustainable alternative transportation options that are sufficient and sustainable.
d. Setting road safety as a top property and a healthy traffic system.

2.4.2.3 Social and Cultural Issues
a. Increasing people’s participation in the sustainable urban development process.
b. Strengthening city social connections and security.
c. Searching for better alternative lifestyles
d. Showing the cultural identity via activities, conferences and publications.

2.4.2.4 Economy
a. Providing a public area for public projects, improving land use management and building green landscape areas, and promoting the economic conditions and creating job opportunities for all People.
b. Improving the use of new software and technologies in all service sectors and mainly in Infrastructures services, transportations, energy, and water consumption….etc.
c. Improving the local and national economy by using local people and materials as possible.
d. Building a financial system that makes housing balanced and gives equal opportunities.

2.4.2.5 Landscape and Land use.
a. Increasing the use of open and green landscape.
b. Building a balanced planning between urban built-up area and natural resources. Encouraging local people to participate in land use planning
c. Putting different plans for different areas and different climate conditions.
d. Putting comprehensive integration plans for green areas and water surfaces and using water from treatment plants to irrigate streets landscape.

2.4.2.6 Energy and Resource Efficiency.

a. Encouraging the green buildings policies and giving promotions.
b. Encouraging the use of clean energy and producing electricity from new sources.
c. Promoting recycling of organic waste and reducing hazard waste.
d. Finding alternatives to replace green systems instead of hazard transportation systems.

Figure (2.8): City Model for the Main Elements and Objectives of Sustainable Development¹.

¹The main background is taken from (Khatteb, 2007) and the same Figure was found in the website (www.arab-eng.org/Urban Planning Section), the author only changes the text, hence the purpose of this figure is to give a general overview of the sustainable development elements and how the ideal city could be in the planners’ vision.
2.5 Heads of Sustainable Development

To understand more about the sustainable development components and contents, the researcher addresses the main heads of sustainable development in the following sub-chapter. This part gives a good background and the information needed by the urban planner and decision maker working in the sustainable development field.

2.5.1 Economy

"Thus economists, other social scientists, and policymakers adopted a framework of thought which was much more ambitious in its scope than previous formulations of political economy. The clear goal of economic development policy was to raise living standards throughout the world, providing steadily more goods and services to an expanding population. The international institutional structures set up after the second world war, including the International Monetary Fund, the World Bank, and the United Nations, were specifically designed with this goal in mind" (Harris, 2000. P3).

Economical sustainable development is one of the most important components in urban sustainability. It has many facts, definitions and principles that affect any sustainable urban development progress and the following is a summary of the characteristics and principles of economical sustainable development. The coordination and partnerships between public and private companies, organizations and institutions could be useful for sustainable development through reducing funding from the public sector and raising the return on investments of the related private sector projects and investments. Due to that, the sustainable development should put the necessary plans and policies to manage and control the overlapping between the two aspects.

Nowadays, the new telecommunication technologies such as internet, mobile phones, fiber optic cables and the related software have become pre-conditions for good institutional production, trades, research activities, access to scientific

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1 In Palestine, the public sector has minor input and rule for economical and social development; hence, the privat sector is the main body that leads any new plans and development as well as the NGOs which have now hundreds of employees and projects in different sectors.
knowledge, culture, recreational activities, shopping and information exchange. Modern industries and telecommunications save time, money, energy and even traveling (i.e. in general traveling from urban planning view). By using these telecommunication technologies, distances to schools, hospital, offices will be shorter, and traffic in the morning rush hours\(^1\) will be less. Due to this, the whole life style is changing and the sustainable development planner should take this fundamental issue into account by putting the proper plans and adopting them in sufficient way.

The management information system and the new telecommunication systems made it easier to coordinate all efforts related to urban planning and people services, managing construction sectors, authorities’ requirements, and official approvals …etc. This kind of technology could help the economical sustainable development, however; many municipalities and local authorities in the developed countries started using this kind of facilities which should also be included in any sustainable development policies and agendas.

2.5.2 Social and Cultural Issues

"A socially sustainable system must achieve distributional equity, adequate provision of social services including health and education, gender equity, and political accountability and participation" (Harris, 2000.P6)

In order to meet social and cultural sustainability, it is necessary to fulfill the needs and requirements of the people as the end users. Therefore, the planner addresses social challenges such as ethics, political attentions, cultural history and people’s qualifications. People in most Palestinian cities have different ages, coming from different ethnic groups, religions, lifestyles, and even their health conditions are different, in addition to the immigration factor. All this requires the planner to satisfy the various desires and needs of various groups.

The cultural issue is a complex phenomenon because it is based on human behavior, Democracy, Gender and women works are challenging issues in Palestine. Any planner should be careful in dealing with such issues because

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\(^1\) In Palestine, the Israeli and Palestinian interests overlap in many service sectors which gives better opportunities to Palestinians especially in the telecommunication system as Israel is one of the best countries in this sector.
people differ in their understanding of such concepts and a lot of people reject any new changes or systems which implies a direct effect on any sustainable development process. However, we can see that there is a good participation of women in both the governmental and private sectors, and there are also changes in family size and functions. All this led to a new concept of urban planning and sustainable development aspect in Palestine. Democracy and transparent decision-making are the perfect tools that guarantee the people’s satisfaction, particularly those living in the city. Moreover, the people’s participation could prevent committing any mistakes, and could give them good feeling of transparency, accountability, equity and efficiency. The planner should raise the public awareness and sharing participation in sustainable urban planning by calling people to meetings and workshops. She should provide the necessary information for improving future plans process. The most popular method of involving the local people is conducting interviews with the key representatives of public organizations and NGOs, workshops as well as roundtable discussions. This is basically done to achieve a public participation, and thus the future users of the project and urban planning should be convinced with their own beliefs. The following figure shows economic, social and other items used these days in the European countries, and hoped to be used in Palestine in the near future regarding the sustainable development process. Hence; same concept can also be used in Palestine.

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1 In Palestine, as in other third countries, democracy and public people involvement in decision making are still in their initial stages although may projects, workshops and conferences are funded by EU, UNDP and USAID for Palestinian Authority organization reforms and Democracy.
2.5.3 Physical and Environmental Planning

2.5.3.1 Landscape and Land use

Physical urban planning refers to all the items and projects that are visible to people such as roads, water networks, electricity, landscapes …etc. Nevertheless, most of today’s cities have master plans that promote sustainable land-use planning. Many big cities in different countries have shown strategic planning processes, but most of them, especially in the Arab world and more particularly in Palestine, are not following the sustainable development principles or frameworks. However, certain guidelines should be taken into account and even adopted in sustainable land-use /Landscape planning and more specifically in the case of Palestine. The guidelines are:

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1 The author means the first world countries , but in Palestine many of the cities, towns and most villages still have no master plans (will discussed more in the following chapters)
a. The land-use /Landscape plans should achieve as much as possible of the full range of urban events and values such as housing, employment, big projects and infrastructure services. Moreover, the planner should work on the main aims in order to reduce the need to travel long distances to schools, work, shop and different services.

b. The land-use /Landscape plans should develop high land price value such as city center areas by using the high density mixed employment, residential and other governmental requirements, in a way that reflects the modern styles and at the same time linking it to the cultural heritage.

c. The land-use /Landscape plans should be restricted to the public spaces, pedestrian networks, preservation of historical buildings, attractive streetscapes that reflect the Palestinian community identity.

d. The land-use /Landscape sustainable development plans should also adopt effective use of natural areas such as green areas and open spaces and use them as a part of the urban fabric.

Picture (2.2): Green and Landscape Areas inside Hebron
(Source, Researcher: 2008).1

1 In general there are few landscapes and green areas constructed inside the Palestinian cities. Only small trees and short grass are planted along the main road and centers.
2.5.3.2 Sustainable Transportation System

The sustainable transportation system plans and principles attempt to provide people with safe and smooth roads. They also aim to help people reach schools, work, shopping centres, in addition to access to the basic services by providing the people short and cheap public transportation system. "Sustainable transportation system should also reflect the city image and to have a city with a balanced transportation system designed for people to travel safely and effectively. Moreover, pedestrian and bicycle facilities shall be designed, encouraged and celebrated as indicators of a healthy" (Saleh, 2007 & Hasna, 2007). The transportation system should reflect human scale, pedestrian, bicycle and other community-enhancing features. The following issues should be considered during transportation planning in future sustainable development.

a. Air Quality

The increasing numbers of cars and vehicles on roads cause air pollution, and thus the transportation models should focus on the systems in which less motor machines are used (i.e. using cycling and walking systems).

b. Land Use is another policy for transportation development plans. It is a policy that depends on constructing safer streets for pedestrians and bicyclists and improving the street landscape and the limiting urban conflicts like narrowing the crossing distance, bridges, underpasses and creating a more environmentally-friendly streets.

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1 The Palestinians mainly use cars and buses to travel from one place to another. This in turn increases air pollution and leads to more environmental risks.
c. Technology and People’s Participation

Many activities and services could be provided by the internet and telephones and further by the global positioning systems (GIS & GPS). These are being installed in private/public cars/buses to give passengers more accurate information and simultaneously to save time. Such new technologies help achieve sufficient sustainable transportation system. More importantly, people themselves should be part of this system in order to raise the needs for public awareness.

d. Public and Private Health:

Encouraging sports and physical activities saves people, reduces illnesses and helps people avoid many dangers such as cholesterol and weight gain.

Finally, the transportation system is a key issue in the sustainable development and in adopting the above principles, guidelines, recommendations; sustainable and long term objectives for the transportation system could be achieved, however; following are also significant in achieving the main objectives:

   a. Encouraging any research projects and ideas about any new
transportation technologies in order to reduce fuel consumption.

b. Improving the quantity and quality of the different means of transportation as well as their services, safety, and expenditures …etc.

c. Increasing the efficiency and safety of private and public transportation systems.

d. Increase the streets’ green landscape areas and integrate them with the urban fabric.
Chapter Three

Evaluation of Palestinian Urban Planning and Local Government System with Contextual Factor and Drive Agenda for Research

3.1 Background
3.2 Jordanian 1966 Urban Planning Laws and the links with Sustainable Development
3.3 Urban Planning Laws and Regulations after Established Palestinian Authority
3.5 Conclusion and Recommendations
3.1 Background

The main aim of this chapter is to show the impact of the Palestinian urban planning, laws, regulations and local government system on sustainable development as well as the elements and urban issues related to this chapter. It comprises the most important part in surveying the study and in presenting a solid background for suggestions and solutions regarding sustainable development planning in Palestine. In this chapter the researcher addresses how the urban planning, master planning and local government project are prepared and supervised. The reason is that sustainable development process could not be built unless we know well how the above said system is now carried out and managed in Palestine.

According to Adel (2002) and to the data available in the Ministry of Local Government "The Palestinian urban planning and local government system have changed greatly during the last 100 years because it was ruled by Ottomans before 1919, by the British from 1919-1947, by Jordanians from 1948-1967 and by the Israelis from 1967-1994 " (Adel, 2002.P14). At present and after Oslo Agreement, Palestine is partially ruled by Palestinian Authority. Thus, it was mainly ruled by foreign powers that have put the foundations of the Palestinian urban planning laws and local government system. None of these systems reflects the true interests and aspirations of the Palestinians. Hence, the urban planning regulations and the local government authorities were an extension and a mirror of the central authorities and were working for the benefit of the occupation rather than the correct urban planning, social and economic development.

"At the end of the British Mandate (in 1948), there were ten localities with municipal status within the area of the West Bank, including Jerusalem. The Jordanian administration changed the status of 16 villages to that of municipalities making 26 municipalities. These Jordanian decisions were directed by political considerations. Thus, Dahariya, with a population of 4,875 in 1967, was a village council whereas Bani Zaid, with a population of 2,165 in 1967, was a municipal council". (Benvenisti and Khayat, 1988).
According to Abdulhadi (2002) "The first official Jordanian law that was applied in all over Jordan and the West Bank has managed the organization and the local village council works was issued in year 1955\(^1\). The law gave the governor and ministry of interior the power and authority to appoint a village council which includes Al-Mukhtar (Village Head) with other members who were sometimes elected by the town/village"s men only" (Abdulhadi, 2002.P5). The names, duties and responsibilities of the head of the municipality/village council and its members were determined by the governor (Mohafeth in Arabic). These duties and responsibilities of municipality/village councils that overlap with other public authorities, but in general the municipality/village council is involved in the building or expanding schools, public buildings, health services, road construction, water, electricity …etc.

"In Jun 1955\(^2\), the Jordanian government issued the municipalities’ ordinance to govern the mentioned responsibilities and the functions of local authorities, however; upgrading the British municipal corporation was issued in 1934" (Abdulhadi, 2002.P6). The law involved many articles and clauses and was generally put to increase the influence of the central authorities rather than giving power to local authorities and councils. Not only did these laws give the minister of Interior power to interfere in the major urban planning issues according to Articles (No.1 & No.5), the establishment of new municipalities was also subject to the approval of the ministry of interior. Because there was no ministry for local government or urban planning at that time, the local councils were under the direct authority of the ministry of Interior.

According to Article (No.5 &No.8), the duration of the municipality council was limited to four years only and the minister of Interior had the right to terminate a council at any time. Moreover, the laws stated that the fund sources

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1 Before this law, the British mandate for the year 1934 was applied
2 The reader can download the Jordanian ordinance 1955 law (Arabic Version) from the official link http://www.lob.gov.jo/ui/laws/search_no.jsp?no=29&year=1955
and budgets breakdowns of the local authorities should be approved of yearly by the main ministry at the capital (Jerusalem) before being implemented.

Map (3.1): The West Bank was under Jordanian Rule form 1948-1967(Resource, Palestinian National Geographic Center -GIS Department-2007)

In 1967, the Israelis occupied the West Bank. Due to this, fundamental changes on the structure, functions and framework of the urban planning and local government system in the West Bank took place. "The Israeli occupation authorities issued numerous military orders to support the military

1 The map shows the West bank under the Jordanian Rule from 1948-196, and Gaza under the Egyptian rule from 1948-1967. After the six-day war in 1967, both West Bank and Gaza became under the Israeli Occupation.
administration authorities in order to control the activities of municipal and village councils. The area’s military governor was granted all the powers over local councils previously vested in both the Mutasarrif (district governor under the Jordanians) and the Jordanian Minister of Interior" (UNDP-MoLG, 2002.P13).

Map (3.2): the West Bank before Oslo Agreement (Source, ARJ-GIS Unit, 2007).

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1 Israelis' military adopted most of Jordanian local government’s laws, but some of the military orders aim to give more power to the governor who has the power to Israel Civil Administration to control all of local affairs and to follow the Israeli government intentions.
After Oslo agreement in 1993, establishing the Palestinian Authority was the first step of Palestinian independent government new fundamental changes took place in the Palestinian urban planning and local government system. The Palestinian Authority under present Yasser Arafat set the ministry of planning and international cooperation (MoPIC) and the ministry of local government (MoLG). Both ministries are responsible for the developing the urban planning, municipalities’ management and local governance system as well as meeting the Palestinian Authority political requirements as one means of encouraging, developing and improving democracy in Palestine. Both Ministries are based in Ramallah and have various district offices including that of Hebron.

In 1997, a new local government Law was issued and approved by the Palestinian Authority leader Yasser Arafat. According to the new law, the structure, responsibilities and financing of local authorities are specified and limited compared to the Jordanian law. According to it, the members of the local authorities should be elected by the people themselves through transparent elections, but the local elections were not yet fully held until 2005 except in some of the municipalities and the local village councils. Compared to the present time (2010), no elections were held in more than 40% of local councils in the West Bank. Due to this, the democratic vision mentioned in 1997 law has not been achieved the present minister of local government appoints members of the municipalities and the villages’ local council for the

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1 “The Ministry of Local Government was set up on 25 May, 1994 upon the transition of power from the Israeli occupation to the Palestinian Authority. It is not necessary to say that, the governing infrastructure was in a state of complete chaos”. (Jarbawi, 1996):

2 The author believes that any research that investigates the sustainable development condition in Palestine should study these two ministries’ structure and decision making policy in depth.

3 According to Ministry of Local Government Data (2009-2010), the West Bank has more than 460 local authorities such as municipalities, JSC and Village councils. The first elections for these local authorities were conducted partially in April 2005, but until today around 40% was not held. In Hebron, almost 75% was still not held because of the political challenges and the new straggle between the Palestinian parties which prevent Democracy and election process.
unelected councils. On the other hand, there were serious needs for establishing new municipalities and local villages’ councils for the additional established towns and villages. The municipalities and local village’s councils has covered most of the urban areas but the actual geographical boundaries of most cities, towns and villages have not been defined\(^1\).

The small villages and rural areas that have no local councils have the so called project committees. Such committees are appointed by the ministry of local government to manage all the local affairs such as water, electricity, roads maintenance, aid distribution ...etc. Moreover, some of the urban and rural areas have been grouped together under what is called Joint Service Council (JSC) to facilitate the services and projects which has got its legal standings by receiving the approval of the minister of local government\(^2\).

In a meeting with the head of urban planning department at the ministry of local government (2009), he stated that "Since the establishment of Palestinian Authority in 1995, the department faced major challenges regarding sustainable urban planning development and managing the Palestinian local government system under the occupation and peace process. It became difficult because the different aims and procurers between the Palestinian Authority and the Israeli Occupation Agenda affect the functions and framework of the municipalities and local authorities. Moreover, there is no coordination between the different Palestinian ministries to meet the new development and modern systems".

This academic research report provides a discussion and an analysis of the present urban planning and local government situation in Palestine and how it could be improved and upgraded within certain plans and policies to achieve the sustainable development goals\(^3\).

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1 See More in Land use conflict and Urban Expansion in chapter 8.
2 "The JSC established in the West Bank and Gaza Strip is potentially an important element in the local government systems. Many new municipalities are probably too small for efficient service provision and probably would not have been formed if purely economic considerations were applied "(Makki, 2006).
3 In 2002, the Ministry of local Government in cooperation with United Nation Development Program (UNDP), Prepared a report about the local government system in Palestine under the title (Programmer of assessment to Palestine People –Support the Local Government Reform
3.2 Jordanian 1966 Urban Planning Laws and the links to Sustainable Development

After the 1955 Jordanian local authorities’ law, which had been applied in Jordan and the West Bank, a new more specified and detailed Jordanian urban planning law was developed and approved by King Hussein in 1966. Therefore, the 1955 local authorities’ law was replaced by the new law. The Israeli authorities applied the 1966 Jordanian urban planning law and the same law is used by the Palestinian Authority in the West Bank only. It is still partially applicable to (C) areas because they are still ruled by Israel and are still subject to the Israeli civil and security control\footnote{In Area (C), the Palestinian Authority should get Israel’s Permission for any new projects or house building. The urban/city planning regulations and municipality laws have been implemented by Jordanian rule in the West Bank in addition to the different regulations by the Egyptian rule in Gaza. Most of them have been adopted and used by the Palestinian Authority after Oslo agreement as pre the 1966 law.}. The below items and subchapters address the main components of the 1966 urban planning law in addition to the Israeli military orders related to sustainable development and urban growth management. They examine the roles of urban planning authorities and the structure under which planning articles are used according to the 1966 Jordanian urban planning law which is still used in Palestine\footnote{The reader can find the 1966 urban planning law via Link www.molg.pna.ps/Laws/tanzeem.pdf}. 

3.2.1 Urban Planning Bodies Hierarchy

The hierarchy of urban planning bodies’ system of the 1966 Jordanian urban planning law\footnote{The author returns to MolG Publications (1998-2009) to clarify the actual conditions in addition to the interview with Urban Planning Director in the Ministry of Local Government and the head of engineering department in Hebron, Nablus and Dora Municipalities as well as the questionnaires.}, is still the same, but with some amendments. For instance, the Ministry of Interior is replaced by the Ministry of Local Government. Discussion of the Urban Hierarchy will give the reader a reasonable background about the condition urban planning for more than 50 years, and
will also help set more proper sustainable development recommendations. The following bodies and hierarchy show the link to sustainable development

**a. Ministry of Interior**

The main duties of the Ministry of Interior are to control the country security and internal affairs. Because the municipalities are considered internal authorities, they were managed by the Ministry of Interior as in the Jordanian regime structure. The Minister of Interior is the head of urban planning hierarchy and his responsibilities according to the 1966 urban planning law are:

1. "Managing and heading the high planning council (HPC) which includes ministers and high-level government officials.
2. Declaring the planning areas where the master plans will be carried out.
3. Managing and planning land use to serve the public interest.

As mentioned previously, the concept of sustainable development was not present in the top urban planning establishment before the 1966 urban planning law, and attention was given to master and physical planning issues only.

**b. High Urban Planning Council**

According to the 1966 Urban Planning Law, the High Planning Council" is the top authority that can review and approve the district planning committees’ master plans. It is also responsible for approving of or cancelling any issued buildings” or project”s licenses. moreover, it is responsible for supervising other planning committees” master plans or license permits, hence; the High Planning Council has all the powers to issue local urban specific regulations only in accordance with the 1966 general urban planning law guidelines" (1966 law-Article 6). According to the 1966 Jordanian urban planning, the High Planning Council should be formed within the Ministry of the
The council is also responsible for coordinating and supervising land use plans and social/economical surveys that are necessary for preparing cities’ towns’ master plans. The High Planning Council deals with the physical urban planning issues such as master plans, land use and new building license without any considerations to sustainable development general objectives.

c. District Planning Committees (DPCs)

According to the 1966 urban planning law, and more specifically Article (No 8), "The governor (Muhafez) is the head of district planning committees which include representatives and the experts from different ministries and establishments such as the ministry of housing and public works, ministry of health, ministry of transportation, engineering associations, trade committees and municipality mayors, and the local urban planning committee. The responsibilities of district planning committees are as follows as in article (No.8):

1. Reviewing and approving of the initial draft of master plans in cities, towns and villages.
2. Evaluating the national urban planning and comparing it with the master plan or not.
3. Discussing and finding proper solutions for any disputes among different local authorities as well as local people.

The actual/present sustainable urban planning development laws in Palestine are still under a complete supervision of the high planning council which is the

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1 As per Makki report, 2004 "The Palestinian local government authorities have been influenced by the policies of the many authorities that ruled Palestine. The policies of these various authorities aimed at marginalizing the local powers and the importance of local government institutions compared to the central authorities. They also aimed at tightening the grip of the Central Authority over the Palestinian society. Therefore, Palestinian local government was mainly characterized by the lack of a real Palestinian Authority until early 1994".
top authority that supervises the urban planning issues. It has the power to issue a temporary law, and all public and private projects should match the master plans in order to get the approval of the council itself or from the other top authority. The 1966 urban planning law is old and needs more review and updating. Thus, different urban planner experts recommended the ministry of local government to prepare a new comprehensive and sufficient temporary urban planning that is able to achieve the sustainable development objectives.

3.2.2 Urban Planning Levels

In the 1966 urban planning law, many urban planning levels were mentioned and defined mainly the regional planning, city/town master plans and detailed plans. This part presents a more detailed discussion on this

a. Regional Plans: The 1966 Urban Planning Law does not mention the terms of National urban planning. It states regional planning and "The first regional plans for the West Bank was prepared in 1940 by the British authority for Jerusalem district and was named (RJ5) and the regional plan for the Nablus district was named (S15)" (Nihal, Thesis- Birziet University, 2008). The Israeli civil authorities in West Bank prepared two regional plans for the region depending on the 1966 Jordanian urban planning law\(^1\). The first regional plan was mainly prepared for the main roads in the West Bank as a means for connecting Israel's new settlements through bypass roads. The second plan was carried out to identify the expanding Israeli settlements areas around Jerusalem, mainly in the east and south. As for Hebron, no regional plans were prepared.

\(^1\) According to the ministry of local government files and data (2008).
b. **City/Town Master Plans** are usually more detailed than regional plans. They are mainly prepared for a specific city or large town. However, during the Jordanian and Israel's authorities, there were no sufficient or workable master plans for any of the Palestinian cities/towns. The only plans were carried out in both Jericho and Ramallah and were roughly draft plans with no review or even official approval. The major difference between regional and city plans is that the city plan is restricted to a certain city, town or village, while regional plans cover larger areas. Before establishing master plan the Palestinian Authority, roads and land use were only identified with map and colors. Sustainable development, but after the establishment of the Palestinian Authority the quality of master plans improved and more urban issue were addressed in these master plans(See the Dora master plan below). Nevertheless, they have not risen to the expected level in which they could achieve sustainable development objectives.
c. Zoning/Detailed Plans:

The zoning and detailed plans are mainly done by engineering consultant offices, but should be reviewed and approved of by the local planning committee such as municipalities. The committee can also approve of a detailed plan submitted by a certain zone or landowner, but any zoning and detailed plan becomes valid only after the approval of the district urban planning committee. If there is any dispute between the local committees and district committees concerning the plan, it will be forwarded to the central
planning department for final approval. Instances of that are city centers, universities plans, Complex Projects…etc.

Map (3.3): Example of Zoning (detailed), urban Planning for the center of Nablus (Source: An-Najah University, 2006).
3.3 Urban Planning Laws and Regulations after Establishing the Palestinian Authority

Generally speaking, the Palestinian Authority is using the Jordanian and Egyptian laws in its areas unless they are replaced by new Palestinian laws. In May 1994, "President of the Palestinian Authority Yasser Arafat issued a Presidential decision which states that, all the laws and regulations implemented before the 5th June 1967 continue to be used in the Palestinian lands (i.e. 'the West Bank and Gaza Strip' until they are united). Moreover, in 1995, Yasser Arafat issued a decree which called for the transition of all authorities and powers mentioned in the legislations, laws, decrees, and orders in the West Bank and Gaza before May 1994 to the Palestinian Authority" (UNDP-MoLG, 2002.P31).

As mentioned above, the Ministry of Local Government is the direct institution responsible for all Palestinian municipalities and local government councils. The Ministry of Planning contributes much to urban planning activities. In Palestine" The role of the Ministry can be summarized as follows: to lead the cross-sector planning, to develop comprehensive development policies with the participation of all relevant Palestinian institutions, and to coordinate and support sector planning in the concerned ministries and institutions so as to ensure their consistency with the comprehensive cross-sector approaches and plans. In this context, the Ministry develops different plans and programs and introduces them along with their policy foundations to the Cabinet for deliberation and approval; then referred to the legislative council for ratification" (PNA-MoP,2008.P2)

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1 The President of the Palestinian Authority Yasser Arafat’s decision should be published in the Palestinian Gazette (an Official newspaper published every six months) to be legal and used.
In 1997, President Arafat along with the Palestinian Authority council approved of the Palestinian elections for local authorities' law. In a meeting with the director of the legal unit in the Ministry of Local Government (2008), he stated that "The new Palestinian law gives a clear image of the local authorities’ framework, ministry’s structure, departments’ relation and work coordination between the elected local authorities and the ministry". According to the new law, the ministry of local government should submit recommendations to the minister’s cabinet (council) which includes the new establishment, structure and boundaries of any new municipality or village. The proposal should first be initiated and approved of by Ministry of Local Government. Nevertheless, the law is not yet applied everywhere because of the uncertainty and instability in the political and financial conditions.

In 2001, a new local authority body called for joint service councils (JSCs) which were founded under the supervision of Ministry of Local Government. According to Ministry of Local Government (unpublished Report, 2004) "The Ministry of local government seeks to develop and promote the plans and procedures on the ground in order to develop the quality performance for the Palestinian local government, also it aims to raise the level of services presented to the Palestinian society in order to compensate for the previous occupations". The idea behind this new body is to improve the standard and quality of services in the villages especially in the small ones, and it could be a positive step towards strengthening the local government activities and till

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1 The reader can find the Palestinian Local government’s 1997 law via the following link http://www.moj.gov.ps/official-newspaper/1997/20-1.htm

2 According to the new law, the functions of authorities of local government units are mostly the same of the 1955 Jordanian municipalities law, and hence there are many terms like city master plan, roads planning, building construction …etc. in the case the minister’s approval, the council has the capacity to delegate some of its functions to the contractors up to three years. The ministers’ have the power to issue any decision to the council in order to set up regulations that enable it carry out the duties or to execute the power.
2010, there are 54 JSCs that have been established in Palestine\(^1\). It is worth mentioning that most of the joint service councils are established mainly by United Nations Development Program (UNDP) which is concerned with projects such as building new schools, roads, water networks …etc\(^2\).

According to the law, the local government units such as municipalities and villages’ councils receive about 50% of the fees and fines collected by roads’ police and traffic fines in their area on a yearly basis while the remaining (50%) should be given to the ministry of financial affairs. According to Article (NO.26), the 1997 Palestinian local authorities’ law stated that "The central authority should give (50%) of the revenues to the local bodies in which they were collected, and the rest of these revenues is managed by the Ministers’ cabinet and recommendations of the minister of financial and other related ministers. The amount (50%) for each local authority is identified and approved of depending on the following facts and principles:

a. "The total number of people in the municipality/village."

b. The amount of fees and revenues collected by the municipality/village. .

c. In case that the municipality/village has a special condition, or a major project related to another locality, the amount increases automatically.

d. Moreover, the amount increases if the municipality/village has urgent needs such as building new schools, hospitals or constructing new roads …etc." (UNDP-MolG, 2002.P35).

The Palestinian Authority preserved the budget and fund distribution methodology that have been used in the Jordanian municipalities’ law for 55 years. The only change is related to Oslo agreement in which the Palestine is divided into three areas (A, B and C). This classification influences the amount

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\(^1\) There are special regulations that were issued in this regard by minister of local government. The regulations have not been published in the Palestinian Gazette yet.

\(^2\) The UNDP is one of the donors funding development projects in the West Bank and Gaza for more than 20 years. The UNDP have three offices in the West Bank and one of them is based in Hebron. They funded and supervised different projects of local authorities” development. For more information, go to the following ling, www.undo.org. The author also benefited from the UNDP research report about the local government system in Palestine, mainly the report conducted in 2002 and published in 2003.
of fund provided by the central authority to the local councils in Area (C) which is under Israel Civil authority and needs its approval. The budget of local government is still focused on the basic needs like salaries and infrastructure services” project and, the concept of sustainable development is not adopted. In a meeting with Dora’s municipality Director (2008), he said "many villages have no roads, water and solid waste collection, and when we have these basic needs, we will start thinking about sustainable development". At Present international donors and funders play a big rule in Palestine planning and local government system "The development of computerized financial systems for LGUs by different donor funded projects has enhanced capacity but it has not done so in a way that necessarily leads to the creation of a unified or standardized financial management system for the sector as a whole since systems developed by one project are not necessarily coherent with those developed by another". (UNDP-MOLG, 2009, P-ix)

3.3.1 The Legal base of Urban Planning Development

When the Palestinian authority was established, political leaders and decision makers put the Palestinian Authority’s legal foundation, which is a fundamental requirement for any state to organize and manage its people and their needs. Both of the Palestinian laws related to the elections in the 1966 local authorities” law and the 1997 Palestinian local authorities” law were issued and approved of by President Arafat. In fact, these two laws are not new as they are updated from the Jordanian laws. , the opinion of the legal consultant and planner in Palestine after 17 years of experience is that implementing the same Jordanian urban law is not the right choice. It is true that the West Bank is similar to Jordan in many aspects, but it has its own features and agenda and consequently should have different laws.
As of today, there are many overlapping issues to define the scope of works between Ministry of Local Government and Ministry of Planning\(^1\). Hence, in the new Palestinian law, the work specification of each ministry is not clear. Palestinians can feel some kind of competition if this term could be accepted-between the two ministries, but in general, the Ministry of Planning works at the national and regional planning level; while the Ministry of Local Government works at the city, town and villages” planning level. In fact, no real efforts have been made during the last 17 years to accomplish this mission, thus the 1966 planning law remains in force in the West Bank.

The Higher Planning Council which was under the supervision of the Ministry Of Interiors, is now under authority of the Ministry of Local Government. Its main function is to control and supervise the urban planning profile in the West Bank and Gaza. However, the legality of these actions is still questionable since the President of the Palestinian Authority simply did not any legal and approval steps when he decided to establish the High planning council. "The HPC consists of the Ministry of Planning ,Ministry of Local Government in addition fifteen members and representatives from environment , transportation, engineers associations …etc" (MoP , 2005).

In conclusion, one can argue against the 1997 new Palestinian urban planning Law in terms of its implementation in both the West Bank and Gaza Strip. Before the Palestinian authority, two different laws were applied in the West Bank and Gaza as shown above, whereas the Palestinian Authority has applied the same urban planning law in both areas since 1997 with no considerations

\(^1\) The Ministry Of Planning Mission is “Lead and coordinate the development process in order to achieve progress and prosperity for the Palestinian People, raise standard of living, and improve quality of life so as to catch up with the progress in different walks of life, taking into consideration the special situation of Palestinian aspirations, and the importance of involving all concerned institutions in the economic, social, cultural, environmental, constructional, and technological sectors, as well the field of capacity building. In addition, the Ministry seeks to adopt public policies, development and emergency plans, coordinate financing and implementation of such plans as well as follow up on their implementation with relevant local and international agencies.”(PNA-MoP,2008.P3)
for the differences of the physical urban fabric between both parts. The, following comment summarizes the main defects\(^1\).

a. The High Planning Council should have qualified technical and professional representatives of all public and private sectors, namely key figures from women’s associations, universities, consulting engineering, urban and city planners, economical, environmental and educational planners, local council members, environment authority, natural resources and protection organizations such as NGOs. Moreover, the main responsibility of the High Planning Council is increasing the technical and consultant staff to cover all urban planning activities.

b. The new Palestinian urban planning laws did not include detailed regulations and manuals for the different urban planning levels including the national planning, regional planning, metropolitan development, master city planning, town planning, village master plans and detailed plans. In this regard, it is recommended to specify the bylaws, roles and responsibilities of all the parties taking part in the previously mentioned plans because the sufficient details and guidelines could improve sustainable development plans in Palestine.

c. More coordination and actions should be taken by the planning and local government ministers as well getting the proper consultation from the Higher Planning Council about the national and regional urban planning issues. The two recommended tasks should be part of the proposal of the new Palestinian urban planning law.

d. According to the Palestinian local authorities’ law, the elected local authority for municipalities and local councils automatically becomes the members of local and district urban planning committees (i.e. members of local and district urban planning committees are not familiar with urban planning). The researcher believes that the new rules requires further discussion especially the part related to the members of

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\(^1\) This defect as per author discussion with interviews and workshops with planners of municipalities and Ministry of Local Government, the available publications and the author’s assessment.
the committees. Therefore, the members who do not know which decision should be taken will not be able to take the right decision. It is possible that the decision taken by unqualified members might have a negative impact instead of development and sustainable urban planning.

e. In the new law, it is recommended to specify the people”s demands and how to keep their right of objection against master plans or any damage caused by the decisions urban planning authority.

f. More Articles and Bylaws are required for improving the sustainable development process in the various sectors (i.e. economical, environmental and physical planning)

3.3.2 Palestinian Authority and Israel Urban Planning Challenges

The 1993 Oslo interim agreement between the Palestinian Authority and Israel gives the Palestinian Authority every right to get the official and governmental documents related to Palestinians and their lands from Israel's civil administration. In an interview with the director of Physical Planning Department at the Ministry of Local Government (2008), he said that "until the present time, the Israelis are still keeping thousands of files, maps and documents. Despite the numerous requests, there are no responses from the Israeli side. For instance, water resources maps, sky maps, files containing valid data of lands” and municipality”s precise boundaries were not handed to the Palestinian Authority". In fact, they are very important for any infrastructure project and urban expansion, and without them it will be difficult to go ahead. It is hoped that the political condition finds a way for the transition of these important documents and files/maps to the Palestinian Authority.

"Limitations to Palestinian planning jurisdiction, Planning and Zoning is a highly political issue. Under the Oslo Accords planning legislation lies within the jurisdiction of the Palestinian Authority (PA). However, this jurisdiction can only be applied in Area C, which still accounts for 59% of the Palestinian Territories, when there is joint agreement between Palestinian and Israeli authorities, but this is not currently exercised. The effective jurisdiction of
Palestinian planning legislation is also affected by the construction of the Separation Wall” (UNDP-MOLG, 2009, P.34). According to Oslo interim peace agreement, if the Israelis reject any new regulation or project, the Palestinians can have negotiations if the project is located within Areas (B & C). However, if the project lies in Area (A), the Palestinian Authority can do any kind of building, but for infrastructure projects such as waste and draining networks the Israelis approval is required." According to Oslo, the Palestinian side has the right to guarantee that Israel projects in Area (C) will not harm the Palestinian permanent urban conditions or the infrastructure services. The Palestinian-Israeli coordination civil committee must be notified of all the new Palestinian construction projects, urban laws and regulations related to urban planning issues; but until now most of these agreements are on paper and there is no urban planning projects, procedures or even of construction activities " (Ramiz, 2006, P.9 & ARIJ Report, 2007, P.4).

In 2004, the Ministry of Local Government and that of Planning received a grant from the government of Norway in which a Metropolitan Plan for Ramallah, Al Bireh and Beituniya (RABMA) is prepared. This is the first one that margins and coordinates between Areas (A, B&C) in one project as shown in the map below. More than 50% of metropolitan Areas are in Area (C). The researcher believes that this kind of project is needed and recommended all of the West Bank districts, but the planning projects could not be implemented without an Israeli approval which was not obtained yet.

\[1\] "MOPIC 1999, proposed a metropolitan plan for Ramallah/El Bireh as a pilot project to develop policies relevant to planning needs and priorities as perceived from local level. Ministry of Local Government and Ministry of Planning together with other stakeholders have agreed to conduct a Metropolitan Plan for Ramallah, Al Bireh and Betunia. This is done in cooperation with the municipalities and villages involved. This is the first attempt to develop such a plan within the existing situation characterized by a Palestinian state under formation but still under military occupation" (MoLG-Un-Published Metropolitan Report, 2006)."

The researcher believes that the success and sufficiency of urban planning and local government system depends on power given to local authorities by the central authority. The decentralization of powers will improve the political and economical conditions and encourage local people’s participation in the political and decision making issues; thereby enhancing the development of the private sector. Moreover, this will lay the foundations for more sharing and interactions between the government and its people. Central government such as Ministry of Local Government is based in Ramallah and works at the national level. In addition, it is responsible for controlling/supervising all the activities of municipalities and local councils, and the ministry has offices in different Palestinian district.

"In the Palestinian context, there are many actors involved in participatory planning processes. These include central government, local government, civil society organizations, private sector/business organizations, experts (academics) and donors, to name but a few. Each of these actors comes into a participatory planning process with their own distinct organizational cultures and backgrounds to planning. Each would participate in a planning process for a variety of reasons that may not be shared with the other actors they deal with. Actors that participate in a planning process are not neutral. Each can be expected to defend and promote their interests. The power relationships between and among these actors will invariably bear upon the dynamic of the participatory planning process itself, as well as what results are derived"(Mousa, 2006.P29).

According to the law, the local councils especially the big municipalities have full powers over collective choice decisions such as the activities and services where tolls and taxes do not reflect the full social dimensions of the benefits received by users. When small local committees need some services, they ask the according to law nearest big municipalities before anyone else which could lead to misallocation of resources or the neglect, in some cases, of deprived
neighborhoods. Moreover, some of the municipalities of large cities in Palestine like Nablus and Hebron have local agenda that do not match the national level which made comparative advantages of choice between central planners and local agents. For example, the central authority may set targets and standards in roads and a budget to meet these. The details of how the money should be spent are a matter of choice for local councils and decision makers who could use it to build new government buildings, schools, water network ….etc.

The two main levels of the Palestinian local government system are the central and local levels. The central level or the top administrative level belongs to the Ministry of Local Government as well as its main headquarters in Ramallah. In addition, the ministry has branches in each district. These branches are representatives of the main headquarters and deal with all correspond to the boundaries of the governorates and the district branches” offices report directly to the ministry in Ramallah. The second level is that of the local authorities such as municipalities, joint service councils, and village councils "The number of local authorities increased more significantly after the establishment of Palestinian Authority in 1994. In Palestine there are more than 132 municipal councils, 52 JSCs and 278 village councils. Moreover, the structure of the local government underwent a major re-organization in 1997" (MoLG –Data, 2008-2009). However, there was political decision behind the number of these local authorities rather than clear objective or technical criteria. This study will be the first comprehensive academic research that covers and examines the status of urban planning issues in Palestine and the relation between the local government systems as well as the correct actions that should be taken to improve the urban planning condition to have sustainable development for future generation in Palestine. Hence, more studies should be conducted in order to determine the adequacy and feasibility of the changes in the system of local authorities which had a significant impact on local people. It is also recommended to assess its impact on the social and
economical situation in terms of sustainability\textsuperscript{1}. It is clear that the increasing number of local authorities cause a lot of problems, and more particularly financial and technical problems, hence; the movement of founding the large number of municipalities did not improve the developmental benefits because many new municipalities were not able to get their own financial support or they did not have a qualified administrative or engineering staff. They depended mainly on the central authority (Ministry of Local Government, Ministry of Planning, Ministry of Housing and Public Works and Ministry of Finance) or outside funders such as USAID, JAICA, UNDP, EU…etc. Such involvement affects local development plans and reduces any chance for sustainable development\textsuperscript{2}. The following section gives more about the Palestinian urban planning government authorities, structure and responsibilities

3.4.1.1 Ministry of Local Government

The vision of Ministry of local Government is "A democratic local governance system able to achieve sustainable development with effective community participation" (www.molg.gov.ps).

The ministry of local government (MoLG) was founded after the establishing the Palestinian Authority and it is one of the most important portfolios in the

\textsuperscript{1} There are many funded programmers that support the works of the Ministry of Local Government since 2000 until now. Instances of these are Local Governance Support Programmer (LGSP) funded by Japan and conducted by UNDP 2004 & 2009, and Local Government Capacity Building Programmer (LGCBP) funded by Denmark and conducted by the World Bank in 2005. These projects are restricted to the ministry structure and ways of work. Still no projects are funded to improve the conditions sustainable development.

\textsuperscript{2} The Palestinian Authority’s president Yasser Arafat issued an order to divide the West Bank and Gaza into thirteen (now seventeen) governorates and each district governorate headed by a governor. The governor represents the central authority and has significant powers (mohafeth) in his areas including security, municipal and village councils and supervising all government agencies in the district. Due to this, the municipalities” and villages” councils have two different authorities, the governor and the ministry of local government office director.
Palestinian government, hence; it’s the authorized body for all of the urban planning and development in cities, towns and villages. The following part summarizes all the activities and conducted by Ministry of Local Government concerning urban planning and sustainable development and their relation to the needs of the local people as well as the possible implications of its policies for the country’s economic and social development. In an interview with Local Government Office Director in Hebron (2008), he said that "Many assessment reports have been written by local and international consultants, but most of these assessment report's recommendations are still on paper and none of them has been implemented. This kind of studies started in 1994 and since then there have been numerous efforts that aimed at improving the municipalities’ performance, enhancing their employees’ capacity and providing the urgent urban issues that need immediate action ".

According to Jarbawi (1996), the Ministry of Local Government outlined an overall policy that stated, "establishing the concept of local governing and administrative decentralization in the Ministry, the advancement of the institutions of local government in a manner that accommodates the national goals of building a Palestinian civil society based on democratic elections. Also the ministry is responsible for raising the level of services in rural Palestinian areas in an attempt to alleviate the existing discrepancies between the urban and rural areas., Moreover, the Ministry Consolidates the autonomous capabilities of the local bodies and reviews the conditions of the local bodies that existed before the Palestinian National Authority, in an effort to reach a perception of local government that was well adapted to the peculiarities of the Palestinian society" (Jarbawi, 1996).

1 When the Palestinian authority was first established-as any new government at the Third World - beside the bad political and economical situation , the overall government’s structure was not clear. Not only was the structure depending on vertical rather than horizontal relationships with a few staff on the top level. In general the structure of any government or organization depends on the type of main objectives and the kind of people and work done which could be applied to Palestinian government structure. Hence, all Palestinian ministries reflect the purpose of control rather than development and many universities’ structure and even names are a copy from other Arab countries.
The following figure (3.2) shows the administrative structure of the central authority and local authorities.

Figure (3.2): The Administrative Structure of MoLG\(^1\) (Source: Mosua, 2006. P13).

Regarding the Ministry of Local Government, the fundamental part is linked with the central local authorities mainly related to issues of urban planning and services. The Ministry of Local Government needs to upgrade its administrative system in order to achieve decentralization, and even the whole structure needs to be reviewed or changed. The said change needs more practical studies and income from local experts and people. Otherwise, the system will continue as a classical government’s system with a minimum contribution from the people. The following figure (3.3) shows the level of Ministry of Local Government in the Palestinian Local Government structures.

\(^1\)The reader can find the detailed structure in Ministry of Local Government’s website (www.molg.pna.ps) and for more on the activities of high urban planning councils, visit (http://www.molg.pna.ps/About_magles.aspx)
The responsibilities and scope of work in the Ministry of Local Government are identified in the Ministry of Local Government law that requires developing the local government system by indicating the job description for each of the local government organizations as well as defining their geographical and administrative boundaries, monitoring their performance and providing the necessary advices. The existing law in the local government

1 According to the ministry of local government data(2009) they prepared more than (26) bylaws based on Articles (No.1 ,No.6 ,No18 &No23) of the1997 Palestinian local authorities law but the issue is that none of these regulations/bylaws has been published in the official Palestinian gazette not only that the Palestinian municipalities have not initiated regulations , On the other hand the law give authority and power to the local governments units where another governmental body(ministry of housing & public work, ministry of transportations) has developed a legislation related to their function, and should coordinate with the Ministry
units does not give the Ministry of Local Government a wide scope of interference and appears to be contrary to the ministry’s proclaimed policy of promoting decentralization. "The ministry of local government provides similar opportunities of urban service and local participation to all the Palestinians cities, towns and villages, and it further attempts to create opportunities for developing comprehensive local urban planning. The Ministry of Local Government is functioning at two levels: the geographical and the administrative levels. Hence, the main office of the Ministry and the district offices are based in Ramallah. The specified tasks of the ministry of local government " (UNDP-MolG.P52,2002 reviewed Partially 2005).

In an interview with the Head Of Urban Planning Department-Dora Municipality (2008), he said "the Ministry of Local Government controls and supervises the functions of the local government organizations (i.e. municipalities, villages councils and JSCs) especially plans, budget, public projects, financial policy, administrative, legal and special procedures related to local government organizations". The other tasks are supervising and improving all the technical and administrative works related to urban planning and master detailed planning in cities, towns and villages and to intact all bylaws and guidelines required to implement all the functions of the local government’s units which match the general government policy. As mentioned previously, there is no sustainable development policy adopted or encouraged officially by the ministry concerning the works of local units due to the lack of a political, financial and legal basis for improving the sustainable development. Besides, there are no qualified Palestinian experts in local government’s organizations who are not only familiar with sustainable development concept and agenda, but also understand and work on them.
3.4.1.2 Municipalities

According to the 1997 Palestinian Local Government’s law, all local elected councils- from small village council ( around 84 people ) to the large municipalities ( around 250,000 people )\(^1\) almost have the same functions, hence; there is no distinction between the different types of local government units according to laws. But practically, there is an essential need from the side of the planner and decision maker to have different functions and responsibilities for the different types of municipalities.

Table(3.1): Municipal Organization/Classification in the Palestine, 2009\(^2\) (MoLG, 2009).

<table>
<thead>
<tr>
<th>Municipal Classification</th>
<th>Population #</th>
<th>Number</th>
<th>Council Members #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality Classified as (A)</td>
<td>10,000 and more</td>
<td>16</td>
<td>(Main Municipalities) 15</td>
</tr>
<tr>
<td>Municipality Classified as (B)</td>
<td>8,000 -10,000</td>
<td>44</td>
<td>(Small city/Town Municipality) 13</td>
</tr>
<tr>
<td>Municipality Classified as (C)</td>
<td>4,000 - 8,000</td>
<td>48</td>
<td>(New Municipalities) 11</td>
</tr>
<tr>
<td>Big Village council /Small Municipality Classified as (D)</td>
<td>1,000-4,000</td>
<td>216</td>
<td>9</td>
</tr>
<tr>
<td>Development Committee Classified as (A)</td>
<td>1,000-500</td>
<td>85</td>
<td>7</td>
</tr>
<tr>
<td>Development Committee Classified as (B)</td>
<td>80- 500</td>
<td>60</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>469</td>
<td></td>
</tr>
</tbody>
</table>

The actual conditions in small village councils is managed by a few number of people (3-7 members only) volunteering to work. In most villages, they have no office nor a staff dedicated for situational works. But large municipalities have an urban planning department and other departments supporting urban planning such as environmental projects department, Department of Public

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\(^1\)The two largest municipalities in the West Bank are Nablus and Hebron where around 250,000 people live in the municipality boundaries, (MoLG-Data, 2008).

\(^2\) The Source of this data is the Ministry of Local Government (2009). The figures did not include Refugee Camps. Moreover, The classification sometime did not depend on population numbers, but on other political, cultural and financial reasons.
Relations … etc. The number and structure of municipalities’ departments differ according to size, location, organization age, people’s needs, economical opportunities and other available governmental authorities.


The most common departments’ structure in large municipalities consists of:

a. Municipality Mayor: the head of the municipality and the top authority.

b. Administration Department: is the one responsible for supervising the administrative issues in and outside the municipality such as personnel affairs, attendance … etc. In most of the municipalities, the municipality director manages this department.

c. Public Relations’ department: is the department responsible for building good relations between the municipality and other

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1 The structure of Hebron’s Municipality contains these departments, then comes these of Dora and Halhul.
2 The author visited all Hebron District Municipalities (14 municipalities), and filled a questionnaire inform each one (See attachments). In addition, the author made interviews with municipalities’ engineers in 2008 and 2009.
institutions or municipalities inside and outside Palestine. It is responsible for all activities of the municipality and for sending them to the local newspaper and media to be published.

d. Strategic and Development Department: this department is linked directly with Municipality Mayor. It collects the necessary statistics, reviews present plans; prepares strategic plans, and fundraising proposals.

e. Finance department: the department responsible for accounting, collecting fees and revenues, salaries and budget control. It contains from (2-5) employees.

f. Planning and Studies Department: this one is responsible for supervising and preparing master plans and studies needed. Besides, it collects all kinds of data about population, services and population growth’s requirements.

g. Engineering department: this department is the largest of all departments in the municipalities. It is responsible for the planning of buildings and roads, technical support, construction permits, infrastructure and building projects in terms of designs and supervision…etc. Its staff consists of planners who are civil, mechanical and electrical engineers.

h. Water Department: mainly water and hydrology engineers work in this department which is based in big cities only and aim to construct new water networks, sewage water treatment and to find new sources of water, water networks maintenance.

i. Health and Solid Waste Department is responsible for health standards such as restaurants’ health quality, solid waste management, construction of new landfill and raising the environmental public awareness.

Some of the large municipalities contain other departments or services such as public building, library, cultural centers, social services” section and information technology supporting systems. However, in some municipalities,
the functions are divided among more than one department. The following functions are related mainly to the municipalities rather than small villages’ councils.¹

a. Preparing master plans for the cities and towns.

b. Controlling and organizing all urban issues such as buildings’ and projects’ permits.

c. Planning and constructing new roads as well as improving Public transportation system.

d. Building new public buildings (schools, hospital, car parks …etc.

e. Providing water and constructing new water networks as well as sewage networks and building treatment plants.

f. Managing and maintaining electricity supply. In some municipalities, it is provided by individual companies such as South Hebron Electricity Company.

g. Organizing street advertisements.

h. Managing the urban environment and public health.

i. Organizing some of the cultural and sports activities².

The municipalities in the West Bank are supposed to carry out the majority of the functions stated in the law³. In October 2005, the Council of Ministers founded the Municipal Development and Lending Fund (MDLF) "The main objective of the Fund is to encourage the flow of financial resources from the Palestinian Authority and various donors to the Palestinian local government units LGUs and other local public entities to improve the delivery of local infrastructure and municipal services, to pro-mote economic development, and

¹ As it said above the Questioners analysis and municipalities engineers Interviews, shows these municipalities functions, mainly in Hebon Municipality, Dora Municipality, Yatta Municipality, Dahriya Municipality and Halhul Municipality.

² All of these activities are not held by the municipality only, but most of them are managed by municipality with the participation of other organizations such as universities and other ministries, NGOs…etc.

³ The reader can visit the websites of the municipalities for more information about the classified big municipalities’ works, structures and urban planning activities the researcher also recommends three municipalities in this regard 1.Hebron Municipality (www.hebron-city.ps), 2.Nablus Municipality (www.nablus.org), 3.Al Berah Municipality.

The Municipal Development and Lending Fund (MDLF), have different buildings, management and work procurers from those of the Ministry of Local Government, but are still under the authority of minister of Local Government. In many cases, the municipalities carry out extra functions that are not specified in the law, and are not even related to their scope of work in coordination and fund from the (MDLF)\(^1\). Therefore, the municipality is the first body that provides a wide range of services to people. Instances of these are emergency services; creating new job opportunities, building new hospitals and schools and most of maintenance works for all public and governmental places.

In municipalities, the employees report to the head of the department and then mayor; but in some municipalities the senior staff report to the general director or to the chief executive officer. As stated above, these departments and structures could be applied to big municipalities. Small municipalities have a small number of employees, namely the mayor, council members, one engineer, a document controller, a secretary, a driver and three labors with no approval of any budget that has never been prepared.

Finally, the municipalities have a major role in sustainable development programs in Palestine. Most recently, the participation of the private sector has increased and both the Municipal Development and Lending Fund support such kind of participation as it will lead at the end to have sustainable and economical development in Palestine "In modern thinking, municipal work concentrates on the developmental role of municipalities whereas in the past it was limited to services only. Nowadays, municipalities can establish investment projects that bring material benefit and improve revenues. This, in turn, reflects positively on improving the quality of services provided to the population and enables municipalities to go into partnership with the private

\(^1\) The author here is not in a position to discuss the activities of MDLF, but in general this establishment coordinates between the donors and the Palestinian municipalities For more details about the fund’s requirements and the scope of work, see MDLF manuals, report and website (www.mdlf.org.ps).
sector. This developmental role is an important qualitative leap and will improve the quality of municipal work and open the way for private sector participation in developmental projects\(^1\). (MDLF, 2009, P14)

Picture (3.2): Ramallah City Park Developed by Local Sector Investment (Source: Researcher, 2009)\(^2\)

3.4.1.3 Joint Service Councils/Village Councils:

The Palestinian areas have a special nature in that it mainly consists of 17 large districts/cities, tens of towns, hundreds of small villages and rural areas. The widely dispersed villages, small villages and local councils whose people are mainly farmers and are located in different geographical locations all suffer from a lack in infrastructure services which causes a lot of challenges. Due to this, the Ministry of Local Government and Minster Cabinet came up and approved of a new idea in order to encourage and promote these localities to join the joint service councils (JSCs). This new body is responsible for

\(^1\) The Municipal Development and Lending Fund prepared the Study of Public Private Partnership in the Municipalities Funded by the World Bank, October 2009.

\(^2\) Dora Municipality in Hebron also had the same experience. The municipality constructed a major park, and gave it to private sector for investment such as swimming pools, restaurants, coffees, shops..etc.
coordinating all the efforts of the villages’ councils as well as providing better services to local people. In other words, it comprises one large municipality for all villages joining the JSCs.

Before the Palestinian authority, there was some kind of coordination among close villages (i.e. villages that have same borders and are located on the same road), but the Ministry of Local Government organized these relations. It the legalized them by introducing an article related the formation of joint service councils in the 1997 local government law. "At present, there are a total 52 joint service councils in Palestine that provide services to about 378 small villages and local communities. Around 20 joint service councils are semi-municipalities, 27 of them are for solid waste disposal and collection and the remaining 5 are dedicated for water and sewerage networks" (Makky, 2007).

In general, the main function of the joint service councils is coordinating the activities and representing the Ministry of Local Government. They also provide general and infrastructure services to groups of villages such as water, roads construction, solid waste collection, construction of public buildings like schools and health centers. Although some of these joint service councils provide only one service, all the aids and urban planning activities in small villages are controlled by the joint service councils.¹

¹ The author conducted several interviews with Joint Service Councils Employees (2007-2009) like Dora villages’ Joint Service Council, North Hebron’s Joint Service Council and Solid waste management for Hebron and Bethlehem Joint service council. The Interview’s output are addressed and discussed in details in chapters 6,7 &8.
Depending on the above facts and on the experience of local government, the researcher believes that there is a need for a comprehensive assessment for the joint service councils’ work all over the West Bank. This kind of assessment is conducted in order to see points of weakness and strength, so that the laws and work methodologies are modified accordingly.

To conclude, according to the 1966 Urban Law and the 1997 Local Government Law, villages’ councils are introduced in a new framework called joint service councils,. The JSCs have similar functions, duties and activities to those of the municipalities, but their activities are still restricted people’s essential needs such as infrastructure services and public projects’ constructions. As for sustainable development process, it is still not included in the JSCs agenda.

3.4.1.4 Micro-Region Planning Committees:

In 1996, Ministry of Local Government approved of a new administrative structure and strategy for providing small villages (villages with less than 500 people) and rural areas such as South Hebron with services. The structure was

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1 Chapters 6, 7 and 8 discuss more of the villages’ councils activities and contribution in sustainable development.
called Micro-region Planning Committees\(^1\), The micro-region planning committees manages people’”s needs, and organize the infrastructure services such as water and electricity. This in turn had a positive impact on those people and improved the quality of their life via new public projects, roads rehabilitation, and infrastructure and health services.

![Micro-Region Planning Committee -Khorsa Village. Before 2002, it was MPCs, but now it has Village Council (Source: Researcher-2008).](image)

At present, most of the projects of micro-region planning committees are funded by UNDP, USAID, GTZ and the Islamic Development Bank through funded projects called the local rural development programs. These programs work in coordination with Ministry of Local Government as well as Ministry of planning\(^2\). Ministry of Local Government provides financial and technical

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\(^1\) Major discussions were held to check whether the local government should cover all Palestinian territories or should extend only to the areas that have development plans only. However, the policy of Ministry of Local Government policy is to strengthen the local government and to decentralize the aspects of the development of urban planning to be implemented by the local authorities’ people.

\(^2\) The UNDP supporting training programs support the workshops for the local councils and the community members in planning and public awareness and for implementing and managing the development projects. Moreover, they are governed by proper bylaws, using the
support to the Micro-Region Planning Committees along with the above mentioned funders.

3.5 The Local Government Unit Decision-Making Process and the Relation with Ministry of Local Government

The decision in the local government’s organizations is taken within the scope of work and structure of the local units. Therefore, in local village’s council, the member takes all the decisions, whereas; big municipalities have administrative and technical procedures in decision making. In most of the Palestinian public organizations, the decision-making is largely a matter of tradition and habit rather than following official or clear documented procedures. The decisions in local government’s organizations and mainly in medium and big municipalities are taken at many levels as follows.

a. Decisions such as appointment of new employees, budget approval, new projects’ approval, agreements with other organizations are taken by the municipality council members.

b. Decisions concerning the major daily works and approval such as the normal building licenses, providing services, projects release payments to contractors, representing municipality in official meetings are taken by municipality mayor.

Most Municipalities hold regular meetings between municipality mayor or director and senior staff and department heads. However, decisions related to technical issues (e.g. connecting or disconnecting services, collecting fees...etc.)are taken by departments’ heads. Regarding the relation between Ministry of Local Government and the municipalities /local councils major decisions (e.g. yearly budget, main projects, agreements with international organizations, the municipality should get permission from the Ministry of Local Government before they proceed. The 1997 Palestinian local government’s law legalizes the relations between the Ministry of Local management and operation manuals prepared by this program. The manual gives guidelines for the financial and services” policies …etc.
Government with its organizations (municipalities and villages’ councils) and also with other ministries and governmental organizations. According to the law, all of the local government’s units should have a transparent financial system. The municipality annual proposed budget must be submitted to the Ministry of Local Government for review and approval. If the municipality submits a financial report of its works to the Ministry of Local Government in monthly basis, there will be no sufficient or clear methodology to assess, inspect and monitor the report. This in turn makes the report subject to questions because the municipality has carried out its work with no proper feedback or supervision from the Ministry of Local Government. Nowadays, donors in Palestine have laid strategies for dealing with the municipalities more than the local government itself. Every donor country or organization has its own policies and requirements that the municipality should follow in order to have financial aids. "Municipalities have lacked incentives to improve fiscal management and apparently they have not been pressurized to perform in this respect. There is no practice of comprehensive budgeting in many local governments’ units, particularly in those that are small and newly formed. According to practice, budgets are submitted to the ministry in a common format without changing budget presentation since 1968. The financial and accounting system should use the new technology and software programs to control the whole accounting and cash flow activities. Moreover using new system to facilitate the monthly report from municipality to ministry of local government in order to avoid and delay or arithmetical mistakes" (UNDP-MoLG, 2002.P96).

1 The Ministry of Local Government prepared financial and budget manuals, used by municipalities and the reader can find them online in the MoLG website.
2 The budget should be submitted along with the supporting documents (e.g. expenditure, reporting, purchasing, tendering, employment practices, and control process and auditing systems). In most cases, the budgets are approved of by the ministry with some comments. Only 41%, of all local government units are obtained in the budget approval for 2007 and this rate was not more than 49 percent in 2008. In addition to that, the approval process appears to be arbitrary and inconsistent" (MoP, 2007-2008).
3.6 Conclusion and Recommendations

"Within each of the 16 governorates and districts there is an office of the Ministry of Local Government, headed by a director-general. The president of the Palestinian National Authority appoints the director-general according to the local government Minister's recommendations. The director-general represents the Ministry of Local Government, as demonstrated in the following sections from the functional and political dimensions. The director-general has a complete authority to monitor the municipalities within his district and to handle local affairs. This authority extends to aspects of local administration which allows the director general to decide on how to address issues on behalf of the municipalities which were not granted any authorities. It also covers a wide range of issues including that of licensing. This appointment represents administrative decentralization, rather than devolution" (MoLG-Unpublished Report, 2006.P12).

In the West Bank, there are hundreds of cities, towns and villages and all urban areas have no clear or agreed on boundaries or even boundaries for the urban expansion because the boundaries between urban areas are missing in most of the Palestinian districts. Urban planning engineers in Palestine suggested and recommended that the Ministry of Local Government adopts clear guidelines and manuals to be used and followed via local organizations’ planners. However, many steps could be adopted to encourage municipalities and JSCs sustainable development agenda. The steps are:

a. The Ministry of Local Government along With Ministry of Planning are recommended to prepare a modern, workable and sustainable urban planning law suitable to be used in Palestine.

b. improving the legal environment and promoting the local government organizations’ employees’ skills and sustainable development awareness.

c. enhancing the technical assistance especially for the villages’ local councils, which do not have the capability and information to manage their areas probably
d. After defining the boundaries, the village councils and urban planners are expected to carry out their functions and projects including construction of roads, public building and housing with a recognized name outside of the comparatively small area covered by the larger municipalities, without determining the boundary lines. Hence, the municipalities benefit from the large village areas and the villages benefit from the city services.

e. There is an urgent need to define the boundaries for each urban area and needs according to the 1997 Palestinian Local Government’s law which will clarify the powers and responsibilities of each council.

f. Further studies and Plans are required for transferring small municipalities and village councils into larger municipalities.

g. The researcher expects that the Ministry of Local Government adopts the recommendations and sustainable development policies discussed in this research as will be shown in chapters (6,7,8 & 9)
Chapter Four
Research Methodology

4.1 Introduction
4.2 Preliminary Visits and Literature Review
4.3 Defined Case Study Area Problems, Objectives, Questions
4.4 Select the Preferred Research Strategy
4.5 Case Study Area Visits and Data Collection Methods
4.6 Challenges and Limitations of the Fieldwork
4.7 Analysis, Recommendations and Writing the Thesis Report
4.1 Introduction

According to Rajasekar & Philominathan (2006), the definition of Research methodology "is a systematic way to solve a problem. It is a science of studying how research is to be carried out. Essentially, the procedures by which researchers go about their work of describing, explaining and predicting phenomena are called research methodology. It is also defined as the study of methods by which knowledge is gained. Its aim is to give the work plan of research". (Rajasekar & Philominathan, 2006. P2)

This Research Methodology chapter shows the way the researcher has followed to collect the data and analyze the conditions of urban, and the outcomes and recommendations. It presents a systematic account and a process to select the -case study-, and generates the answers of the research goals and questions proposed earlier and could be changed from one place to another. Because the researcher is familiar with and has enough experience in the research subjects, the methodology will be more effective and sufficient. This chapter also explains in details how the research was carried out, the methods used in the main study output and details of the analyses and academic recommendations (e.g. data collection tools, fieldwork activities and research work challenges). Generally speaking, the main steps of research process are "1. Formulating the Research Problem, 2. Extensive Literature Review, 3. Developing the objectives, 4. Preparing the Research Design including Sample Design, 5. Collecting the Data, 6. Analysis of Data, 7. Generalization and Interpretation, 8. Preparation of the Report or Presentation of Results - Formal"

1"Although case study methods remain a controversial approach to data collection, they are widely recognized in many social science studies especially when in-depth explanations of a social behavior are sought after". (Zainal, 2007. P7) also - from the same reference - Yin (1984:23) defines the case study research method “as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.”
write ups of conclusions reached”. (www.ihmctan.edu/PDF/notes/Research_Methodology.pdf)

The main fieldwork and analysis work were conducted from April 2006 to July 2008, while the office work was from September 2009 to April 2011 as will be shown in the timetable below. The selection and the discussion of the research methodology has started depending on the choice of the research preferred strategy and the units of data, interviews and questionnaire’s analysis. Hence, the researcher has used different data collection methods during the fieldwork. Due to this, more assessment and discussion of the issues pertaining to internal and external validity and generalizations are presented. However, this research was conducted in the context for the perspectives of growth management and sustainable development in the West Bank and Hebron as a case study and the detailed research methodology will be presented in following sub-chapters.

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4.2 Preliminary Visits and Literature Review

The researcher started his research\(^1\) by visiting districts/cities in the West bank (e.g. Jenin, Nablus, Ramallah, Bethlehem and Hebron to observe the physical and urban planning conditions in these districts. The researcher also visited more than ten small cities / big towns (e.g. Salfeet, As-sawahreh, Tubas, Jabaa, Sulwad, Birzeit, Abu Dies, Ad-douha, Dora, Yatta, Aldahriya and more than 40 villages in of the north and south West Bank. The Researcher coordinated with the local authorities such as municipalities and local councils and informed them with the purpose of his visits and to get a feedback of the information and data from the local councils' employees and the key figures prior to his visit to any district or village. According to initial study area visits, the researcher has carried out and concluded following:

a. The visits are very important to build a comprehensive overview of the actual physical conditions. The researcher checks the opinion of the people and local authorities’ institutions, their suggestions and demands regarding the sustainable development.

b. The new questions, ideas, challenges and plans become on board and parallel to that the researcher has reviewed the main information regarding each district, city, town and village that has been visited.

c. Many parts of this study are related to Socio-Economic studies\(^2\) and their links with sustainable development. In regard to the visits, the

\(^1\) "Research is a logical and systematic search for new and useful information on a particular topic. It is an investigation of ending solutions to Scientific and social problems through objective and systematic analysis. It is a search for knowledge, that is, a discovery of hidden truths. Here knowledge means information about matters. The information might be collected from deferent sources like experience, human beings, books, journals, nature, etc. A research can lead to new contributions to the existing knowledge. Only through research it is possible to make progress in a field. Research is done with the help of study, experiment, observation, analysis, comparison and reasoning. Research is in fact ubiquitous"(Rajasekar & Philominathan, 2006, P1)

\(^2\) " Socio-Economic Research is defined as any research carried out by people qualified in business studies …, education, human and economic geographic,… applied social studies …, that address issues of relevance to economic policy, employment policy, social policy,
researcher has explained the purpose of his visits in specific, and the
goals of his study in general. He further asked the local people and the
key figures about the main urban planning problems, infrastructure
services, land use conflicts and their suggestions and recommendations
to improve the urban planning condition by achieving the sustainable
development.

d. The researcher also checked if master plans exist. He found out that
many Palestinian areas have no approved master plans.
e. Photographs have been taken for buildings, roads, public services,
sensitive areas…etc, as well as gathering data about the physical
condition of cultural heritage and public services.

Literature review is a major part of any academic research because "It
prevents us from duplicating work that has been done before and increases the
knowledge on the problem to be studied. It also gives more confidence in why
the research project is needed". (Degu & Yigzaw, 2006.P18)

After the study area and the field visits have been carried out, the actual
conditions of urban planning become clearer to the researcher, and so he started
reviewing and studying the previous studies (Literature Review) as follows:

a. reviewing plans and researches related to all urban events and
   sustainable development in Palestine, mainly demographic statistics,
   economic indicator, environment profile, urban expansion,
   infrastructure, transportation, land use…etc1.

b. Reviewing urban laws and regulations.

c. reviewing and collecting as much as possible the needed data from
   available literature, researches, studies and documents…etc in Palestine,
   which could help to end up with sufficient academic research report

environment policy, health policy,…,transparency, energy and other information provision or
infrastructure society policy". (Huws, 2002.P7)

1 The Literature Review sub-chapters are in chapters (5, 6, 7&8) as will be shown later. This
part aims at giving ideas and information about the previous efforts and studies conducted on
the same subject to compare the different outcomes and recommendations of the previous
studies.
4.3 Defining Case Study Area’s Problems, Objectives and Questions

According to Yin (1994) “A case study is an empirical inquiry that: Investigates a contemporary phenomena within its real life context, especially when, also the boundaries between phenomenon and context are not clearly evident”. (Yin, 1994.P-13)

The researcher had further discussions with urban planning colleagues in Palestine about the literature review, previous studies and same PhD reports on the same subject indifferent countries. The first and the most important condition for differentiating the various research strategies is to identify the research problem, objectives and questions. The research problem originated from the researcher’s background and experience as an urban planner. He is one of the residents of the study area. He also had discussions with other urban planners and organizations working in the same field like (e.g. municipalities, universities, UNDP, World Bank, USAID, EU, UN-HABITAT and GTZ) in Palestine for a long time which helps the researcher generate this research report.

Identifying the research problems, objectives and questions needs patience and time as mentioned previously. It is a flexible process and issue rather than a solid decision. It is one of the sources of literature review that helps the researcher develop sharper and more insightful research problems and questions about the topic of any research. These problems, objectives and questions may be exploratory, occurrence or frequency, problems thereafter, objectives and questions. The researcher started to examine and modify the same where it is necessary, hence; the final problems, objectives and questions

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1 In addition to the references mentioned in this chapter about, research methodology, the author refers to the following and strongly recommends referring to them.

This Reference is the main reference but not the only one.
are put parallel to the final project’s analyses and recommendations. Moreover, the selection of research methods and strategy should also focus on the study area’s historical identification and contemporary issues.

The case study could be an individual, a group, an institution, a ministry, community, town, an industry, or a link between two subjects. A case study depends on the findings that investigate answers to the specific questions and seeks a range of different kinds of evidence and has to be abstracted and collated to get the best possible answers to the questions of the research.

When the researcher started his research, he thought of covering all the districts in the West Ban, but after the initial surveying, he was advised to restrict his work to Hebron which was selected as the case study. The good thing about case study strategy is that it is able to deal with multi sources of evidence (e.g. local data available documents, studies on the same subject, artifacts, interviews and observations. Furthermore, the case study strategy uses many techniques as the history background, field observation, detailed analysis and systematic interviewing. Finally, the researcher has selected Hebron District to be a case study; and thus it is an example for practitioners working on similar situations as they can relate to those made in the case or examples in the recent West Bank areas.
4.4 Selecting the Preferred Research Strategy

In surfing the engineering and social sciences’ researches, many strategies and research methodology are commonly used like histories, experiments, surveys and archival analysis depending on the type of research’s problems, objectives and questions which are mainly classified as Qualitative or Quantitative methods. However, the nature of the research subject influences the researcher to select a suitable research strategy. The selected strategy simplifies the work of the researcher to reach valid findings and meaningful conclusions and recommendations which provide a basis for policy action. Based on the nature of the research’s problems, questions and the propositions that exhibit causal relationship, the case study’s approach is the most appropriate strategy among the other traditional methods namely survey, experiment and analysis of archival records.

Research questions could be limited and help select the best strategy of research. However, in what way we benefit from the power of social science methods. For instance, we can capture the process of decision-making and from the question itself we can then explain the phenomenon under the study. The concern with human decisions and actions entails interpretations of values, interests, judgments and choices that are varied and context dependent. The research applied a scientific, academic and planning approach with strong elements of collaborative urban planning as shown in the figure below.

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1 "Much is sometimes made of the distinctions between qualitative and quantitative research design and the development of the enquiry process. Quantitative research honors the logic of experimental or correlation method in adhering to agreed rules and predetermined sequences, irrespective of emerging data and analysis. The role of author is detached from the field of enquiry. By contrast, qualitative design displays an interactive, dynamic, and emergent character in which the aims, strategies, data, analysis, and validity are woven together in the process of the study (Hammersley & Atkinson, 1995; Maxwell, 1996; Becker, 1996)” (Lloyd-Jones, 2003.P2)

Moreover and as per Zainal (2007) "As an alternative to quantitative or qualitative research, case studies can be a practical solution when a big sample population is difficult to obtain. Although case studies have various advantages, in that they present data of real-life situations and they provide better insights into the detailed behaviors of the subjects of interest, they are also criticized for their inability to generalize their results" (Zainal, 2007.P-5).
The above figure identifies and prioritizes the most important issues and dire needs through a scoping and screening process at initial stages which mainly are:

- Socio-Economic Conditions.
- Urban Environment Conditions.
- What actions and policies are taken from the different Institutions?
- Finally, the Spatial/Physical links and effects generalized from all the above.

The reasons behind the visits to most of the villages, towns, and cities in the area of the study (Hebron District) were to obtain data from the sites, to evaluate the existing situation of future urban expansion in sensitive areas, buildup areas, fertile agricultural areas, and the physical situation of the cultural heritage and Information …etc. This study is conclusive, qualitative
and inductive in nature. In order to pursue the objectives, three triangulation methods were applied, namely the descriptive, causal and historical research methods. The descriptive research involves gathering information about existing conditions, whereas the historical research involves a systematic and critical inquiry of past events and the causal one is concerned with identifying which variable might be causing a particular behavior. Finally, it is important to indicate the timetable of the research as follows.

**Table (4:1): Research Time Frame**

<table>
<thead>
<tr>
<th>No</th>
<th>Research Activities</th>
<th>Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Preliminary Surveying¹</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Visits and Data Collection²</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>Data Analysis &amp; Discussion³</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>Conclusions &amp; Recommendation</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>Writing Thesis Report⁴</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>Review &amp; Feedback⁵</td>
<td>24</td>
</tr>
</tbody>
</table>

¹ The initial visit was to most of the West Bank, and reviewing the initial available data, literature review and documents.

² The author has prepared different a number of questionnaires, conducted hundreds of interviews with the areas” people, engineers, key figures, decision makers ,NGOs and Governmental institutions”employees. The main purpose for this stage was to collect as much as possible data and information about the issues related to sustainable development and future growth and expansion”s requirements.

³ It includes both the secondary and primary data analysis as well as an examination of the key issue in the research.

⁴ Soon after completion of previous phases, the author has written a draft report to help examine and develop sustainable development plans. This draft included reviews and comments by the supervisor and a further input from local Palestinian planners.

⁵ This review and feedback include the supervisor”s comments, advice and modifications, as well as comments from local people, planners and decision makers in Palestine during the research activities.
4.5 Case Study Area Visits and Data Collection Methods

This is the main Phase which includes the detailed and specific data collection from institutional and governmental authorities and from the people and key figures of Hebron. The researcher has conducted hundreds of field surveys and meetings with governmental authorities and the local municipalities’ councils and engineers and mainly the following institutions:

a. Ministry of Local Government
b. Ministry of Planning
c. Ministry of Education.
d. Ministry of Internal Affairs
e. Ministry of Trades and Industry
f. Ministry of Transportation
g. Ministry Of Housing and Public Works.
h. Ministry Of Agriculture.
i. Ministry Of Culture.
j. UNDP-Hebron Office.
k. UNERWA-Hebron Office.
l. Natural Resources’ Authority
m. Environment Authority
n. Water Authority
o. Governorate Office-Hebron.
p. Hebron Municipality
q. Dora Municipality
r. Yatta Municipality
s. Daheriya Municipality
t. Hulhool Municipality
u. Ethna Municipality
v. Biet Ommar Municipality

There are three Survey Methods of Data Collection, 1.Census and statistics” Survey  2. Primary and Secondary Sources; 3. Observation ”,The author here uses  the second and third methods.
w. Sear Municipality  
x. Samoua Municipality  
y. Bini Neam Municipality  
z. Tufouh Municipality  
  aa. Al Fawwar Camp Administration Committee.  
  bb. Al Arroub Camp Municipality Administration Committee.  
  cc. Dora Villages’ Joint Service Council  
  dd. North Western Hebron Villages’ Joint Service Council

The researcher has conducted meetings with all of the above mentioned institutions and mainly with planning/engineering department and the mayors of small municipalities. In the meetings and interviews (See interview list in the references), the researcher has dealt with the main following issues:

a. The Organizations’ intentions and expectations for the future development.

b. The way these organizations could share and support the study objectives and recommendations.

c. the challenges and urban planning difficulties that prevent sustainable development in Palestine.

d. discussing each organization’s activities, roles and mission in the field of economics, urban and sustainable development.

e. preparing questionnaires for data collection from the above said organizations and others.

The researcher has conducted 148 interviews with different official people in ministries, municipalities, local government units, public institutions and experts. The interviews are the first step in the fieldwork. According to each interview, the researcher/research used checklists and guiding questions that were specific with responses, as well as brainstorming discussions in order to investigate the relevant analysis and point of views. Besides, a lot of data and information were obtained from available documents, previous reports and maps which later become very useful for final the final results of the research. Nevertheless, not all purposes of the interviews were met due to a number of
factors such as time limit, lack of financial aid and the unique Palestinian socio-political condition which made conducting sufficient and more successful interviews more problematic and risky, especially the interviews related to political and administrative aspects. Besides, about 5 interviews and a number of workshops were cancelled three times by Hebron municipality and PECDAR with no justifications. The involvement of local people, key figures and experts was also essential (see figure 4:2).

Figure (4:2): The Sequence of Local People’s Involvement in Research (Source: the researcher).

For data collection, the researcher prepared the following questionnaires:

a. A questionnaire in Arabic for the people of Hebron includes all the questions related to issues of urban planning and sustainable development (e.g. environment, economic, transportation, services,
land use...etc.) About 1000 questionnaires were distributed and 890 of them were returned.

b. questionnaires for institutions like government, Public and private organizations concerning (economy, environment, transportations, and land use). Generally, in order to conduct a comprehensive study and fieldwork observation, the researcher depended on collecting evidence from officials in the districts and villages. He also relied on direct observations of participatory discussions and physical artifacts and main activities at this stage are:

a. collecting data related to the available master plans in each municipality, town and village in Hebron and their historical development.
b. holding a discussion with each municipality or local authority about the main concerns of sustainable development such as:

1. the kind of problems encountered within the master plan and its application.
2. way of developing a certain pattern for their master plan.
3. motivations behind a certain direction of expansion and development
4. the current potentials and weaknesses in their master plan.
5. the future visions of each municipality and the kind of cooperation between surrounding municipalities.
6. identifying problems and other issues and comparing the obtained land use pattern with the plans.

c. for an academic and scientific method of collecting the data related to urban planning and sustainable development issues, questionnaires were designed using relevant questions (see annexes) which were distributed to the targeted people. Answers were obtained from a high percentage of them. The questionnaires were designed to meet the study goals and examine the problems related to urban growth management and

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1 More about these question is shown in the following chapters in which the questionnaires are used.
sustainable development in the study area. The questionnaires and analysis will be discussed later.

d. At this stage, the researcher visited the ministries, municipalities and local village councils, and made interviews with the officials. The outcome of the interviews was taken into consideration in the analysis section of the Thesis research report.

e. Visiting most places at the study area in which photos of sensitive areas, buildup areas, fertile agricultural areas, the physical situation of the cultural heritage… etc. were taken and maps of these areas were gathered to be later used by the researcher.

f. collecting land use data and maps showing residential, industrial, agriculture areas, water bodies, rivers, village settlements, commercial areas, religious places, slums…etc.

g. holding a workshop that focuses on group discussion and holding meetings and small workshops in many municipalities and local village councils in Hebron to hear from engineers and other employees.

h. collecting environmental resources data and maps showing plantations, forests, monuments, water bodies, sand dunes, play grounds, open lands and agricultural lands.

i. Solid waste and waste water collection/disposal data and map showing solid waste collection points, areas with no specific problems, areas with poor collection efficiency, areas with occasional collection/disposal problems, areas with regular problems and the dump sites.
4.6 Challenges and Limitations of the Fieldwork

Palestine is different from other countries in the world due to its bad political and economical conditions resulting from occupation. This created serious challenges in terms of study period as will be shown in the research chapters and the researcher attempts to avoid the effect of political and unsustainable conditions as possible. However, there are many challenges and research limitations especially in the people's behavior which is significantly influenced by its location. For example, it was difficult for the researcher to have free access to Israeli Settlements, old city of Hebron and places in Area C because of the many checkpoints and closures there.

Although the checklist questions were intended to be comprehensive in use and they were found to be long and need more time to be fully investigated. In addition, different questions had similar answers forced the researcher to minimize and revise his questions regularly transferring the experience learnt from each interview to the next. In addition to the previously mentioned practical difficulties and challenges, the researcher encountered the following:

a. In interviewing some Municipalities, LGUs, NGOs and key figures, the researcher found difficulty to distinguish between general talking about Municipalities, LGUs, NGOs and key figures and the specific information provided by the interviewee regarding his/her own organization. It was observed that some of interviewees tended to talk about general problems and shortages rather than the problems faced in their own organizations.

b. It was clear to the researcher that some of the analyses and critical views provided by some public and private institutions were based on their political stands which raises the question of the extent to which their political views affected their analyses.

The researcher also found it difficult to collect the exact data regarding the financial issues from the ministries, municipalities and private companies because it is considered a highly confidential matter that cannot be revealed outside the organization. This might show a lack of transparency in these organizations.
Some interviewees got the impression that there could be chances for raising additional fund, and thus started to talk about their lack of resources. In order to lower their expectations in this regard, the researcher emphasized that the data will be used for academic purposes and no fund rising could be achieved in near future.
4.7 Analysis, Recommendations and Writing the Thesis Report

In general, there are three types of researches; quantitative, qualitative and mixed research methods\(^1\). Based on the above presentation and the visits to a the large number of cities, towns and villages in the Hebron, the important question is what criteria and analysis methods are going to be used for examining the data collected from of the study area? How many urban sectors should be studied to meet the requirements of the research objectives, hypotheses and questions? For achieving the objectives and having a the systematic presentation of data sorting and analysis, several tools were used in processing the collected and sorted data (e.g. Stakeholders and interest groups analysis, Power distribution matrix, SWOT analysis and other research methods which were used because of their simplicity). The participation process is analyzed so as to have a clear idea about facilitating and constraining factors affecting urban growth management and future sustainable development. The problems and conflicts that resulted from irregular and random urban expansion and growth management will be discussed from a scientific and academic perspective to ensure future sustainable development for Palestinian lands.

The researcher made use of documentation shared by interviews’ respondents, as well as reports, books, and data available in municipal libraries, central and local government institutions, newspapers, magazines, universities, libraries and the internet. This phase includes the analysis of the gathered information and data from the relevant different studies (demography, economic, urban laws and regulations, infrastructure, agricultural lands, Water resources, ecologically significant areas, Landscape, Cultural heritage, Pollution and water land, and noise…etc), the questionnaires, as well as the interviews. The

\(^1\) "Quantitative and qualitative research methods investigate and explore the different claims to knowledge and both methods are designed to address a specific type of research question. the quantitative method provides an objective measure of reality while the qualitative method allows the author to explore and better understand the complexity of a phenomenon"
responses to the questionnaire were saved in a proper computer file to facilitate their analysis using the (SPSS, Photoshop, MIS...etc) package.

Figure (4:3): Research Structure Methodology General Overview. (Source: built by the researcher)

A special section is dedicated to present the outcome of the analysis. Moreover, the technical analysis issues were carried out, and the analysis of data includes both secondary and primary data. The most important data in this research are the following:

b. Evaluation of local governments in Palestine and Hebron District, as well as the Legal, organizational, administrative, institutional, and socio-cultural structures.

c. Evaluation of the characteristics of the Palestinian local development planning system, and discussion of the Planning laws and regulations in Palestine.

d. Type character and number of civil society and Private Sector organizations (classification and profiling) in Hebron District.

e. History and nature of the existing master plans and spaces for sustainable development on it.

f. Existing tools, mechanisms, methods and techniques used for urban growth management and Sustainable Development in Hebron District. The researcher made use of documentations shared by interview respondents, as well as reports, books, and data available in municipal libraries, central and local government institutions, in addition to newspapers, magazines, universities, libraries and the internet.

g. Range of actors and Engineers who play a significant role in preparing urban planning, local policies and sustainable development plans.

h. Current status of public sectors involvement in local policies and plan formulation and implementation.

i. Nature of Planning Engineer-local government”s relationships and the major features, roles, functions and activities.

j. Perception of research centers and universities in Hebron District and government organizations about working with each other in local development planning, policy making and program implementation.

k. Willingness and capacity of the ministries, municipalities and local councils to participate in local development planning and policies process together with their efforts to make sustainable development in Hebron District.
l. Institutional, procedural and organizational contexts of local development planning systems and process especially in future urban growth.

m. Political will and commitment of the governments to find environments and favorable policies for effective urban growth management and sustainable development involvement in Hebron District.

n. Gender relations in sustainable development in Hebron District.

o. Access of Urban Planning System to government information and operation systems.

p. Problems, difficulties and challenges facing good planning and sustainable development in Hebron District.

q. Suggestions and recommendations for effective urban planning system.

In conclusion, this implies the use of the findings of analysis in order to generalize strategies and recommendations related to planning issues, and how we make sustainable development despite urban expansion in Hebron District. At this phase, theoretical background, case studies and scientific planning theories were used in addition to the different academic and planning theories and scientific approaches that were used to address the research goals and indicate the actual problems. It is worth mentioning that this research will not cover all items related to Urban Growth Management and sustainable development policies in Palestine in general and Hebron Distinct in particular but it will be a good basis for future studies in the same field.

Finally, writing the thesis report started soon after the completion of previous phases in which the researcher started with a draft report and plans developed depending on sustainable urban development and focusing on scientific and planning theories. After a thorough discussion with supervisor, the final report is written and many parts of this report are mentioned previously, but some of them are not in the regular way. The thesis report is written to match the academic and Kassel University
standard. At this phase, many software and drawing programs were used such as AutoCAD and all windows office etc.
Chapter Five

Profile of the Hebron District (Study Area)

5.1 Background
5.2 Review of the Literature
5.3 Geographical and Political Characteristics
5.4 Social Setting
5.5 Economic Setting
5.1 Background.

"According to 2007 statistics, the overall population of Hebron District’s areas is around 552,164 people. Hebron is in southern West Bank and is about 36 km to the south of Jerusalem, ”(PCBS, 2008). It is bordered by Bethlehem in the north and the 1948 cease-fire line in the west and south and Jordan in the east. Similar to the West Bank districts, Hebron has been occupied by Israel since 1967.

Hebron has different activities and major land use distinguished classes like Palestinian built-up areas (Urbanized Areas), Israeli built-up areas (settlements), Israel's closed military areas and bases, natural and open reserves areas, green and small forests, agricultural areas and non-used areas.

In Hebron, there are many historical and holy places that have been under occupation for more than 4500 years. It is one of the oldest Palestinian cities, and it is near Jerusalem the third religious place and a center of the Muslim world. "The importance of Hebron lies in the fact that it has Al Haram Al Ibrahimi

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1 The Palestinian Central Bureau of Statistic is the official body for conducting the surveys and statistics related to all sectors in Palestine. However, every 10 years, the PCBS conduct a comprehensive survey including population numbers and classifications of the West Bank and Gaza. For more information, visit (website ,www.pcbs.gov.ps)
although the successive political changes can be traced to the Prophet Abraham (Ibrahim al-Khalil, or Abraham the friend)- the forefather of all the prophets. Abraham settled city and influenced its development greatly and therefore it was named after him at the beginning of Islamic rule. It is still known as “Khalil Al-Rahman”, or the friend of God or Al-Khalil for short. Prior to this name, the city was given several other appellations whose significance is not clear in the different eras. Hebron was called “Kiryat Arba” (or the village of four), possibly referring to a federation of four tribes or four hills. Later, it was called “Habra” and “Hebron”, which is probably derived from the “Habar” meaning "to be joined, coupled, befriended", in reference to Abraham the friend. This name persisted until the dawn of Islam, and was mentioned in a letter sent by the Prophet Mohammad (peace be upon him) to Tamim Al Dari and his tribe"  (HRC website, www.hebronrc.org & Hamadneh (Arabic), 1989.P12).

Picture (5.1): Hebron Old City in 1896. (Source: www.palestineremender.com).

For more than 30 years, there have settlers in the middle of the Old city of Hebron. Due to this, several new occupation measures such as the closure of streets, markets and shops imposing new taxes, daily conflicts between the Israeli and
Palestinians continue to exist. Nowadays, there is a very large settlement named (Kiryat Arba settlement) which interacts and overlaps all of Palestinian’s activities inside and outside old city of Hebron.

In 1997, when the Palestinian National Authority and Israel signed an agreement called Hebron Protocol, the center of Hebron (Old and New) was divided into two areas known as (H1& H2). The agreement indicates that large part of old city will remain under Israel authority”’ administration whereas and the rest of the Old City and the new city center will be under the authority of the Palestinian rule.

According to researcher’s observations and meetings with local people in the old city, the Old City’s separation system between Israel's settlers and the Palestinians caused daily conflicts and claims because the roads are mainly used by settlers only. The Palestinians are not allowed to use these roads most of the time; nevertheless, Palestinians are allowed to pass through certain roads on foot only as the Palestinian cars are prevented from passing.
Map (5.2): Main Roads and Building Locations in Hebron’s Old City (Source: Hebron Municipality-Maps, 2008).

Picture (5.3): Israeli Checkpoints inside the Old City of Hebron (Source: Researcher, 2009).
According to Taba Agreement (1995) between the Palestinian Authority and Israel, which was signed in Washington, there are small and limited cities” and villages” centers, refugee camps and hamlets in the West Bank and Gaza. Hebron was not part of that till 1997 as shown above an agreed on to provide for self-rule Areas (A) including the setting up of a Palestinian Civil Administration.1

Picture (5.4): Hebron’s City Center – General View (Source: Researcher, 2008).

"According to Taba agreement, the West Bank is divided into three areas, namely “A” Area, “B” Area and “C” Area. The two sides, the Palestinians and Israelis, agreed that the West Bank will be temporarily ruled by the Palestinian Authority except for the issues that will be negotiated permanently. Due to this, Hebron District, except for Hebron”s city center is specified as follows "(Tufekgy, 2007):

a. Area (A) refers to Hebron District Cities” centers (e.g. main cities and towns in the District).

1 More details could be found in Israeli-Palestinian Interim Agreement in the West Bank and Gaza Strip Oslo II, Washington, Ministry of Foreign Affairs, Jerusalem, September 1999.
b. Area (B) refers to the populated areas in the villages, camps and the rural built-up areas.

c. Area (C) refers all the areas of the district which is located outside Areas (A) and (B) and this majority.

The flowing map (5.3) shows Hebron District and the political classifications as well as the "Area H-1" and "Area H-2" in the center of Hebron.

Map (5.3): Hebron District’s Areas (Source: ARIJ-GIS, 2004).

There are 153 Palestinian built-up areas in the Hebron mainly The City of Hebron, Dora, Halhul, Yatta, Seear, Ethna, BeitOmmar, Daheriya which have municipalities. There are also two refugee camps: Al-Fawwar and Al-'Aroub camps and the other built-up areas are either village councils or small villages. According to the data obtained from Ministry of Planning and Ministry and the Local Government in 2009, the Palestinian built-up areas comprise 4.1% of the total area; see Map (5.4) which shows the distribution and names of the various built up areas in the Hebron. The Buildings” design differs from one
place to another and so is and the age each building as the buildings ranges from very old buildings - hundreds of years old to new and luxury buildings.

**Picture (5.5): Dora City - South of Hebron District (Source: Researcher, 2008).**

There are 27 Israeli settlements in the Hebron District and all occupy approximately 714 hectares of land, around 1.2 % of the total area of Hebron as shown in Map (5.3), (Hanshat, 2008).

**Map (5.4): Hebron District’s Land Use (Source: ARIJ-GIS, 2004).**
"Regarding the closed Israeli military bases, the Israeli army reserved approximately 228 km² of Hebron District, mainly in eastern area near cities of Yatta and Baineam which are mainly used for military training purposes. The closed military areas cover the entire eastern border while the military bases are spread all through the district" (LRC, NGOs - Publications, 2004).

Map (5.5): Hebron City Areas (Source: Good shared Engineering, 2007).
In Hebron, there are two main nature reserves as shown in the map (5:6) below; however according to the data obtained from Environment Authority (2009), as well as the data from PCBS(2008), the total area of the two reserves is approximately 72 km². The two areas were declared by Jordanian government in the past and the Israeli authority in (1967).

Map (5.6): Hebron District’s Built-Up Areas (Source: MoLG-GIS Unit, 2008).

"There are 19 forested areas in Hebron with a total area of approximately 89 km². Most of these forests are lie on fertile and clay soil such as Brown Rendzinas and Pale Rendzinas. According to the Ministry of Agriculture, there are around 4.1 km² of irrigated agricultural land and about 281.5 km² is cultivated with rained crops, such as olive trees) and field crops (e.g. shaer (barley) and adas (lentils) as well as vegetables such as tomatoes "(MoA -Data, 2008-2009)¹.

¹ Several kinds of fruits and vegetables are planted in Hebron District, mainly grapes, tomatoes, green plants and olive trees from which oil is produced.
Fig (5.1): the approximate Percentage of Different Land uses in Hebron’s District¹.

¹ This percentage is obtained from different resources such as Ministry of Local Government, PCBS, NGOs like Arij...etc, hence these percentages are not fixed and might change by time according to the political and administrative conditions in Palestine.
5.2 Review of the Literature

Chapter five under the outline Profile of Hebron (Study Area), includes a description and analysis of Hebron’s District different socio-economical sectors (trades, industry, agriculture, services..etc). In the following part, the researcher addresses the studies conducted in Hebron or the West Bank in the same field. In 1996, the NGOs like ARIJ prepared report about the environmental and geographical conditions of Hebron. The research was conducted by a big consulting team, but now it is old to be used. The main thing is that the researcher made use of some of its maps which did not change such as topography, sunrise..etc as will be shown in the coming sub-chapters.

In terms of the demographic study in Hebron, until today there are no still comprehensive and professional studies, but the Palestinian Central Bureau of Statistics (PCBS) has conducted the first survey of the West Bank in 1997 including Hebron and the second survey was conducted in 2007. However, the PCBS plans to conduct the population statistics and survey every ten years. The researcher used the PCBS data and reports that were uploaded to the PCBS” website for people to use. The researcher sometimes had to pay in order to get data from the PCBS offices. It is mentioned and clarified whenever the researcher used the PCBS data.

In Hebron, which is an economical/commercial Centre to the West Bank, there is a huge number of trade and economical organizations. For example, there is the Faculty of Economics in Hebron University which grants degrees in different economical sectors and the governmental institutions (Ministry of Trade, municipalities and NGOs). When the researcher referred to the above organizations, he found out that their work is restricted to a certain kind of trades or operational works. The studies dealing with sustainable economical development are still very rare, however the researcher benefitted from some of studies such as the economical annual report, Governor’s office, and Abu-

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1 This literature review section recommendations present part of the previous studies and literature review in the field of Hebron socioeconomic profile. In the sections of this chapter, more addressing and about 30 links, concerning the literature review as will be shown later.
Libdeh’s study entitled the economical and investment conditions in the West Bank after the second Intifada, Ramallah-Palestine, 2008, and Hebron Trade and Commerce Association, Internal data and publications.
5.3 Geographical Features

"The geography of Hebron is characterized by a great variation in topography and altitude. The highest elevation of approximately 1011m above sea level is found in Halhul. The eastern part of the district is characterized by sharp slopes called the Eastern Slopes wherein which the elevation drops from 1000 to 200m above sea level, but most of the Palestinian built up areas are located at elevations between 600mm and 1000mm above mean sea level". (Kessler, 2006 & ARIJ, 1995).

Map (5.7): Hebron District Topographic Map (Source: ARIJ-GIS, 1995)

"When the rain falls, there are two main natural drainage systems which are distinguished in the Hebron. The first system runs to the west or south-west such as Wadi Al-Aroub, Wadi Haska, Wadi Qura, Wadi Nar, etc. The second system runs to the east or south-east, such as wadi Umm el'Adees, wadi Abu el Haiat, wadi Ghar, etc. The digital elevation model (DEM) containing Z-value with
pixel size of 100m was created for the Hebron District" (Arij, 1995.P8-9).

Map (5.8): Hebron District Digital Elevation Model (Source: ARIJ-GIS, 2000)

1 Hebron District is a mountainous area which cause small rivers according to rainfall during winter (from October to March). Some of the small rivers continue for more than four months especially in the areas which have springs.
"The climate of Hebron ranges from arid to semi-arid with an increase in aridity towards the Negev desert in the south and the Jordan valley in the east. Hebron District usually experiences western winds, which come from the Mediterranean Sea and are humid, during autumn and spring. The incoming sea breeze is usually felt on the Mediterranean shore from 7-8 o'clock in the morning and reaches Hebron District in mid-day. During summer, the prevailing winds come from north-west at an average speed of 10 km/hour during the day and decreases to 5 km/hour at night and early in the morning. In winter, the winds most frequently come from the south-west with a wind velocity reaching 35 km/hour. Storms have been observed in winter with wind speed up to 40 km/hour." (Kessler, 1994 updated in, 2008.P-24& EA-Data, 2003).

From late April to mid-June, Hebron is often beaten by storms known as the Khamaseen which come from the Arabian Desert and bring very hot dry winds full of sand and dust to the district. These storms occur most frequently and severely at the beginning and end of the hot and dry summer period. The monthly average temperatures range from 7.5-10 C in winter, 22 C in summer. The minimum temperature is -2 C in January and the maximum is 38 C in August. The ground temperature ranges from a minimum of -4 C in January to a maximum of 40 C in summer (ARIJ, 1995, and 2003.P 10)." Regarding the relative humidity - range of annual relative humidity, it is 55-65%. The relative humidity reaches 45% in mid-day and increases gradually to reach 70-85 %" (Kessler, 2008.P26& ARIJ, 2003).
"The mean annual rainfall for 1996-2006 at the Hebron meteorological station was 588 mm/year. See Figure (5.4). The quantity of mean annual rainfall in Hebron varies from one year to another as the rainfall reaches 1027 mm in the wet years and drops to 200 mm/year during the dry years (Hebron meteorological station). The amount of rainfall decreases from 638.4 mm in Al-Aroub in the north to reach 383 mm in Al-Dhahriya in the south of the district, and 200 mm in the eastern boundaries. During the wet year 1997/98, rainfall reached up to 876 mm and in 2005/2006 it reached 927 mm. Most of the rains fall during December and continues during March although the rain may fall from mid-October to the end of April" (Al Arruob Station, 2008 & ARIJ, 2007).
Figure (5.3): Annual Mean Rainfall in mm from 1997-2008 (Source: Al Arruob Station, 2008 & ARIJ, 2006).

According to the data obtained from the Hebron Meteorological Station in Al arroub (2008), evaporation varies from 2.5 mm/day in December to 9.3 mm/day in August with a monthly average of about 247 mm/month in summer and 92 mm/month in winter.
5.4 Social Setting

Demographic studies are considered one of the most important and basic elements in the urban development planning studies, which depend basically on the human being just like the developmental plans. Studying the population’s structure is the fundamental element in the demographic studies because it clarifies the differences in population structure in terms of quality and age. It also helps get a clear perspective of the economical and educational structure of the population so as to determine the available human abilities and make use of them in a rational and organizational way in social and economical development and provide their present and future demands. Moreover, when we speak about social studies, we also speak also the Human Ecosystem which is used to check the overlapping and interactions between people and biophysical systems and their relation to sustainable development, see figure (5:1) below. More about the social and cultural profile in Hebron District and its links to growth management and Hebron sustainable development plan will be discussed and findings will be generalized in the following sections.

Figure(5:4): Human Socio-Ecosystem (Source: http://www.unb.ca/enviro/pubs.html, 2010)
5.4.1 Cultural Heritage

According to UNESCO cultural heritage is defined as "The entire spirit of a people in terms of its values, actions, works, institutions, monuments and sites". When people hear about development, planning and sustainability, they think that the plans will create a new community with new identifications, which is not the case. The researcher here will present a small part of the Palestinian cultural heritage which is related to different nations and ethnicities during the last centuries and how it could be a part of Palestine/Hebron sustainable development plan. Hebron is a modern district with a very old history. It has been considered one of the oldest inhabited cities in the world for more than 4500 years and it serves as a gateway to many significant cultural heritage sites for many religions and different old states. Hebron is a part of huge Palestinian and regional cultural heritage system as there are family and trade relations between Hebron and other similar cities such as Jerusalem, Nablus and Bethlehem. Moreover, its cultural heritage reflects the religious and ethnic diversity embodied in a healthy and cooperative social and urban character.

The cultural heritage in Palestine is one of big challenges and debates between the Israeli and Palestinian authorities. "According to the Oslo Agreement, Palestinian scientists are allowed to work on excavation in Areas A and B, but Israel requires a special authorization to work in area C. The Palestinian police of Antiquity are in charge of protecting the materials and artifacts from military actions and illegal excavations. Palestine”s heritage and archaeological sites has been the object of destruction and illegal excavations. In addition to the wreckage during the Second Intifada, the Separation Wall and illegal settlements threaten the preservation of the country”s historical land". (www.uruknet.info, 2010)

Hebron”s cultural heritage is not only the social affairs and a life style, it is also the people”s history, identification, language, religion, hopes, tradition, museums …etc, which make nations different. Due to this, sustainable development plans should conducted according to the people”s cultural heritage, hence; what is accepted in Western people may not be accepted by eastern people. According to UNISCO1, Heritage -as a concept- gradually includes new categories such as the intangible, ethnographic or industrial heritage. According to Ju”beh (2009), ”Palestine”s rich heritage encompasses different areas and fields. This is reflected in the innumerable archaeological and historical sites, in renowned architectural monuments, in the typical rural and urban buildings and constructions as well as in the wide range of objects and traditional artifacts. Moreover, Palestine”s folk heritage including craft making, oral traditions, music and customs is part of this national wealth. However, many factors threaten the survival and continuity of the cultural heritage in Palestine". (Ju”beh, 2009.P10)

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1 On 21/10/2010, "The 185th session of UNESCO”s Executive Board adopted five decisions concerning UNESCO”s work in the occupied Palestinian and Arab Territories and The Palestinian sites of al-Haram al-Ibrahim/Tomb of the Patriarchs in al-Khalil/Hebron and the Bilal bin Rabah Mosque/ Rachel”s Tomb in Bethlehem: the Board voted 44 to one (12 abstentions) to reaffirm that the two sites are an integral part of the occupied Palestinian Territories and that any unilateral action by the Israeli authorities is to be considered a violation of international law, the UNESCO Conventions and the United Nations and Security Council resolutions" (UNESCO Press release, http://www.unesco.org/new/en/media-services/singleview/news/executive)
In general, the people of Hebron are Arab-Muslims, in addition to few Arab Christian families and Israeli settlers. Like other districts, Hebron consists of ancient, old and modern buildings which all together make the view of the urban fabric. A lot of people in Hebron choose to go on with their fathers’ and grandfathers’ life style (e.g. they live in the same houses and continue with the same cultural traditions in marriage ceremonies and national occlusions. Some of them use the modern system of technology and telecommunications in a way that does not make fundamental changes to their life.

Picture (5.8): The Old and New Housing Making Interactive Urban Fabric- North-East Hebron’s Old City (Source: Researcher, 2008).

The concept of “cultural heritage is still not clear and not used by Hebron”’s decision makers and municipalities due to many reasons including (weak public awareness, part of the old cultural heritage and sites have no significance to people, the absence of proper plans and development projects that could protect the cultural heritage).
Recently in 2010, Hebron’s Municipality as well as other municipalities inside and outside Hebron set up the so called - International Committee for the Preservation and the Promotion of the universal cultural heritage of the Old City of Hebron.\textsuperscript{1} The researcher believes that the cultural heritage plan, which will be part of Hebron sustainable development, states that the whole District scale and cultural heritage features/plans are recommended to be matched with the national and regional significance as discussed with planning engineers at Ministry of Local Governments and Hebron’s municipalities. Planning Engineers believe that the cultural heritage plan could mark a new approach for Hebron -an approach that departs significantly from a segregated view of antiquity and archaeological conservation efforts. Old antiquities and architectural buildings are significant in their own right and deserve the same degree of attention within the municipal planning regulations. From the field research and interviews, the heritage features in Hebron include the following:

- People’s life style, traditions, clothes, hopes….etc.
- Main occasions and public holiday days.
- Cultural features that have an organic relation with local people’s behaviors such as cities/towns’ centers, historic antiquity sites.
- Main Landscape elements that have a fixed and permanent location.
- Old tools and artifacts.
- Arts, books and languages.

Residents of Hebron daily affect the history daily of the old city’s buildings, roads, and arcades. Due to this, the main purpose of the Hebron District’s sustainable cultural heritage plan is to raise public awareness of building and reinforcing a good

\textsuperscript{1} The Objective of Committee "To promote the universality of the cultural and historical heritage of the Old City of Hebron. And achieve the full-term inscription of the Old City of Hebron on the World Heritage list". www.hebronheritage.com, 2010)
relationship between the people and the history of place. The following part is a brief summary of the most important cultural heritage and religious places in Hebron.

a. **Al-Ibrahimi Mosque**

Al-Ibrahimi Mosque is one of the holiest places for Muslims. "It is believed that Prophet Abraham, his wife Sarah, their sons Isaac and Jacob are buried in the cave (Maarah) under the Mosque, which also contains many holy graves of famous Muslim men and women" (Adel, 2002.P4 & Kamel, 2006.P15). This mosque and the building attached to it (e.g. schools, shops and restaurants) comprise a main part of Hebron’s life, history and stories for hundreds of years. Several historical and cultural books were written about the history of Hebron history, people’s activities, hopes, traditions and ethnic categories.


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1 See more in protection and old places chapter 8.
b. Al-Maskobiya

Another rich cultural heritage in Hebron is Al Maskobiya, or the Russian Orthodox Church, which “is in Hebron”’s city center, and the Roman Orthodox Monastery garden. The church was built in the early 20th century and is now considered the only Christian site in Hebron". (Source, Al ayyam newspaper SNo.2912, P-17)

![Al Maskobiya, or the Russian Orthodox Church in Hebron](Source, www.hebron-city.gov.ps)

Picture (5.10): Al Maskobiya, or the Russian Orthodox Church in Hebron (Source, www.hebron-city.gov.ps).

c. Hebron’s Museum

Hebron”s Museum "is located in Al Dariya neighborhood near Khan Al-Khalil which was originally a Turkish bath known as Hammam Ibrahim Al-Khalil (bath of Abraham the friend). It is one of the most important archaeological sites in the city and belongs to the Awqaf. Following a Presidential decision by late President Yasser Arafat, the site was restored, rehabilitated and transformed into a museum. The Turkish bath itself
maintains its original shape and beauty which explains why the site was transformed into a museum" (Source, www.hebronrc.org, 2010). The church was built before hundreds of years ago. There is no any kind of religious misunderstanding or conflicts between Muslims and Christians in Hebron, which means that Hebron is a place where people of different religions and ethnic groups could live and work peacefully and cooperatively together.

5.4.1.1 Problems of Cultural Heritage Sustainability in Hebron

According Ju"beh (2009)"Unfortunately, architectural heritage in Palestine has been facing alarming deterioration, destruction, and negligence resulting mainly, (but not only) from the construction boom that took place 1995-2000. As a result of this, the urban, as well as rural and natural landscapes have changed in an unprecedented manner. Almost 50% of the buildings, which have been constructed in most Palestinian towns and villages, were built during this time. The other 50% makes up all the construction from previous centuries". (Ju"beh, 2009.P11).

Although the Cultural Heritage means the people”s identifications and way of dressing, according to study area observations and meetings with local people, the cultural heritage in Hebron is still facing the following challenges:

1 It is important to mention that the author presents a brief summary of the cultural heritage in Palestine/Hebron, but the reader/author can find many studies about the cultural heritage. The following references, books and websites are recommended.
- Ministry of Culture and Arts and Ministry of Tourism and Antiquities (www.mota.gov.ps).
- Ben Arieh., Jerusalem in the 19th Century, the Old City, Jerusalem, 1984.
- The NGOs Ina’ash al Usrah in al-Bireh (Ramallah), Women’s Unions in Ramallah and Bethlehem, etc.
- Waleed, Amayerh, the Songs and famous sayings in Hebron, Hebron, 1998.
- Cultural Heritage –Center, Birzeit University, Ramallah www.birzeit.edu
1. Many of the stories and events regarding the cultural heritage disappear with time because many old/cultural sites are demolished and frequently threatened by new buildings and development projects.

2. The absence of planning to protect the cultural heritage sites as the present urban regulations do not include enough policies for protecting these sites. Besides, construction projects above or beside the cultural heritage sites are mostly determined by developers and landowners.¹

3. Donors fund most cultural heritage projects in the West Bank and mainly architectural preservation, but this kind of funding is mostly not organized and even temporary, and so an annual budget by Ministry of Finance and ministry of arts should be dedicated for cultural heritage projects.

4. The absence of a comprehensive studies and institutions’ framework for developing and protecting the cultural heritage in Hebron. Therefore, it is necessary to have rules and funds to protect the heritage sites.

5. Occupation in the Old City of Hebron prevents celebrating most of historical and traditional ceremonies held for hundreds of years by the Palestinians (e.g. wedding beside Al Haram, Prophet Mohammad (peace be upon him) birthday, free foods for poor people …etc.

5.4.1.2 Cultural Heritage Sustainable Plans: Recommendations and Policies

The researcher conducted several meetings with Hebron municipalities’ engineers, local people, researchers/employees and NGOs working on the issues of cultural heritage², in

¹ See more in Land Use Conflicts chapter 8.
² One of the most active NGOs working in Cultural Heritage in Palestine is RIWAQ which has restoration designs and land use which aim to"a. protect the historical character of the building. b. adjust the building for modern uses .c. fulfill the needs of the different partners intending to use the building. d. ensure sustainability of using the building for at least ten years to come .e. minimize the costs of restoration as well as the running costs afterwards (after finishing the restoration) as much as possible .f. engage the community in several working activities .g. consult with the partners coalition in all phases of work. h. present a pilot educating project in the town and the surrounding area. I. use the project as a vehicle in order to communicate with the community on the subject of cultural heritage, a community outreach approach in both theoretical as well as practical issues".(Ju’beh,2009.P19).
order to decide on the workable cultural heritage sustainable plans, projects and policies. The researcher ends with the following recommendations concerning the cultural heritage:

a. Engineers of large municipalities” such as Hebron, Dora, and Halhul are recommended to publish a technical manual including all the rules and principles for protecting, conserving, and rehabilitating cultural heritage features.

b. The sustainable cultural heritage development plan should be integrated with modern urban and ancient heritage elements within an overall heritage profile for the purposes of land use integration, adaptive reuse, and conservation.

c. It is recommended to incorporate main areas of cultural heritage area as a part of the new urban planning project in the district and to develop guidelines for land-use and old building preservation and to make links with the infrastructure services.

d. It is also recommended to develop the centers of cultural heritage such as old cities and heritage neighborhoods (see also old cities in chapter 8).

e. A comprehensive analysis of the socioeconomic conditions, urban environment, building regulations and public landscape is also recommended and connected with cultural heritage elements. Such kind of studies will organize and manage the whole cultural heritage in sustainable development plans.

f. It is recommended to recognize the watercourse and old springs of Seear, Al Arroub and Saabiyya as heritage landscape features and put include them in the district”s tourism plan.

g. Heritage and historical buildings, corridors and landscape should also be included in the district”s transportation network tourist routes¹.

¹ For each district, there are tourism routes which encourage tourism as a pillar of the national development economy plan. Focusing on cultural heritage sites and promoting them as major tourist attractions, museums, interpretation centers, visitor centers, etc.
h. Adopt a list of the most important and significant old and heritage sites should be made in order to be protected. More development projects for these sites should be funded.

i. Encouraging large sustainable development projects for presenting the community and local people.

j. Developing the current cultural heritage and tourism to match the protection of urban and architectural heritage law, which aims at protecting all antiquity sites.

k. The following historical sites, antiquities, areas, and heritage corridors should be recognized as heritage landscape features¹:

1. Al Haram Al Ibrahimi
2. Hebron – Old City’s Road which includes Al Haram AlIbarahimi.
3. Old cities of Hebron, Dora, Dahreyya.
4. Hebron – Al Hawooz Road
5. Hebron -Bethlehem Road
6. Old Romans and Islamic Places.
7. Dora-Dahreya Road
8. Mamloki Castels.
9. Sultan Pool
10. Al burj old Military Basis.
11. Qasr Al dewaike

The above places and buildings² are familiar to most people in Hebron and they are listed in Ministry of Tourism and Old Antiques as well as in the municipalities as heritage and

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¹ From the available documents, site observations, meetings with professionals in cultural heritage fields, the previously mentioned references in footnote 5.4.1.1, Hebron municipalities’ publications and internal data and the International Committee for the preservation and the promotion of the Old City of Hebron, and the universal cultural heritage, the author considers these historic and heritage corridors as Heritage Landscape. This is the only recommendation that needs further analysis and approval.

² Each place and building needs an independent research and study to discuss its elements and components. Here, the author mentioned the name and for further details, the reader can return to literature review for more about each.
old places. As a result of this, any sustainable development plan is recommended to protect these places and to highlight them on Hebron’s cultural and tourism map.

5.4.2 Population Numbers, Classifications and Distribution

"Adopting a sustainable development approach to population requires a long-term perspective. It means addressing all potential consequences of actions. Issues include the consequences of the size and composition of the population, including linkages to quality of life, economic development and environmental enhancement. They include the need to give opportunities for development to people of all ages, now and in the future". (Med, Msd& dol, 2003.P10)

The overall population in Hebron according to the last official survey in 2007 was around552, 164(i.e. about 23.6% of West Bank population). Compared to figures of 1967\(^1\), the number of population in Hebron has witnessed a great decrease in the annual growth rate during the period (1967-2007) like most of the Palestinian cities due to the occupation’s procedures of migrating large numbers of people (local refugees) after the 1967 occupation of the West Bank and Gaza strip. However, the increase in the number of population led to an increase in population’s annual growth rate from 2.49% during the period 1967-1997, to 3.91% during the period 1997-2007." (PCBS, 2008).

The question here is, why does the sustainable development planner need to investigate the demographic and population characters and figures? From these figures, the planner can recommend the job opportunities, also the number of houses, schools, hospitals, infrastructure, and industries needed in the coming 20 or 30 years to cover the increase of future people demands in all fields. Depending on the number of all the mentioned

\(^1\) After 1967 war, more social and demographic changes took place, and many people became refugees inside the West Bank (Two Refugee camps in Hebron: Al Arroub and Al Fawwar) or in the neighboring countries such as Jordan, Syria and Lebanon.
demands and the time needed, the planners could also recommend the size, location and timeframe for these services\(^1\).

\[\text{Picture (5.11): Palestinian People in the West Bank (Source: Researcher, 2008).}\]

Compared to other countries, Palestine experiences a high growth rate. In general, the number of population is doubled every 25 years which means increasing the numbers of the projects, food, and services...etc,.. If the planners do not consider these changes by adopting proper plans, they will risk any sustainable development plans. As shown in the following table, "the area have witnessed an increase of (223, 548 during the years 1967-1997 and they have witnessed an increase of 161892 during the last ten years1997-2007, with a yearly increase rate of 16189 people and this requires to provide about 2700 residential units yearly to meet the increasing needs and requirements of residences and dwellings for normal population growth ".(PCBS,2008 & Hebron Municipalities, 2008)

\(^1\) The recommendations for future Hebron sustainable development, in coming chapters (5,6,7,8&9), depending on these population figures until 2025 .

<table>
<thead>
<tr>
<th>Community</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hebron City</td>
<td>52312</td>
</tr>
<tr>
<td>Dora</td>
<td>21309</td>
</tr>
<tr>
<td>Yatta</td>
<td>13219</td>
</tr>
<tr>
<td>Daheriya</td>
<td>8490</td>
</tr>
<tr>
<td>Hulhool</td>
<td>6312</td>
</tr>
<tr>
<td>Ethna</td>
<td>11276</td>
</tr>
<tr>
<td>Beit ommar</td>
<td>4132</td>
</tr>
<tr>
<td>Seear</td>
<td>4701</td>
</tr>
<tr>
<td>Samoua</td>
<td>5423</td>
</tr>
<tr>
<td>Bini Neam</td>
<td>6201</td>
</tr>
<tr>
<td>Tuffoh</td>
<td>3129</td>
</tr>
<tr>
<td>Al Fawwar Camp</td>
<td>3912</td>
</tr>
<tr>
<td>Al Arroub Camp</td>
<td>5004</td>
</tr>
<tr>
<td>Villages and Ruler Areas</td>
<td>21304</td>
</tr>
<tr>
<td>Total</td>
<td>166724</td>
</tr>
</tbody>
</table>

1 The population figures, mainly for 1967, are estimations rather than accurate figures because they were collected from different resources like municipalities (Hebron, Dora, Yatta, Hulhool etc), Local Councils and UNERWA. Regarding, the population figures for 1997 & 2007 were taken from BCPS publications and website depending on population surveys conducted in the same two years.
Figure (5.5): Age and Sex Distribution in Hebron District population (PCBS, 2008).

Studying the population’s development, its causes and demographic structure in Hebron depends on different statistics that shows the population growth in Hebron from 1967-2010. This was done to know how the population of the entitled agglomerations will develop, “study depending on the official results of the surveys which were conducted in the areas preferring not to rely on partial surveys and in different periods for some agglomerations, in addition to the increase of mistakes in conducting these surveys by unspecialized parties in this field. Furthermore, the focus will be on census of Palestinian population, residences and facilities made by the Palestinian Central Bureau of Statistics PCBS in 1997 and 2007. This is considered the main source of reliable statistical data” (Umaer, 2008.P17). In addition, the bureau is the only official resource authorized by the Palestinian Authority. The study will also depend on the population drops and the field surveys” results conducted by many governmental and nongovernmental institutions in Palestine which aim to figure out the development of population characteristics, hygienic and educational services in Hebron. Only significant and important data will be presented and discussed in this section, then it they will be linked with research objects and agenda. Hence, demographic studies
involve many issues and subjects that are not needed in such kind of academic report at the time being.

Sustainable development plans examine the qualitative structure of the population (i.e. male to female ratio in different ages). The population’s qualitative structure in Hebron increased from 94 males/100 females in 1967 to 100 males/100 females in 2007 where males and females. A difference has been noticed in the quality proportion from one age group to another as shown in the Fig 5.6. It increases in the group age under 19 and between 30-40 to reach its maximum rate of 109 males/100 females in the age group of 35-39 year old because of the incoming migration from the nearby cities and towns to work in the Palestinian Authority’s institutions." (PCBS, 2008).

![Figure (5.6): The Difference in the Quality Proportion from One Age Group to Another in 2007 (Source: PCBS, 2008).](image)

In respect to age structure, the planners have great interest in the children’s proportion under 15 years old. According to the above figure and PCBS data, they form 41% of the whole population in Hebron, whereas the young people-less than 30 years-form 58% of the total population in 2010; and thus the old people (65 years) do not exceed 3.9%. This indicates that the society of Hebron as well as Palestine consists
mainly of young people and supports the possibility of population annual growth rate increase in Hebron during the last few years. Because of the increase in population proportion in marriage age, there is an increase in the rate of new families' composition and parturition rates. "The rise in the young and middle age population proportion and the decline of the proportions of the old indicates that the area’s society is increasing rapidly in the subsequent years. There is also a tendency towards an increase in the annual growth rate, productivity rates and the demand for educational and hygienic services. This will definitely lead to an increase in unemployment proportions, and will have a clear impact on the standards of living" (Umaer, 2004). In general, the people in Hebron are educated and have university degrees in most science and engineering subjects such as planning, new technology engineering, environment engineering, transportation, economics’ experts …etc, which could help develop plans and projects to achieve the sustainable development goals. "Regarding higher education, there are 43 institutions of higher education operating in the Palestinian Territories including 12 universities, 12 university colleges and 19 community colleges. The number of university students enrolled in these institutions in 2007/2008 reached 180,956 students, about 4.8% of the total population. This number shows an increase of 6.7% from the previous academic year. About 52.2% of the students joined traditional universities compared to the 33.4% who joined Al Quds Open University. The rest of the students are distributed among the intermediary community colleges, about 7.2%, and university colleges (3%)" (MAS, 2010 .P15). People’s qualifications and skills are summarized in the following figure.
Figure (5.7): Distribution of the Population in Hebron.
(Aged 10 and over) by Educational Attainment, 2007(PCE, 2008).

"The Israeli policies had a direct effect on the changes in labor market demand for educated Palestinian laborers, despite the fact that the level of demand for laborers dramatically decreased. This proves that education had a very important role in reducing the probability of unemployment. The situation in both the West Bank And the Gaza Strip was different in terms of the demand for laborers with different levels of educational attainment, In the West Bank the demand for workers with college diplomas or higher was high, whereas the return on mid-level educational attainment (college diploma) was the highest"(Al Kafri .P10)
5.4.3 Population Growth and Main Concern

It was necessary and inevitable to study the death and birth indicators in Hebron in order to recognize the population growth and to estimate the role of the natural increase in increasing the number of population. Therefore, estimating the incoming migration to the Hebron from outside Palestine, especially the Palestinians who work in the gulf states and return back, or those who come from the surrounding cities (e.g. students in Hebron universities, employees in the governmental and private sectors employees, and investors). In order to stand on the role of death and birth rates, the data available in the Ministry of Interior and municipalities were taken to determine the birth and death rates in all agglomerations encompassed in the study and registered in the statistical records. It is worth mentioning that the PCBS indicates that the completion percentage in that record was 88% which was a high percentage in the first years. The Palestinian Authority got that record from the Israeli authorities. By tracking the population record obtained from PCBS, it was observed that the number of life births, born in or outside the Hebron for permanent residents and were registered in civil status record between 1997-2007, was 166892 births, while the number of deaths in the same area was 21403. This means that the area has witnessed incoming migration of about 1497 people on a yearly basis. This migration is mainly from employees, students and housing relocate as mentioned above. From the above details of the population annual growth, it appears that the area will witness a continuous increase in growth rate; although the migration factor was excluded due to the fact that it is hard to determine its impact under the current circumstances in the Palestinian Territories. The following table summarizes the important expected demographic changes in Hebron until 2025.

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1 In Hebron District there are three big universities namely, Hebron university, Palestine Polytechnic university and Al Quads open university also there are many technical colleges like Al Arroub technical colleges and industrial education center college, moreover there are four high industrial schools.

2 “The International Conference on Population and Development in Cairo in 1994 recognized that population policy should be oriented toward improving social conditions and expanding choices for individuals. The key recognition was that focusing on people – their rights, capabilities, and opportunities – would have multiple benefits for individuals, for society, and for their sustainable relationship with the environment”. (Lutz & Shah- www.iiasa.ac.at/gsp)
It also appears that population number in Hebron will be doubled in about 22 years if the rates and demographic characteristics continue as they are. However, it is noticed that the population annual growth rate decreases gradual. The social sustainable development is a complex matter and needs a lot of discussion and analysis in order to provide people’s needs and reduce poverty. "A socially sustainable system must achieve fairness in distribution and opportunity, adequate provision of social services including health and education, gender equity, and political accountability and participation also. Social equity, the fulfillment of basic health and educational needs, and participatory democracy are crucial elements of development, and are interrelated with environmental sustainability." (M. Harris, 2003. P1). The below table shows the social/demographic important figures of population in Hebron for the last 13 years and until to 2025. The figures for 1997 & 2007 are taken from BCPS surveys and data, but the figures for 2015, 2020 and 2025 are only estimations and need more review in future.
## Table (5.2): Future Estimations for Population Growth in the Hebron
(PCBS-Hebron Office, 2009)

<table>
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<tbody>
<tr>
<td><strong>Fertility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total fertility Rate (TFR)</td>
<td>3.9</td>
<td>4.21</td>
<td>4.51</td>
<td>4.92</td>
<td>4.91</td>
</tr>
<tr>
<td>Gross Reproduction Rate</td>
<td>1.91</td>
<td>2.02</td>
<td>2.11</td>
<td>2.61</td>
<td>2.65</td>
</tr>
<tr>
<td>Net Reproduction Rate</td>
<td>1.75</td>
<td>1.88</td>
<td>2.14</td>
<td>2.19</td>
<td>2.91</td>
</tr>
<tr>
<td>Mean Age of Childbearing</td>
<td>27.6</td>
<td>28.3</td>
<td>28.9</td>
<td>29</td>
<td>32.2</td>
</tr>
<tr>
<td>Child-woman ratio</td>
<td>0.59</td>
<td>0.6</td>
<td>0.62</td>
<td>0.66</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Mortality &amp; Life Expectancy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male LE</td>
<td>73.1</td>
<td>73.4</td>
<td>72.9</td>
<td>71.5</td>
<td>70.6</td>
</tr>
<tr>
<td>Female LE</td>
<td>77.2</td>
<td>76.2</td>
<td>75.5</td>
<td>74.7</td>
<td>73.5</td>
</tr>
<tr>
<td>Total LE</td>
<td>75.5</td>
<td>74.9</td>
<td>74.2</td>
<td>72.9</td>
<td>71.8</td>
</tr>
<tr>
<td>Total population</td>
<td><strong>883,469</strong></td>
<td><strong>781,770</strong></td>
<td><strong>698,690</strong></td>
<td><strong>552,164</strong></td>
<td><strong>390,272</strong></td>
</tr>
<tr>
<td>Male population</td>
<td>432,280</td>
<td>382,631</td>
<td>42,110</td>
<td>271,063</td>
<td>191,170</td>
</tr>
<tr>
<td>Female population</td>
<td>451,189</td>
<td>399,139</td>
<td>356,580</td>
<td>281,101</td>
<td>199,102</td>
</tr>
<tr>
<td>Percent 0-4</td>
<td>14.9</td>
<td>14.6</td>
<td>14.8</td>
<td>15.6</td>
<td>14.9</td>
</tr>
<tr>
<td>Percent 5-14</td>
<td>23.6</td>
<td>25.1</td>
<td>26.3</td>
<td>26.4</td>
<td>25.8</td>
</tr>
<tr>
<td>Percent 15-49</td>
<td>48.2</td>
<td>46.4</td>
<td>46.1</td>
<td>47.3</td>
<td>47.8</td>
</tr>
<tr>
<td>Percent 15-64</td>
<td>59.1</td>
<td>57.6</td>
<td>55.4</td>
<td>52.4</td>
<td>55.4</td>
</tr>
<tr>
<td>Percent 65 and over</td>
<td>4.1</td>
<td>3.8</td>
<td>4.9</td>
<td>4.8</td>
<td>4.6</td>
</tr>
<tr>
<td>Sex ratio</td>
<td>101.2</td>
<td>101.4</td>
<td>101.9</td>
<td>100.9</td>
<td>99.7</td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>0.77</td>
<td>0.81</td>
<td>0.85</td>
<td>0.82</td>
<td>0.79</td>
</tr>
<tr>
<td>Median age</td>
<td>22</td>
<td>21</td>
<td>20</td>
<td>19</td>
<td>22</td>
</tr>
</tbody>
</table>

1^Changes in fertility have implications for sustainable development. Fertility will continue to be an important driver of future changes in size and composition of the population. Equally, work and family issues have broader implications for both fertility and sustainability" (Med, Msd& dol, 2003.P38).

Figures in this table for year 1997-2007 are the actual numbers. 2015-2025 figures are only expected estimations and need future review and auditing according the next PCBS planned survey in 2017.
5.5 Economic Setting

"Reform and development of the Palestinian economy and its institutions must proceed immediately. To succeed, these reforms must be implemented with determination by the PA, underwritten by donors and supported by Israeli actions. In the same vein, Israeli policies that impact the Palestinian economy and Palestinian actions on security to reinforce these policies must proceed in parallel" (World Bank, 2007.P2)

The Palestinian Economy is still suffering from economic crises caused by the Israeli measures in the Palestinian Territories since the beginning of Al-Aqsa Intifada in September, 2000. There was a substantial decline in the performance of different socioeconomic fields which had reached its core in 2005/2006. In 2007, the Palestinian economy had accomplished a slight improvement in most economic activities which still continues in 2010. "The findings of the national accounts at constant prices of the remaining West Bank and Gaza Strip for the year 2008/2009, showed that the value of the gross domestic product had reached 1017.2 million US$, with a growth rate by 6.3% compared to 2007/2008, although the value of GDP per capita was 1819.5 US$". (Department of economic in Hebron, 2010).

The Palestinian Economic growth in 2006-2010 compared to the 2001-2005 was a result of the growth in the main economic activities within the available short term indicators for each activity and the changes in the political conditions and the end of the second Intifada. Growth took place in construction, industries, trade, hotels and education, in addition to the economic relations and trade between Palestine and Israel that increased in the last four years, where one of activities on this as an example is the Palestine International Business Forum (PIBF). The below figure represents the Palestinian development program discussed in the conference

**Figure (5:8 : Palestinian Government’s Development Program for 2008-2010(Source: world bank, 2007.P16)**

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(PIBF) brings together Palestinian, Israeli and Swedish business interests in order to create sustainable economic development in Palestine. PIBF is a private-sector project whose members are prominent business leaders. We believe that free and equal trade builds stability in Palestine and creates security for Israel. In relation to the business conference a Partnership Platform Meeting was arranged by PIBF, gathering prominent representatives from likeminded initiatives dealing with economic aspects in the effort to bring peace and prosperity to the Middle East region. The purpose of the meeting was to initiate an exclusive, informal, discussion on the strategic level on how private sector actors can coordinate their efforts in the strive for a strengthened Palestinian economy as a foundation for future sustainable relations within a two-state solution framework. Several initiatives were represented at the meeting such as the AIX Group, IPCRI, UN Global Compact, President Obama’s Special Envoy for Middle East Peace, the Swedish MFA, the Office of the Quartet Representative, the European Commission, the Geneva Initiative, Portland Trust and NIR. (PIBF Conference ,2009.P)
Economical sustainable development contributes much to sustainability process as discussed in chapter two. The following section includes more data and analysis about the economical setting in Hebron. As mentioned previously, the researcher addresses the economical issues believed to have a link only with Hebron’s sustainable development requirements.

5.5.1 Main Findings Related Hebron’s Economic Sector

The structure of the economy of Hebron can be reflected by the number and size of Hebron’s institutions which is a rough indicator since it focuses on the number of institutions. It does not reflect their size in terms of employment, production and value added. Nor does it reflect the quality, size and age of these institutions in terms of the economic decisions they make. This is a crucial issue in Hebron since almost all of the headquarters and branches of the private sector’s establishments, NGOs and other public institutions for the south of the West Bank are based in Hebron.

According to the research, the business environment in Hebron was studied and analyzed through two main tools: firstly by the available data and secondly by surveys through a questionnaire and structured interviews with the main target groups such as municipalities’ mayors and engineers, companies’ owners, employees, researchers in the same field and decision makers of the working sector in the Hebron. A comprehensive and detailed questionnaire was designed targeting the business environment in Hebron. The main objective of this questionnaire was to have a clear understanding of all the factors affecting the working environment in Hebron including availability of the main services, infrastructure, encouraging factors, obstacles, security issues, sustainable development policies and academic recommendations required to achieve and encourage the economical growth and sustainability. According to economic field study, the researcher prepared two types of questionnaires for 250 institutions (see annexes). The researcher also prepared an economic study questionnaire for 1000 people, however; 1250 questionnaires were distributed among the sample of the study and 1047 were collected with a response rate of 83.8%. Many factors were taken into consideration in the distribution process...
such as geographical area, sector (Public, Private, and Non-governmental), and type of work (copies of the questionnaires are attached).

Table (5.3): Sample Distribution According to People

<table>
<thead>
<tr>
<th>Sector</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>353</td>
</tr>
<tr>
<td>Private</td>
<td>404</td>
</tr>
<tr>
<td>Non-governmental</td>
<td>144</td>
</tr>
<tr>
<td>Missing</td>
<td>101</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1000</strong></td>
</tr>
</tbody>
</table>

The sample of the study also covers different types of work such as industrial and services firms, and the following table shows the percentage of each one:

Table (5.4): Sample Distribution According to the Institution Type of Work

<table>
<thead>
<tr>
<th>Type of work</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>91</td>
</tr>
<tr>
<td>Services</td>
<td>68</td>
</tr>
<tr>
<td>Missing</td>
<td>92</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>250</strong></td>
</tr>
</tbody>
</table>

5.5.1.1 Questionnaire Surveys’ Analysis and Output

Most of the previous studies and literature review of Hebron’s economy discussed the trades, influence, job opportunities, but still none of these studies discuss and analyze the link between the economic and urban sustainable development. Due to this, the researcher made study area observation, field research and data collection via questionnaires regarding urban economy key issues. A lot of data and information are obtained from these surveys, and the most important events are as follows:

**a. Work place**

The results of the survey show that 59.7% of the work places are rented, while 39.3% are possessed by the owners of the establishment's. The most important obstacles faced in finding locations for organizations can be summarized as follows:

- The lack of locations that complies with the required specifications, and
- High renting prices mainly at centers during purchasing. The above facts inform the planner and decision maker that the economical organization in Hebron need more effective infrastructure services and new projects or policies to reduce the rent rate or facilitate the land and building ownership.

**b. Lands in the District of Hebron**

Land availability, price, use distribution and nature are the core of urban and sustainable planning development, especially in Palestine. It was noticed from the questionnaire analysis that lands are not available in the areas and locations required by the majority of the sample. In addition to, if the lands are available, they need a lot of excavations because of its inclined nature. The majority of the sample agrees on the fact that the land prices are too high. On the other hand, there are some difficulties concerning land registration in Hebron. The following table summarizes the results regarding lands in the Hebron District.

**Table (5.5): Results Regarding Lands in the Hebron District**

<table>
<thead>
<tr>
<th>Description</th>
<th>Yes %</th>
<th>No %</th>
<th>To some Extents %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability – Area</td>
<td>47.1</td>
<td>24.6</td>
<td>28.3</td>
</tr>
<tr>
<td>Availability – Location</td>
<td>25.5</td>
<td>42.9</td>
<td>31.6</td>
</tr>
<tr>
<td>Quality – Flatness</td>
<td>35.4</td>
<td>36.6</td>
<td>28.0</td>
</tr>
<tr>
<td>Prices are high</td>
<td>64.9</td>
<td>18.2</td>
<td>16.9</td>
</tr>
<tr>
<td>Registration easy processes</td>
<td>82.7</td>
<td>3.8</td>
<td>2.5</td>
</tr>
</tbody>
</table>

**c. Labor Force in the Hebron District**

Labor force is part of trading, industry and economical cycle. The researcher asked a number of questions about labor qualifications, employment strategies and salaries. These questions give the planners and decision makers a clear idea about the necessary steps and required policies for creating job opportunities, market needs and building capacity requirements which are considered as general part of economical development. The results of the survey indicate to the adequacy of labor force (quantities and

---

1 The questions and modifications are in Tables’’ sections (b, c, e &g) taken from RAB-Metropolitan economical study, but the results were filled from Hebron study area.
specialization) in Hebron which this is a result of the internal emigration from the West Bank territories to the Hebron. About 40 % of the sample indicates that the available labor desiderates to the appropriate experience. On the other hand, the majority of the sample agrees that the requested salaries are high to some extent. The following table summarizes the results regarding labor force in the Hebron.

Table (5.6): Results related Labor Force in the Hebron District.

<table>
<thead>
<tr>
<th>Description</th>
<th>Yes %</th>
<th>No %</th>
<th>To some Extents %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor force available (adequate Quantities and specialization)</td>
<td>36.6</td>
<td>40.9</td>
<td>21.4</td>
</tr>
<tr>
<td>Labor force available that That have good experience</td>
<td>31.6</td>
<td>39.2</td>
<td>29.2</td>
</tr>
<tr>
<td>The required salaries are high</td>
<td>32.4</td>
<td>27.9</td>
<td>39.7</td>
</tr>
</tbody>
</table>

d. Living Services and Commodities in the Hebron District

About 65% of the sample considered the prices of living and commodities in Hebron to be expensive, and 25 % of it believed that the prices of living services and commodities are acceptable, while the rest stated that they are similar to those in the other areas of the West Bank. This indicator is recommended to be discussed and analyzed more like which kind of accommodation has big demands and when this part is needed to be part of housing and building development strategy.

e. Security and Justice Issues in the Hebron.

Security means stability, new projects, new investments and healthy environment for businessmen. The majority of target sample complains about the level of security and implementation of judicial decisions in Hebron. The majority also criticizes the efficiency and transparency of judicial procedures. It is well known that Palestine has special conditions in security issues since the Israeli occupation and the struggle with Palestinians. Despite this, no one can neglect the importance of security since it brings investors and encourages businessmen to open new trades and projects. The following table summarizes the results regarding security and justice issues in Hebron:

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1 See more in formal and informal economical sector in same chapter below.
Table (5.7): Results Regarding Security and Justice Issues in Hebron

<table>
<thead>
<tr>
<th>Description</th>
<th>Yes %</th>
<th>No %</th>
<th>To some Extents%</th>
</tr>
</thead>
<tbody>
<tr>
<td>The judicial procedures conducted efficiently and rapidly</td>
<td>20.4</td>
<td>55.1</td>
<td>24.5</td>
</tr>
<tr>
<td>Judicial decision is applied by security agencies efficiently.</td>
<td>10.3</td>
<td>60.1</td>
<td>29.6</td>
</tr>
<tr>
<td>Transparency in solving problems</td>
<td>16.9</td>
<td>51.6</td>
<td>31.5</td>
</tr>
<tr>
<td>Security level is considered to be high</td>
<td>8.6</td>
<td>65.6</td>
<td>25.8</td>
</tr>
<tr>
<td>The judicial procedures are transparent</td>
<td>27.7</td>
<td>49.7</td>
<td>20.9</td>
</tr>
</tbody>
</table>

f. Licensing Procedures

The following figure clarifies the obstacles of firms’ licensing procedures. About 52 % of the sample criticizes the pericardial procedures and high fees.

Figure (5.9): obstacles of licensing procedures for firms in the Hebron

In general, as more trade licenses are issued, investors are encouraged, the economical indicators will be better and a healthy investment environment will be available.

g. Factors Encouraging the Establishment of Organizations
The target sample was asked to select the most important factors affecting their decision to establish their organizations in Hebron.

Table (5.8): The Most important Factors Affecting the Sample’s Decision to establish their Organizations in Hebron.

<table>
<thead>
<tr>
<th>The Important Factor</th>
<th>(%)</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>The availability of supporting /similar companies and institutions.</td>
<td>78</td>
<td>1</td>
</tr>
<tr>
<td>The availability of supporting industry and skilled employees</td>
<td>69</td>
<td>2</td>
</tr>
<tr>
<td>Availability of big markets needed for selling the products and services</td>
<td>62</td>
<td>3</td>
</tr>
<tr>
<td>Availability of lands &amp; buildings with suitable quality and prices</td>
<td>61</td>
<td>4</td>
</tr>
<tr>
<td>Level of security compared to other areas in the West Bank.</td>
<td>42</td>
<td>5</td>
</tr>
<tr>
<td>The closeness to Bethlehem Jerusalem</td>
<td>40</td>
<td>6</td>
</tr>
<tr>
<td>Concentration of Palestinian Authority’s institutions in the area</td>
<td>32</td>
<td>7</td>
</tr>
<tr>
<td>Availability of infrastructure services (water, electricity, roads)</td>
<td>28</td>
<td>8</td>
</tr>
<tr>
<td>Availability of entertainment centers</td>
<td>14</td>
<td>9</td>
</tr>
</tbody>
</table>

It is noticed from the above table that the most important factor forcing different organizations to invest in the Hebron is its central location in the West Bank and the presence of many other local and foreign firms, institutions, establishments in the area as well as the availability of supporting services centers such as banks, insurance companies, …etc.

5.5.1.2 The Formal Economical Sector Organizations

The total number of establishments in the Hebron is about 6,167 establishmets in (2008). About 48% of the establishments operates in the wholesale, retail & repairs sector, about 13% work in manufacturing sector, real estate, renting & business activities (9%), the other community, social & personal services (8%), then the Hotels & restaurants (6%).

---

1 In June 2010 at the University of Pavia and in with partnership with other universities like Birzeit, the Conference was held for "The Palestinian Economy: theoretical and practical challenges". In the conference, many valid research papers that examine the Palestinian economic conditions were presented and discussed.
The average growth rate of the number of establishments is almost (2%) on a yearly basis. The estimated number of establishments in Hebron will be around 6285 in (2009), and 6407 in 2009/2010 and so on. The relative share of the establishments in Hebron compared to those of the West Bank was about 23% of the construction establishments, and 20% of the real estate and transportation establishments (Hebron University-Economical Faculty, 2009).

**Fig (5.11): The Number of Establishments by Economic Activity in Hebron 2007/2008**  
(Source: Drawing by Researcher, 2009)

The estimated output of Hebron was about 870 - 900 million US$ in 2008/2009 which is equivalent to the 25.5 % of the output of the West Bank in 2008/2009. This is a rough estimation with a high margin of error and might represent the bottom line of the relative role of Hebron." (MoINE 2008 Developing the Occupied Territories, 2008 & Hebron Governor Office, 2008)
Table (5.9): The Number of Establishments and people in Hebron in 2007/2008\textsuperscript{1}.

<table>
<thead>
<tr>
<th>Locality</th>
<th>Number establishments</th>
<th>Persons Engaged</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hebron City</td>
<td>2,359</td>
<td>12,583</td>
<td>7,262</td>
<td>19,845</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dora</td>
<td>1,140</td>
<td>5,006</td>
<td>1,692</td>
<td>6,698</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yatta</td>
<td>532</td>
<td>2,020</td>
<td>919</td>
<td>2,939</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daheriya</td>
<td>319</td>
<td>1,420</td>
<td>754</td>
<td>2,174</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hulhool</td>
<td>309</td>
<td>912</td>
<td>655</td>
<td>1,567</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethna</td>
<td>181</td>
<td>618</td>
<td>229</td>
<td>847</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beit ommar</td>
<td>155</td>
<td>527</td>
<td>216</td>
<td>743</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seear</td>
<td>112</td>
<td>429</td>
<td>136</td>
<td>565</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samoua</td>
<td>114</td>
<td>371</td>
<td>182</td>
<td>553</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bini Neam</td>
<td>104</td>
<td>576</td>
<td>53</td>
<td>629</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuffoh</td>
<td>98</td>
<td>432</td>
<td>132</td>
<td>564</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Al fawwar Camp</td>
<td>61</td>
<td>243</td>
<td>87</td>
<td>330</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Al Arruob Camp</td>
<td>54</td>
<td>221</td>
<td>234</td>
<td>455</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Villages</td>
<td>438</td>
<td>1879</td>
<td>1728</td>
<td>3607</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,976</strong></td>
<td><strong>27,237</strong></td>
<td><strong>14,279</strong></td>
<td><strong>41,516</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{1} Source(Hebron Trade and Commerce Association , 2008 &PCBS, 2008)
According to PCBS’ data (2010), the labor force in Hebron was "76126 people, while the manpower was 103224 people during (2009) . The number of the unemployed in Hebron was 27098people during 2009. Thus, the unemployment rate is 26.3 % which is more than that of the West Bank, 24.2% during 2009" (PCBS, 2010).

As shown currently, 26.3 % of labor force is unemployed, which means that urgent and essential projects and special programs should be started. This is done to create new job opportunities for those people through short term plans and permanent jobs. This also requires more statistics of the qualifications of the employed and their locations. More discussion and governmental fund are also required at the short term to cover the lack in job opportunities.

The above labor force”s numbers include those who work in establishments, but they exclude those who work in the informal sector. These will be presented later. a lot of the employed people in Hebron have high educational degrees. The major employer in Hebron is the services sector (e.g. construction, trade and commerce, hotels, transportation) and in addition to the public and governmental organizations such as electricity company, water company, municipalities, private companies…etc. The mass number of workers in Hebron in specific, and in Palestine in general work in the governmental sector (e.g. teachers, doctors, police…etc), but their salaries are not satisfactory compared to those given by Israeli government (1:5). This means that the governmental employees” salaries are not enough to provide the people”s health needs and suitable life like good house, medicine and the essential needs. The private sector employs thousands of employees as shown above, but in general the salaries” scales are better than the governmental sector. Because of this, people prefer to work in private sector.
According to the Department of Economics in Hebron (2008), 59% of employment, while 19% of the workers are employed in the manufacturing sector. Only 35% of the employed work in jobs that need high skills (e.g. professional and senior legislators), while the rest work in jobs that need less skills”.

Another issue is women’s participation in the Palestinian economy, and according to MAS (2010.P7) "The labor force data for the year 2009 shows a relative improvement in labor market indicators. The overall percentage of participation in the Palestinian Territories reached 41.6%, compared to 41.3% in 2008, with 43.8% and 37.6% in the West Bank and Gaza Strip respectively. Such an increase in the percentage of participation was caused primarily by 76,000 individuals entering the labor force, pushing the total labor force to 951,000. The participation of women in the labor force

---

1 Such kind of companies contains around 300 engineers, accountants, technicians and labors. In Hebron, the large organizations like municipalities and large factories employ hundreds of workers, but none of Hebron’s organizations employ thousands of worker. Hence, most of these organizations are for local and regional purpose only.
increased as well from 15.2% to 15.5%. The following figure shows more about the number and kind of professional jobs that Palestinian women have.

**Figure (5:12): Gender Distribution for professional Jobs in Palestine (Source: ESCWA, 2009)**

<table>
<thead>
<tr>
<th>Profession</th>
<th>Male (%)</th>
<th>Female (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td>87.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Dentists</td>
<td>83.1</td>
<td>6.9</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>55</td>
<td>45</td>
</tr>
<tr>
<td>Nurses</td>
<td>46.9</td>
<td>53.1</td>
</tr>
<tr>
<td>Lawyers</td>
<td>88.8</td>
<td>1.2</td>
</tr>
</tbody>
</table>

5.5.1.3 Informal Sector

"The mainstream view of the informal sector is that it falls within the domain of social policy, State regulations and legal reform. Such a view does not account for the complexity of the informal sector, which comprises a wide range of activities that cannot be lumped together in one category. Not all informal enterprises are established as a response to poverty. Globalization and transnational corporations have encouraged the expansion of this sector even in developed countries. In the Palestinian case, de-formalization has been imposed by conflict and artificially stunted growth of the formal private sector. The conventional view also ignores the linkages between the

---

1 In 2009 the Economic and Social Commission for Western Asia (ESCWA), prepared a report entitled (Social and Economic Situation for Palestinian Women 2006-2009). The report presents many availed points and ideas about gender in Palestine. It is strongly recommended to refer to it.
formal and informal sectors, which render them vulnerable to economic policy, as well as the fact that in the informal sector, households and enterprises are often closely intertwined since owners use earnings to maintain the livelihoods of their families" (UN-TD, 2006. P13)

For informal sector, there are no accurate or official statistics about the number of laborers, kinds of trades, number of informal establishments and the economical contribution. The main jobs in the informal labor are the construction sector (e.g. laborers working in Israel, street vendors, drivers, home based workers ... etc.). According to the interviews and public meetings with decision makers at the Ministry of Labor and with 14 informal laborers, it was found that the main problems facing the informal sector in Hebron is the absence of any sustainable plans, and hence most of the informal sector’s laborers do such works because they have no other resources of income or solutions. Moreover, the work is not satiable especially during closures between the West Bank and Israel. They sometimes stay with no work for a year. According to the Ministry of Labor, the estimations show that the informal sector shared around 25% of Hebron’s economy. This means that this sector is very important and fundamental for any future sustainable development. Many of the non-educated people work in informal sectors, and one of laborers Jamal said “If I have a formal job with an income, I will directly shift to it”. It is clear that this sector needs comprehensive plans to be mitigated with the formal sector and to be improved by implementing the necessary laws and arrangements.
"The Palestinian laborers, who work in Israel are paid daily and work in different sectors such as construction, agriculture, factories and trades. Israel's authority gives part of them legal license to work inside Israel, but most of them work illegally". (Haresh, 2008, p2). It is necessary to consider informal laborers as part of Hebron’s Economical/Employment Plan. The labors can work in manufacturing, industrial areas, or large office districts, population-serving, retail, food services, personal services, education, health care, public administration, and workshops…etc. Hebron also provides for large Population serving employment areas located within the mixed-used Hebron growth centers and District corridors. The discussion and analysis of informal sector is a major issue and it needs governmental establishments to make comprehensive surveys about the informal workers’ qualifications, type of work, salaries, sectors of work, ages, hopes, alternatives….etc. Such kind of studies can give accurate and actual figures that help the planner use the results in Hebron’s economical

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1 The reader can find more details and information about the informal sector at Palestine in the publication (2008) from IKO (ILO, Unprotected employment in the West Bank and Gaza Strip: a gender equality and worker’s rights perspective Beirut, International Labor Organization, 2008)

2 See more in Industrial and Employment Plan, section (5.) below.
sustainable development plan. In this research study, the researcher mentioned this important sector and the available data which will be helpful for further discussion and studies.

5.5.2 Agricultural Sector-the Current Conditions

"Agriculture plays a crucial role in sustainable development and in hunger and poverty eradication. The challenges faced by agriculture in sustainable development is in working out ways of bringing about a society that is materially sufficient, socially equitable, ecologically sustainable and one that is not obsessed by growth only, but motivated by satisfying human needs and equity in resource ".(DAFF, 2003, P3)

The agricultural sector is one of the main economic activities in the West Bank since long ago, and more particularly Hebron which is historically known as an area of agriculture and grapes and trading. The traditional industries in the West Bank are strongly related to agriculture, and now there are many factories for food production using local agricultural products animals or vegetables). Moreover, agriculture still plays a significant role in the Palestinian economy as thousands of people work in this sector which has been deteriorating and there no sustainable development plans for linking the agricultural sector with the other economic and urban sectors.

The significance of agriculture to the residents of Hebron is reflected today in the wide variety of markets, and shops located all over Hebron’s roads. They sell local agricultural products such as tomatoes, cucumbers, eggplants, and squashes, etc. Hebron is most famous for grapes, which are the symbol used for the city, in addition to plums, peach almonds; olive trees planted Hebron’s mountainous areas.

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1 The Agricultural sector includes all the activities of production carried out by farmers like planting vegetable, fruits, as well as animals, milk products, manufacturing …etc.
2 The geographical character and climate conditions in Hebron give the farmers an opportunity of having a wide range of agricultural products. Moreover, the area of Hebron is relatively small, but the big changes of climate from one area to another range from desert land to cold mountains. Thus, all kinds of vegetables can be produced all the year round. The warm winter months in the east area allow the production of winter vegetables, and the moderate climate in summer allows the production of vegetables in the mountainous and coastal areas of Hebron.
Picture (5.18): Fruits and Vegetables Planted in Hebron’s Agricultural Areas (Source: Researcher, 2008).

The farmers in Hebron especially in Dora, Ethna and Halhul grow their vegetables and fruits in greenhouses or (Hamamut) in Arabic. These kind of plastic houses allow a good control of climate and so vegetables are grown all the year round. Besides, other field crops include (potatoes, onions, forages and grains). Some of the farmers in Hebron are using new technologies and irrigation systems in order to reserve water, protect plants and also to increase production and reduce farmers” loss. The Ministry of Agriculture has two offices in Hebron: one in the main city and the other in Dora. Both offices supervise and give advice to farmers in Hebron. Moreover, the ministry coordinates and supervises the financial aids and new agricultural projects with them. From the researcher”s observations, urgent action is required to increase the relations, coordination and confidences between the Ministry of Agriculture and Hebron’s farmers. From the data collected, field observations and literature review, the agricultural sector faces serious challenges and problems which are:

a. Poor resources related to water used for irrigation, and in most places there are temporary water springs (3-4 months only). In summer, there is a shortage of water\textsuperscript{1}.

b. Availability of good agricultural land as the largest built up area is located above the best agricultural lands in Hebron and the building is still continuing.

c. Absent of cheap labor and height fuel price.

d. Obstacles in exporting fresh products abroad because of Israeli security requirements.

e. Few agricultural industries in Hebron that do not cover the demands.

f. The agricultural sector is still not on top priorities of the Palestinian Authority.

g. The absence of laws and regulations to save/protect farmers and give them the required support..

h. A high compaction between the Israeli and Palestinian products.

i. The number of trees is reduced from about 70,000 acres in early 2000 to about 43,000 acres in 2006/2007. (PARC/Arab- Jerusalem, 2008).

\textsuperscript{1} See more about water in Hebron in Chapter 8.
j. The agricultural areas in Hebron are suffering from the absence of developing and protection plans, and thus lands and agricultural activities have decreased as land is simply abandoned because its owners wait for offers from developers, NGOs and donors.

According to BCPS statistics of 2007 & 2008 and Ministry of Agricultural, the agricultural sector is one of the major contributors to the Palestinian exports as its contribution to total exports is around 13% with a total value of $102 million for 2007/2008 seasons. In general, the Ministry of agriculture organizes and manages the agricultural sector in Palestine and it has branches all over Palestine. According 2007 statistics, the number of the agricultural institutions was 1308 and the number of individuals working in them was 20921. (Hebron Agricultural Department- Internal Data, 2009).

There are no detailed data of all agricultural profile elements in Hebron, whereas the data of the agricultural socio-economic structure including land tenure system and size of holdings are scarce. The available data are restricted to tenure system provided by NGO's and show a high level of farm ownership of about 55% in Hebron. "Beside fruits and vegetables in Hebron, there are 16,500 heads of cattle and over 780,000 sheep and goats" (PCBS, 2009). The village farmers in Hebron depend mainly on this kind of work for their income. Wherever you go in Hebron, you will find sheep and goats where the people live. Developing the production of the animals’ sector (e.g. cows, sheep and goats) is of great significance to increasing the people’s income and improving their life styles. Furthermore, any new project in this sector will be

1 "Agriculture is the largest sector of the Palestinian economy, generating over 22% of the Gross Domestic Product of the West Bank and Gaza and providing employment to over 15% of the population. Land and water constitute the foundation for agricultural development which is the key factor in food security. Thus, it is imperative at this point to look at the status of the agricultural sector in Palestine and explore the potential of agricultural growth and food security". (Arij-Isaac, P2)
successful because the people are farmers by nature, and the demand for animals’ products in Hebron (e.g. eggs, meal and milk) is significantly high.

**Picture (5.20): A Palestinian Farmer Crossing the Gate Of the Separation Barrier with his Herd of Sheep (Source: LRC, 2009).**

The agricultural sector in Hebron is still an important part of land use and landscape for the whole urban fabric. In order to face the economical crises and political challenges, any nation with enough food products will have its own decisions, however; over-reliance on agricultural imports can lead to food insecurity during political or market instabilities. Thus, protecting agriculture in Hebron should be taken into consideration and there should be more detailed studies, analysis and future sustainable development plans as well as national priority and policies.¹

¹ The urban planning conflicts between agricultural land and residential sites are of the major land use conflicts. In sustainable development plans, farmers need to be sure that their investment in agriculture will not be affected by land use conflicts, otherwise it will be difficult to carry out new agricultural projects near residential areas which means failure of this sector.
The current condition shows that protecting and improving Hebron’s major agricultural areas from the side of Ministry of Agriculture are still not established because of the lack of plans and funds. NGOs play major roles in developing the agricultural land in Hebron through small projects funded by foreign donors and the NGOs funds. Even small projects such as home garden, livestock production, plant production irrigations …etc (MoA, 2009) are also supervised. However, many small agricultural projects are still in progress as shown in map (5.10).


Finally, regarding sales and markets, the numbers indicate that the fresh vegetable exports to Jordan are declining dramatically, while exports to Israel are increasing. There are strong relations between the Palestinian and Israeli agricultural activities and

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1 Most of these projects are funded and supervised by NGOs like Agricultural Relief and by foreign donors like UNDP, USAID, EU and GTZ.
sales/markets. Producers of fruits coming from Israel such as tomatoes, potatoes, and onion’s producers, packers and wholesalers appear to have very good links in the West Bank’s as well as Hebron’s wholesale markets. Nevertheless, for some kinds of vegetables and fruits (e.g. apples, mangoes, potatoes, onions, milk, red meat and fish), Hebron totally depends on Israeli supplies and reverse. Meanwhile, the West Bank and Hebron supply the Israeli market with certain crops (e.g. cucumber, zucchini, eggplant, green pepper, guavas …etc). "The total value of agricultural products” changes between Hebron and Israel 2007/2008 for Hebron was around $ 389 million divided as 54% for plant production, and 46% for animal production" (PCBS-Agricultural Statistics, 2009). The future sustainable plan should improve the agricultural market despite the higher costs of labor and transportation. Moreover, scarcity of water causes the export of traditional agricultural products less competitive.

5.5.2.1 Agricultural Sustainable Development Plan

The main aim of Hebron District sustainable development Agricultural Plan is protecting Hebron’s prime and good agricultural lands as well as improving the whole sector’s economical sharing. It also aims at the following:

a. Encouraging farmers and decision makers to adopt new and modern Palestinian agricultural law.

b. Increasing Hebron’s food security and kinds of agricultural products.

c. Putting the necessary polices for using all new technologies, machines, reducing agricultural water use and improving water quality for agriculture.

d. Supporting and accommodating urban agriculture, integrating it with the district’s main land use and saving the remaining agricultural land from new urban expansion.

e. Improving the projects and researches dealing with the conservation of water.

f. Improving the affordability of farming within Hebron District so that farmers can continue to farm

g. Creating new job opportunities at the agricultural field and opening new markets the for Palestinian products.

h. Encouraging high value-added economic and environmental sustainable agricultural production such as organic farming.

Hebron’s agricultural plan will focus on supporting agricultural activities and communities. Effective agricultural production requires a combination of fertile soils, climate, and topography. In Hebron, this combination is present on lands located primarily in the north and west while less fertile areas are located in the south and the west of Hebron’s municipal boundaries. Rainfall is the main factor affecting the agricultural productivity and so Hebron’s agricultural plan recommends identifying the prime agricultural areas based on rainfall and soil fertility and preventing using this land for non-agricultural. The following map shows the classification of agricultural areas in Hebron, and hence there are three main types Rangeland, Cropland and urban agricultural land.
Year by year the agricultural sector becomes more important and so more researches and development plans are required to meet the increasing demands of food, mainly in countries facing food shortage and high increase in population. A large part of the

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1 This map is roughly a draft map only. The author takes the idea from Amman metropolitan agricultural studies and he develops a similar drawing for Hebron for research purposes depending on Palestinian Atlas conducted by PCBS,(2008) , and the assistance from Eng. Zayed Rahma from the agricultural department in Dora City, 2009,and Land research Center NGO.

2 In 2008, the Department of Economics and Social Affairs Division for Sustainable Development-United Nation published a report "TRENDS IN SUSTAINABLE DEVELOPMENT Agriculture, rural
agricultural lands in Hebron are located in desert areas such as Yatta and Baneaam that vary in their productivity. Such areas require more water for irrigation, and thus consuming more water. Hence, serious efforts reduce water consumption in agricultural areas are needed. The agricultural plan will restrict/limit residential growth in agricultural areas by setting new regulations for minimum parcel sizes and by establishing clear and known boundaries for urban expansion in the agricultural lands. Finally, to ensure a sustainable use of agricultural resources and a productive agricultural industry, the agriculture sustainable development plan should also address the reinforcement of urban agriculture and as well as linking the plan with other development sectors. The following specific policies and recommendations summarize Hebron’s agricultural plan:

a. Specific and modern Palestinian agricultural laws and regulations are required to organize farming activities and encourage agricultural investment.

b. According to Eng. Masser, Mahmmed in Hebron University –Faculty of Agriculture, “The agricultural lands that are rained and have high-quality soil are suitable for Croplands uses, while the Hebron’s desert areas mainly in the east are used for agricultural factories, plastic house farming as well as cow and cheep farms.

c. The Ministry of Agriculture is recommended to improve the current agricultural policy and regulatory framework (e.g. using safe Pesticide, increasing farming projects funds and the coordination with other organizations.

d. integrating the field natural crops and agricultural areas with urban land use plans such as use houses” gardens and streets” landscape as a part of palm, olive trees and other farms.

The report discusses many issues of agricultural research and development in the global scale. It has useful points that the reader can refer to for more information in this regard.

1 The author ends up with this recommendation according to the study surveys and data collection as well as the Ministry of Agriculture’s publications and the Report from the capital of Jordan( 2007), (Metropolitan Amman) was very useful to get the proper recommendations, hence, Amman and Hebron have similar the physical and social characteristics.
e. developing and protecting the forests and natural green lands in valleys, steep slopes, and other significant physical features form the urban expansion.

f. encouraging agricultural-related uses in rangeland areas (as shown in map 5:11), including livestock grazing, agricultural processing, water harvesting, agricultural-related research, and institutional and other uses) as defined by the Ministry of Agriculture.

![Picture (5:22): Wheat and Barley Crops in West-Hebron (Source: Researcher, 2009)](image)

g. Enhancing Hebron farmers’ awareness of the agricultural economic development by training courses, media, meeting and regular visits. This kind of activities will provide farmers with greater opportunities to obtain additional sources of income.

d. It is highly recommended to start immediate discussions and coordination between all governmental organizations and public/private to put the main agricultural sustainable development plan that matches the local requirements and provides a good chance for export and new markets.

e. Encouraging olive oil production, better bottling and packing and a more complex process of marketing.
5.5.3 Industrial Sector

"Sustained industrial development has been a major contributor to economic growth and poverty reduction over the past half century, notably in Asia. Industrializing countries have benefited from liberalization of markets for industrial goods, improvements in telecommunications, and reduced transportation costs. Not all countries have shared in those benefits, however: limited supplies of human capital, poor infrastructure, weak government institutions and unfavorable investment climates have been key constraints"(UN-Industrial Development, 2006.P8)

The industrial sector plays a major role in Palestine’s economy, but this sector faced many obstacles related to land availability, laws, plans, infrastructure and proper industrial site in addition to instability in the political situation. In Hebron, there are five industrial sites (areas) and the types of industries in these areas are light and construction. However, many of them are polluted and no environmental impact assessment was conducted before they were established\(^1\). The municipalities and local authorities have approved of an industrial zone within the cities’ master plans. These zones have problems regarding the mixed use in some cases. Half of their industries are located within residential neighborhoods. In 1999, a new body was set up in Palestine a governmental organization called Palestinian Federation of Industries (PFI)

“The PFI was set up in 1999 to facilitate industrial development as the basis for Palestinian economic performance. It seeks to achieve this objective by educating, advocating, and communicating the value of a developed, socially-responsible and globally competitive industry. The PFI represents a wide range of industrial sectors: stone and marble; construction; metal and engineering; pharmaceutical; food and beverages; textile and leather; plastic and rubber; wood and furniture; paper, printing and packaging; chemical; and traditional industries."(PIPA, 2009.P35)

As has been shown through the visits to industrial areas inside Hebron and its surrounding villages such as Emrash, Beti ola and Sikka which suffer from the existing

\(^1\) See more on urban environment chapter (6)
cutter stones at the villages” entrance, most of the industrial sites do not have the basic services like water, sanitation, electricity, means of telecommunication and the roads. The industrial sector in Hebron faced a negative impact due to restrictions on movement including closure and curfews as well as the unwieldy legal and regulatory infrastructure and the lack of means to access the appropriate modern technology. The following are the specific sustainable development problems facing the Palestinian industrial sector:

a. The Palestinian Authority is still applying the same Jordanian urban industries” laws and regulations which need more development and discussion to match the local conditions.

b. The types of industries in the Hebron are mainly light industries, but many of them are polluted.

c. A high percentage of industries are located within residential and built up areas.

d. According to the owners of industries, their industries are facing problems in infrastructure, services, land and site, economics, technology and marketing.

e. The absence of the proper planning of industries” location and shortage of the available land and the high prices of lands within the approved sites..

f. The largest industry in Hebron is the stone cutting industry\(^1\), which still suffers from lack of government”s support, development researches, export, opening new markets and high compotation ...etc.

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\(^1\) "The Israeli policy was to encourage quarrying and stone cutting in the West Bank, in essence exploiting the resources of the West Bank, while preserving similar resources in Israel itself. Thus, over the last three decades, the quarrying of stones has not been controlled, and the resources have been exploited quickly. Nowadays, there is a boom in new housing construction on the West Bank and this trend is set to continue. The rapid use of these resources is leaving great scars on the landscape"(Humadi, 2008.96).
This Factory Proved Limestone to Building Elevations and landscape inside and outside Hebron.
Political and economical problems are important and so marketing, infrastructure, labor; technical and building are related to these problems. These problems should also be taken into consideration in choosing a location. Furthermore, the environmental issues should be also an important element in these criteria. The Palestinian Authority set up the Palestinian Industrial Estates and Free Zones Authority (PIEFZA)² an the objectives and responsibilities of the this authority area. Encouraging investments in the Palestinian Industrial Zones, b. Preparing, promoting and supervising the development of all the Palestinian Industrial estates and free zones, c. Providing investors with the needed services for a successful business operation, and establishing good-quality infrastructure needed to support new investment activities, d. offering a one-stop-shop to facilitate investment procedures and minimize bureaucratic requirements"( PIEFZA –wwebiste, 2010).

Hebron has hundreds of industries and thousands of people working in this sector. any development plan should discuss, analyze and study this sector from all sides (e.g. kind of industry, factories sizes, location, infrastructure services, laws, production trades...etc). However, in this research”s main figures, problems and economical conditions of the industrial sector are presented and the linked with the general sustainable development plan. For more details and implemented plans, each title and line in this chapter need more academic, governmental and consulting works. The environmental impact and pollution effects resulted from these industries are discussed in chapter six.

¹ Stone cutting Industry and quarrying cover less than 1.5 percent of the total Hebron areas that quarry and supply of building materials such as aggregates, sands, and limestone and are located in the eastern part of Hebron. There are also many former quarry sites within the existing urban area, and some of these sites are being rehabilitated and the others are considered hazardous sites.

² The reader can download the Law of Palestinian Industrial Estates and Industrial Free Zone Authority \ English version via link (http://www.piefza.org/Law-en.htm)
5.5.3.1 Hebron District Industrial Sustainable Development Plan

Hebron’s industry sustainable development plan is a part of the economical and environmental development plan and all of the below recommendations are the output of study area observations, data collection, meeting with local people and planners as well as the literature review as will be shown. In Palestine, the Ministry of national economy is the governmental organization responsible for organizing and developing the industrial sector. The ministry has different laws, manual and studies, but until now most of ministry’s activities are aid work and emergency plans. Moreover, the recent political conflict between two Palestinian parties created new risks to ministry’s works according to Hebron’s Office Director 2009. In Palestine many other organizations also have direct or indirect relations with the industrial sector. The below industry

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1 Hebron is one of the largest city manufacturing and producing Choices. According to the Ministry of Economy and Trade, there are 11 factories which employ more than 5800 workers in Hebron. The other main kinds of manufacturing are construction, food factories and furniture.

2 The reader can find more information about the Palestinian Ministry of National Economy in the ministry’s website (www.met.gov.ps)

3 The main Palestinian economical/industrial establishments and organizations are (a. Ministry of National Economy, b. Palestinian Industrial Estates and Free Zones Authority (PIEFZA), c. Palestinian
sustainable development plan is expected to be a reference and a benchmark for these organizations, but before planning, their general objectives for industry sustainable development plans are:

a. Encouraging the national industry and making it more competitive.
b. Reducing Air, waste and soil pollution because of factories hazard wastes.
c. Selecting the best locations for industrial areas and the new industrial expansion.
d. Checking the policies and rules required to improve the industrial sector and and means of creating job opportunities and level at this sector.
e. Rehabilitating old quarries especially for inclusion in the open space system, and protecting quarries with cultural heritage value including old city quarry sites.
f. Linking the industrial sector with other urban events like environment, transportation system, infrastructure…etc.
g. Reducing dependence on donors’ aids to support the Palestinian industrial and economical sector "The 2009 budget was based on optimistic assumptions of economic growth and high levels of donor support, which may not be attained. Thus, it is equally important that the PA maintain its expenditures within limits that can be supported by available financial resources."(world bank, 2009.P39)
h. Protecting resource extraction land and its associated employment base, ensuring sustainable practices for the extraction of mineral resources and quarrying.

The researcher divides the industrial sustainable development plan into two categories:

**First: Improving the Existing Industrial Areas**

As mentioned above, there are five industrial location/areas in Hebron which cannot be neglected according to engineers of Hebron, Dora and Traqumiah municipalities (2008). It is hard to transform these industrial areas to other...
locations\(^1\), hence, no law supports that and the industries’ owner will not accept it. However, the following academic policies and recommendations could be useful to make them part of Hebron’s sustainable development plan:

a. Hebron’s municipality engineers\(^2\) (2008) as well as local people (2008, 2009) said "The whole Industrial sector in Palestine need new, sufficient and workable urban and organizing law, especially for existing factories which were established 50 years ago by old British and Jordanian laws. The people who live closely to these areas are suffering from dust, pollution and 24-hour trucks and traffic noise, and there is no law or governmental action taken to stop such kind of disturbance and risk".

b. Around 71% of the factories’ owners agreed that when several factories are located in one area, they can serve as complementary and supporting industries and infrastructure services could be improved.

c. The Palestinian government and public organizations should give advice the factories’ owner about the best and newest ways of development, ways of reducing environmental hazards like (pollution’s, congestion, noise and disturbance by moving trucks and small workshops from residential areas). The existing sites have a severe problem regarding accessibility because they are located inside dense urban areas. Other main facts are the raw material and natural resources related to industry. The factories cannot be addressed inside the built-up areas\(^3\).

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\(^1\) Modifying the conditions within the existing sites does not mean to bulldoze down what had been built. The existing sites are generally of low standard, but new arrangements development could improve them and make them acceptable to a community and its environment in better working conditions for employees. This can be achieved with new planning and design of these sites.

\(^2\) See the questionnaire Questions and the list of interviews.

\(^3\) As the road network is the only transportation means within the West Bank itself, the distance from these main roads will be the starting point. The site should have access to these roads. The shorter the distance from the main road, the site will be because more effective because of labor, material and public accessibility to the site and because of economic factors. Driving through these main roads and looking at the topography will show all the possible sites. All the sites within a distance of five kilometers on each site of the main road and have direct access to it will be examined.


d. municipalities are recommended to provide all industrial areas” employees with their daily requirements such as restaurants, clinics, transportation …etc.

a. environmental Impact assessment studies are required for the existing factories in order to identify health and pollution risks in each factory¹. Moreover, Hebron”s cutting stone industries should be protected to be part of Hebron”s cultural heritage system. The existing sites have no identity with no management and no control. Because of the environmental impact of existing sites on residential neighborhoods, these sites should be re-planned with strong regulations regarding the types of activities that they can accommodate.

e. It is highly recommended to fund industries development researches on the kind of industry required and suitable for Hebron, local needs, in which market the products could be more competitive. Universities, public industry/trades organizations and NGOs could do this job.

Second: The Industrial Area Expansion and new Locations

Based on the fact that the existing sites are unsuitable and will not be big enough for promising future industries, official thinking of alternatives started through creating new industrial areas of expansion. In the existing industrial areas, the situation of industry and industrial sites shows the importance of having new sites with proper planning, good services and infrastructure. This will cause less harm to the environment and population. These sites should have special arrangements and management to incubate big and small industries with their related services and institutions for industrial development. It is important to establish new industrial areas in Hebron. In this part, the existing industrial areas” expansion and the new industrial areas sustainable development policies and recommendations will be introduced as shown in the following map (5:12) and points:

¹ See more about the environment in chapter six. However, most recently in 2008, 2009 and 2010, many factories in Hebron Industrial Areas (e.g. Al Ameer concrete factory) have the Environment ISO certification 14001 &14002, but these efforts were done by the owners” personal effort mainly for trading/media purposes and are hoped to be implemented in all factories.
a. It is important to manage resource extraction in such a way that provides long-term prosperity while minimizing harmful environmental and social impacts.

b. It is hoped that the future of Palestine will be better than it was in the past. This will be the scenario planned in this research for new larger scale industries which will come to occupy the places when the occupation leaves. Within existing sites there is no place for such industries.

c. New industries will be developed and expanded. Employees and workers within industry have the right to work in a healthy and acceptable environment. The new sites should take into account better working condition besides the aim of enhanced production capacities.

d. Expanding the existing sites within the same location with no regulations will enlarge the problem for neighboring residents and the urban environment.

e. The Ministry of National Economy along with Environment Authority and municipalities are recommended to put specific technical manuals and criteria regarding the selection and evaluation of the best new industrial areas/sites. Only the sites that have good accessibility and acceptable inclination will be evaluated and given establishment permits. The technical and engineering criteria like (land availability, land ownership, land prices, land geometric shape, land geology and land topography, accessibility of the main roads, power, water, communication, Sewage network, protected area, air pollution and noise pollution).

f. The map (5: 12) below shows Hebron’s existing industrial areas, the recommended expansion and the new industrial areas. After getting feedback and consulting/advice from Hebron municipalities’ engineers and local planners, Ministry of National Economy –Hebron Office, heads of village councils, and Environment Authority. The researcher proposed three new industrial areas in Yatta, Dora and south of Dahriya. The reasons behind these areas have enough spaces, and are close to the main roads, beside land natures and populating employees centers (See the criteria in the above point) which also expands
Hebron’s industrial area only. Hence, the areas are crowded and close to main city’s center. This summary of recommendations requires more and more investigation, discussions and consulting designs, but of course the coming research and decision makers can be used for Hebron industrial sustainable development plan.

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1 By Locating jobs near people’s homes, Hebron’s communities will become less energy-intensive and more human focused with more creative and more sustainable
The above map also shows the location of job opportunities for laborers and skilled people job (Employment area). The employment planning has to be responsive to the changing economic and physical requirements of investors, workers, government agencies, and other stakeholders. Employment areas need to be integrated with transit and transportation systems with other types of land uses and existing infrastructure. Employment planning is recommended to match Palestinian economical national agenda in order to meet current employment demands. The existing industrial /employment areas consist of formal and informal residential, industrial, commercial and institutional activities, and in order to quantify industrial land supply across Hebron, vacant lands available in employment areas need to be assessed.

**Finally**, the main cities in Hebron should have services and workshops for the daily needs of the population such as car maintenance garages. These will be called municipal or local industrial zones and will form part of the zoning plan within municipality boundaries. In addition, the villages surrounding main cities are recommended to have these services according to different criteria such as the population size and the distance to the closest service site.

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1 This Plan a draft concept is drawn by author to clarify the plan idea only. It is the basis for further studies and consulting analysis to check more the physical condition at the area besides the connection with transpiration system and main services…etc.
5.5.4 The Impact and Comparing of Hebron’s’ Economic Situation to that of the West Bank

The following figures show the relative importance of Hebron in terms of its share in the total number of establishments to the West Bank by the type of ownership of establishment. According to these figures, Hebron represents a focal point for all kinds of establishments including private, NGOs, International and public institutions which in turn reflects the critical economic role of the Hebron in the Palestinian economy ( economical questionnaires, Department of EconomicS in Hebron, 2008 & PCBS, 2009)

Fig (5.13): The Distribution of Private Establishments In Hebron to that in WB(Source: Drawing by Researcher ,2009).
As for the relative share of the establishments in the Hebron to those in the West Bank, it can be seen that Hebron hosts about 23% of the construction establishments and 20% of the real estate and transportation establishments.
Fig (5.16): The Share of Establishments in Hebron to that the West Bank in 2007, (Source: Drawing by Researcher, 2009)

Picture (5.26): Hebron Overview Shows the Nature of Life Conditions, Built up Areas, Cars and Topographic Characters (Source: Researcher, 2008)
Employed Personnel:

The employed people in Hebron have higher educational degrees compared to those in the West Bank. This might be the result of the fact that Palestinian and international NGOs, organizations, missions as well as the Palestinian Authority’s Ministries and institutions require relatively higher educated employees; and this phenomenon seems to hold over time.

![Figure (5.17): The Distribution of Employed People from the West Bank and Hebron by Years of Schooling in 2007/2008(Source: Drawing by Researcher, 2009)](image)

The following figure shows that the major employer in Hebron is the services sector (e.g. commerce, hotels, transportation and public sector). It counts for 59% of employment, while 19% of workers are employed in the manufacturing sector.

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1 The municipalities in Palestine should make sure that the future demand is met through periodic employment land reviews. The aim of these reviews is to identify the current available industrial expansion areas and additional employment numbers that would be required to meet demand. Moreover, the assessments should be conducted every three-five years.
Figure (5.18): The Distribution of those Employed by the Economic Activity in Hebron District During 2007 (Source: PCBS unpublished data, 2008).

The following figure shows that only 35% of those employed occupy jobs that require high skills (professional and senior legislators) while the rest are mostly in jobs that do not require high skills. "Education is the main entrance to achieve a complete development, assuming that investment in human being is the resource of the real wealth to the society, and the good learning is the active instrument to overcome the social and economical problems. This is what we look for through participation to make studies that help in linking the learning process with labor market. There is a gap between learning outcomes and labor market according to the primary indications of many studies and researches; this gap led to a high rate of unemployment and incoherence with labor market needs especially to new sectors that resulted from the reconstruction of the labor market, besides inequality of unemployment rate among the levels of learning" (AL Kafri, 2005.P2).
5.5.5 Business and Investment Environment in the Hebron District

"The Palestinian economy is, and has been for quite a long time, operating below potential. Once an improvement in the political situation takes place promising peace and stability, the economy is expected to move rapidly ahead to regain ground lost in the last three decades. At such a time, it is expected that every sector will grow. This is not just a hopeful proposition, but a realistic expectation given the way the economy performed during the periods of relative calm in the 1990s. Economic activities in every sector responded so rapidly to the partial improvement in the security situation during this period that GDP was able to grow at rates of over 10 percent. In addition to investment opportunities offered by growth in the domestic economy, the Palestinian economy offers foreign investors’ access to major markets with which it has free trade agreements" (MoNE & PIC, 2008.P79).

Several structured interviews were conducted with key figures representing the stakeholders, with all Hebron’s 13 Municipalities and all the 4-Joint service councils, local councils for many villages, Electricity Company, Hebron’s Water Authority, Engineers’ Association, PICDAR, Ministry of Local Government, Ministry of Planning & International Cooperation and Hebron’s Chamber of Commerce. A check list was prepared before each individual meeting to evaluate the targeted issues, and brainstorming was used during the meetings to analyze and interpret the collected data and therefore to generalize the relevant conclusions and recommendations. The following sections assess the current situation in Hebron regarding the factors encouraging and discouraging the main investments. These factors were identified as a result of the extensive structured meetings conducted with different related parties.

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1 See the interviews’ list in the reference chapter, 10.
2 Encouraging factories need more improvement and development and discouraging factors need urgent actions to find better sustainable development solutions and solving alternatives. However, both encouraging and discouraging factors need more discussion and academic researches, as well as governmental development plans.
5.5.5.1 Investment Encouraging Factors:

a. The land availability and big open area compared to that of the West Bank give better opportunity to establish big projects (i.e. big industries and agricultural areas).

b. Hebron has a massive labor force and qualified academic and skilled employees in most of the industrial, agricultural and IT sectors.

c. According to the owners of factories, companies and local people in general, the quality of services provided by the municipalities is good enough in terms of completion time, coverage, and variety. The services provided by the municipalities are restricted to cleanliness and licensing of new buildings, handicrafts and vocations.

d. Quality of services provided by public companies such as Electricity and Water companies are good as it takes less than two weeks to connect electricity and three weeks to connect water to new projects.

e. In Hebron, there are hundreds of factories, workshops and companies. Moreover, the five main industrial zones give the businessmen a suitable environment to start their own projects in Hebron.

f. Hebron’s most of logistics requirements for new developers are materials availability, transportation and travelling companies, hotels and restaurants.

B. Investment Discouraging Factors:

a. Municipalities usually issue building licenses in new originated areas long before deciding road levels and even before connecting these areas with water and Electricity services. This usually results in wasting the time and money of investors.

b. More than half of the available land in Hebron is classified as C grade land which restrains land utilization in terms of new projects and building licensing.

c. The poor coordination between Hebron’s organizations, interested municipalities and local councils regarding planning and origination of new
residential/industrial areas reduces the service quality and increases service costs.

a. The absence of transportation and infrastructure plans or development, mainly for industrial areas, and the existence of 21 random dumpsites affect the investment in the Hebron badly.

d. In summer, the water available is very little because priority is given to household-sector which has a bad impact on the whole industrial process.

e. Randomness (unplanned) of investment is one of the serious problems that face investments in Hebron. Investors use to imitate each other, and so you can find three or four big supermarkets on a distance of less than 500m in Hebron’s cities.

5.5.6 Conclusion and Economical / Employment Sustainable Development Policies and Recommendations

The economy of Hebron has a potential challenge and good investment opportunities. Hebron is the largest district in the West Bank with the largest number of population and labor forces, and the best environment for investments. Nevertheless, it needs more governmental support and management as well as more development for the current economical regulations. Changes in Hebron’s economy are reflected in the landscape and building environment of Hebron itself. Previously, the district had quarry sites and associated rock-cutting industry which originally built the old historical cities and downtowns. At that time, the quarry sites served as employment areas (i.e., locations where people worked). They were situated close to residential areas. The same quarry areas still serve as employment areas for housing, industrial, institutional and commercial uses mainly in areas like South Hebron city, Yatta, and Baanneam. The

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1 These policies and recommendations are the general ones. The reader can find more detailed recommendations in above sections. The comprehensive plan will be presented in chapter 9.

2 As per BCBS, serving and expectation (2008)," Hebron’s employment Plan needs to accommodate around 120,000 jobs by 2025, creating around 60,000 new job opportunities. Hence, Hebron’s population in same year will be almost 850,000 people".
political conditions in area (C) increase the challenges to economical development and employment sustainable plans, and hence, new projects need an Israeli permission in Area (C), and most of the projects are rejected or tough requirements are imposed. The following policies and recommendations could help decision makers, planers and researchers set a better economical sustainable development plan in Hebron.

a. The economical development law is recommended to develop and adopt sustainable development in the law content and sub-laws are also required such as the tax law, which is needed to encourage and protect investments. Such kind of law will encourage the expatriates of the Hebron to come and invest there.

b. Ministry of local Government and municipalities are recommended to coordinate with public services” companies (e.g. transportation, water, electricity …etc.) in urban and economical development planning phases, especially when planning for new residential, commercial, or industrial areas.

c. Hebron”s municipalities are recommended to increase coordination with the Ministry of Industry and Trade, Palestine Investment Board and Chamber of Industry in order to attract more investments to Hebron and to facilitate the demands of community investment.

d. The municipalities and local councils are recommended to get permission from Water and Electricity companies before issuing building permits.

e. The prices and bills of infrastructure services need more discussion and new operation policies. It is also recommended to find alternatives for electricity such as connecting the Palestinian territories with the Jordanian or Egyptian network. This will certainly need to be negotiated with the Israelis. Otherwise, new alternatives of electricity should be found such as renewable energy from the wind and the sun.

f. Because Hebron has the potential for establishing a large central industrial zone, it is recommended to establish two or three big industrial areas in the eastern and southern parts. The municipalities are recommended to specify the industrial/employment areas to be used only for heavy industries. Furthermore, the
design of the future planned site design should meet the requirements of the Ministry of Environment and the Ministry of Industry and National trades.

g. Immediate development of the transportation system and traffic network is required to deal with the high traffic density in the cities’ centers.

h. Hebron has orgiastic potentiality and therefore it is recommended to encourage investors to invest more in this promising sector.

i. Assigning specialized technical and professional committees under the supervision of Hebron’s governorate which will coordinate with all related parties to design the necessary economical development plans.

j. New laws and discussions are required to improve and protect the employment sector within Hebron (e.g. providing better salaries and good accommodations inside the industrial and commercial center, besides adopting new research and development projects in this regard). The employment policies\(^1\), in the core of sustainable development, should also support urban development which attracts value-added industry and employees by reducing commuting times and offering reliable transportation options.

\(^1\) The NGOs –MAS prepared an employment plan for the whole Palestine. The plan deals with administrative aspects rather than sustainable development aspect. The author refers to this plan and what he finds sustainable to this study, he has taken with necessary modification and discussion.
Chapter Six
Hebron’s Urban Environment, Content, Polices and Challenges

6.1 Introduction and General Background
6.2 Review of the Literature
6.3 Institutional Responsibilities
6.4 Palestinian Environment Legislation, Policy and Planning
6.5 Main Findings and Sustainable Improvement Tools and Polices
6.6 Green Areas, Parks and Open Spaces
6.1 Introduction

"The most critical urban environmental needs by people in developing countries include a- Provision of healthful housing and other built environments (e.g. schools, workplaces...etc.), b-. Access to environmental infrastructure systems and services (e.g. water supply, sewerage, solid waste management, storm drainage, urban transport,...etc.), c- Availability of open spaces in terms of properly designed community parks and other green areas, d-. Environmental surveillance and cleaning services for public buildings and outdoor areas". (A. Williams, 2000.P7)

The urban environmental profile addresses the issues related to the major components of the environment at both the national and local levels. It also provides useful data for starting projects to rehabilitate environmentally stressed areas and to prevent pollution and future deterioration. This chapter will focus on the primary environment’s safety, solid waste, water resources, air and soil pollution, wastewater...etc, and their link to sustainable development and the socio-economic impact. Israel has ignored the environmental issues in the West Bank since 1967 occupation. It was only after Oslo Agreement that the discussion about protection of environment and natural resources started. Unfortunately, after seventeen years since the start of the peace process, Palestinians still do not have sovereignty over their environment and sustainable natural resources which are an essential prerequisite for sound environmental management. However, in 1999 the President Yasser Arafat issued the Palestinian environmental law which has been the reference of all environmental activities in Palestine since then\(^1\). The new Palestinian environmental authority became effectively the Ministry of Environmental Affairs and finally the environmental quality authority was set up by a presidential decree in 2002 to inherit Ministry of Environmental Affairs with the same powers and mandate. "The Palestinian legislative council approved of the first Palestinian Environmental Law\(^2\), which was signed in December 1999 and published in the official gazette in March 2000. Recently and since 2004, the Ministry of Local Government set up a new department for

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\(^1\) See more about Palestinian environmental law in chapter six sections

environment and solid waste management to coordinate the local authorities” effort, mainly in the field of solid waste collection"(See Al-Hamaidi, 2005.P-11-14). The expansion of residential and urban development in the Palestinian areas raises significant environmental concerns, and further intensive development will place additional pressure on the region's water resources, infrastructure and biodiversity. Current policy and programs tend to focus on sustainable development within Palestine and in the Palestinian areas; there is a need for sustainable development that integrates natural resource management principles with planning and development at the regional level. The main objective for Palestine's environment will be public knowledge, awareness, support for environmental issues¹ and their expansion in the minds of all Palestinians regardless of sex, level of education, and place of residence…etc.

This chapter aims at assessing urban environment and pollution which are key to developing sustainable cities and contribute to social and economic development without affecting the environment negatively. It is well known that the environmental issues are important for urban planning and are directly related with population growth, development, residential areas, manufacturing, industry, commercial aspects, and for both public and private services.

¹ Environmental issues are ( solid and liquid waste management, water consumption and quality, air pollution, noise pollution, green areas, parks and open places and also the regulation policy related to the urban environment and Pollution …etc).
6.2 Review of Related Literature

The environmental sector is the most sensitive sector affected by sustainable development. In the West Bank, including Hebron, there are many organizations working directly or indirectly on environment issues. However, many studies about the environment and urban environment in the West Bank were conducted such as those conducted at An-Najah University about Nablus’ solid waste management as well as studies of the Urban Environment conducted for metropolitan Ramallah, Al Berih and Betonia and further the environmental impact assessment for landfills in Ramallah.

In Hebron, the researcher himself has written his master thesis entitled “Good Planning for Landfill Locations, Hebron as a Case Study”. In his study, the researcher discusses many urban environment issues, and ends up with the best location for central landfill in Hebron. However, most recently Hebron Municipality, along with other municipalities in Hebron and Joint Service Councils, has prepared a consulting study for the environmental impact of the central landfill in Hebron. The researcher used the following studies in this research desk study on the Environment in the Occupied Palestinian Territories, prepared by the United Nations Environment Program (UNEP)/ Ramallah, 2003. According to the study’s report, "The aim of this desk study was to outline the state of the environment and identify major areas of environmental damage requiring urgent attention. It was based on a review of available, relevant studies and interviews with officials and experts. It lists priorities and proposes recommendations to solve environmental problems. The Desk Study addresses environmental issues identified as the most vital for the environment in the region" (UNEP, 2003.P6). The 194-page study discussed the West Bank and Gaza’s urgent environment issues like solid waste, wastewater and pollution and was used by different donors and Palestinian ministers to see the required environmental projects and the kind of activities needed to avoid more pollution and to save the environment. However, the study does not discuss the sustainable environment issues
as it only introduced the actual environmental conditions and what the different parties can do about them.

a. Al-Hamaedy, Solid Waste Management in the West bank, 2004. The study discussed the solid waste management system in the West Bank and the local authorities' responsibilities. It also discussed the solid waste generation, components and recycling opportunities. It shows solid waste condition and how it could be managed without causing any harm the environment. Hereby, the planner could benefit from this study in future sustainable development if is modified and integrated with other urban environmental sectors.

b. Palestine”s Environmental strategy plan, Ministry of Planning and Environment Authority, third draft, October. Ramallha, Palestine, 2005. The plan was prepared during very bad political conditions between the Israelis and Palestinian (Second Intifada). It was done for a short-term purpose only. The plan discusses the solid waste, waste water, air pollution and environmental public awareness conditions in Palestine. It includes a list of required environmental projects and environment national agenda. At present and according to environment office director (Hebron) (2010), "the plan needs review and total development, hence, five years passed and a lot of things changed "

c. A feasibility study was conducted for investigating the selected environmental hot spots in the West Bank and in Gaza done. The study was funded by Luxembourg and carried by SCHROEDER & ASSOCIÉS Consulting Engineers in cooperation with the Palestinian Environmental Authority in 1998. “The objective of study was to prepare all the information and justifications necessary for the appraisal of the solid waste management environmental projects hot spots component. The study covers the technical and economic feasibility, as well as preliminary environmental impact and social assessments, for each of these investments.” (SWEMP-Program,1998.P)
The above literature review is the main\(^1\), but there are several environmental studies conducted in the West Bank regarding solid waste, wastewater, soil and air pollution, recycling, biodiversity, and environmental impact assessment. These studies are conducted by NGOs, or Universities as research studies or by international organizations like UNEP. However, there are no environment studies conducted about the Sustainable Urban Environment in Hebron up to the time this research was conducted. In this part the author tries to address this concept by using data and information for the previously mentioned studies and from other references as will be shown in the following Sub-chapters.

\(^1\) Additional to the above, the list below include part of environmental literature review:
6.3 Institutional Responsibilities

6.3.1 Local Authorities

As discussed in chapter three above and according to the 1997 Palestinian Local Authorities’ law and the 1999 Palestinian Environmental Law, the local authorities such as municipalities and Joint service councils are responsible for environmental elements (e.g. solid waste management and collection, and disposal in landfills, fees collection, and protection of natural resources from any pollution. Collection and disposal of waste were facing many serious problems daily; hence, Palestine has been suffering from continuous wars and political conflicts with Israel since the end of the Second World War. No attention was paid to the environmental issues in Palestine. Moreover, natural resources were used randomly without any plans. About "65% of people in Hebron didn't know what solid waste management means, and around 25% of people in Hebron did not have any kind of solid waste management or environment awareness, and thus they used to dispose wastes in waste recourses and open areas" (Jaber, 2009.P2). However, at the time of preparing this research report, there was no clear organizational and institutional setting for Hebron’s waste collection; transfer stations and worked landfill expect the new body (Solid waste joint service council). The following sections, the governmental and public organizations and the role of each one in the environmental sector will be discussed in details.

6.3.2 Ministries

a. Ministry of Environment Affairs

"MEnA is playing an important role as the planning, coordinating and executive body to improve environmental standards by address all environmental constraints, including natural resource depletion and environmental pollution, as an approach towards sustainable development, the aims is developing human resources and capacity building, promoting environmental awareness programs and activities, for the sound

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1 In this section, the Author will present the most important links between the governmental institutions in Palestine and Environment and sustainable development. In this case, the reader seeks more information from these institutions’ websites and links. The reader could read more from website and publications.
use and protection of environmental resources, arid land management, desertification combat, biodiversity ".(www.mena.gov.ps, 2010)

According to THE 19997 Palestinian Environmental law #7, The Environment Quality Authority or the Ministry of Environmental Affairs is the governmental organization responsible for environmental profiles at the national and local levels (e.g. supervising, managing, implementing tools like environmental impact assessment. The Environment Authority along with the local authorities control solid waste activities, organize workshops and public awareness campaigns and also decide on requests for disposal permits. The Environment Authority stipulates the criteria for land site selection and operation. It is also responsible for waste national strategy and suggests actions for strategy implementation. The authority has its main office in Ramallah and other offices in the different districts including Hebron.

b. Ministry of Local Government/Local Authorities

At the national level, the Ministry of Local Government is responsible for the activities of municipalities and local authorities\(^1\) and has a direct contact with and impact on the people’s needs. Moreover, environment is one of the main fields served by the Ministry of Local Government. In 2005, the ministry set up new departments in for environment affairs the ministry”s structure. The ministry implements the policies for municipal services including the organization and administration of solid waste services that fall under the remit of this ministry. In the section below, there will be more discussion of the municipalities and local authorities” urban environment functions.

c. Ministry of Planning (MoP)

When the Palestinian Authority set up the Ministry of Planning in 1995, the environmental planning department was already in the ministry”s structure and dealt with environmental issues such as solid and hazardous waste planning at the national level. Moreover, the ministry coordinates international fund and donor organizations” technical corporation. The ministry plays a significant role in preparing the Palestinian

\(^1\) For more about the Ministry of Local Government, see i chapter three.
environment development plan as well as linking the donors with other Palestinian organizations. In addition, it presents urgent environment issues and more particularly solid waste collection and water recourses protection and developments.

d. Ministry of Health (MoH)

Before establishing the Palestinian Authority, the ministry of health was responsible for solid waste management and controlling the random dump site. Nevertheless, the ministry’s scope of work related to urban environment is restricted to direct risks to public health and inspection of the microbes pollution, food pollution or any medical and health investigation required by other ministries with one exception that the Ministry of Health is still responsible for medical waste from hospitals (see more about medical waste in the section below). However the Palestinian authority issued Public Health Law in the year 2004 "The public Health law assigns the responsibility of combating infectious diseases and epidemics by all means possible to the MOH. In addition, the law gives the ministry the authority to take all necessary and precautionary measures to stop the spread of disease through: 1) imposing vaccinations and needed medications; 2) confiscating and destroying all material contaminated with the disease, or that could be a source of spread of the disease, in coordination with competent bodies; and 3) to bury the dead in the manner the ministry deem fit".(Musleh,2007.P14 )

d. Ministry of Industry and National Economy

In general, the ministry of Industry and National Economy manage and supervises the industrial and trade activities in Palestine, and there is no specific department in the ministry structure deals with the environmental issue. When the ministry gives a new industry permit, environmental impact assessments are requested and the ministry itself controls and supervises the activities of trade and industrial organizations in order to check if they are harmful for the environment or not. The ministries along with the Ministry of Justice investigate the claims and arbitrations cases between partiers in Palestine, in addition to enforcing laws for all factories and companies regarding any environmental issues.
h. Palestinian Water Authority

"Until the establishment of the Palestinian Water Authority (PWA) in April, 1994, there was no single institution responsible for modifying the existing plans and conducting new ones, that could meet the various water-related demands of the community".(www.pwa.ps,2010)

Water quality is one of the most critical matters facing the Palestinian organizations, and affecting the people of Hebron. The Palestinian Water Authority is the governmental organization responsible for waster and water”s sector on two levels: national and local. The authority along with municipalities and donors are trying to find new water resources and to build new water networks as well as monitoring water quality and any environmental issues affecting water resources¹. Moreover, the authority approves of or rejects licenses for activities or projects related to waste including the waste pollution and it tries to investigate if landfills might pollute the aquifers.

i. Joint Services Council for SWM in Hebron and Bethlehem

In chapter three, the researcher discusses the joint services counsel identification, functions and the structure within the Ministry of Local Government, hereby one of these new JSC organizations is "the Hebron-Bethlehem Joint Services Council for solid waste management which was officially set up in 2005. The member representatives of the joint council are from the southern area communities which include both districts and around 850,000 people. This council manages and supervises the construction of the proposed landfills in South Hebron, the solid waste management improvement and recycling projects in both districts ". (MDLF, 2009.P8)

j. Non-Governmental Organizations (NGOs)

"There are also numerous environment-related NGOs in the Occupied Palestinian Territories, many of which have played an important role in contributing information and experience to the preparation and review of laws and decision-making processes.

¹ See more about water sector in chapter 7.
Capacity-building for NGOs will assist in making these functions still more effective in future, particularly with regard to supporting and facilitating the work of public bodies”. (UNEP, 2003. P113)

Palestine is still not an independent state and a poor country. There are hundreds of nongovernmental organizations (NGOs) working in Palestine. Some of these organizations are working in the field of environment and solid waste management, mainly in research, data and information gathering and raising public awareness and training through small fund projects like solid waste collection trucks or containers. The NGOs totally depend on finical aids from donors (e.g. GEF, ACDI-VOCA, ANERA USAID, GTZ, EU, and JAICA). As noted from the field surveys, a large part of governmental responsibilities in the environmental sector are carried out by these NGOs, especially in rural areas and villages. Because the finical aids from these organization are temporary (mainly 1-3 years only), the Palestinian Authority is recommended to adopt new strategies in order to increase or encourage permanent services provided by these NGOs.

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1 The main NGOs that work in the environmental filed in Palestine covering as well Hebron are (ARIJ, Gadeer WSERU, WLPS, PHG, LRC, PENGON). The reader can find more information about the activities of each NGO via publication or its websites.
6.4 Palestinian Environmental Legislation, Policy and Planning

The environmental laws and legislations regarding solid waste collections and disposal, water quality, sewage, sludge disposal or treatment are not implemented in a sufficient way due to many reasons such as lack of awareness in addition to the weak Palestinian implementation of the law and also due to Israel's policies. According to Environment Public Awareness Director –EQA, (2008) "Many of the current environment legislations pertaining to solid waste management in Palestine /Hebron go back to the British and Jordanian period, but the 1999 law is the only one that includes new components regarding municipal contribution in solid waste management and health sector". The environmental laws in Palestine have a long story as follows:

a. Palestinian Environmental Law of 1999\(^1\).

b. Israeli Military Orders since 1967 until today, mainly in area C.

c. Palestinian Agricultural Law of 2002\(^2\).

d. Jordanian Public Health Law for the year 1966, which is still used in Palestine with some modifications as mentioned in the 2004 law\(^3\).

e. Palestinian local government Law for 1997, which is mainly for the Ministry of Local Government and municipalities policies and regulations.

f. The Palestinian Environmental Impact Assessment Policy (2000)\(^4\)

g. Oslo Agreements between the Palestinian Authority and Israel in 1994\(^5\).

The Palestinian environmental law of 1999 mentioned the general environmental policies and the different responsibilities of the Palestinian organizations. "The Law”s objectives (article 2) are: the protection of the environment by preventing all types of

\(^1\) The law was published in Official gazette – Palestinian Facts – February, 2000. page 38-70

\(^2\) The law was published in Official gazette – Palestinian Facts – October, 2003. Page 23-71

\(^3\) The law was published in Official gazette – Palestinian Facts – April, 2005. Page 14-34


\(^5\) "This agreement identifies the coordination mechanism between the Palestinian ministries and the Israeli side regarding health, environment, and agriculture. In addition, the agreement bides both sides to commit to issuing standards that are compatible with those that are internationally recognized. These standards should be equivalent and compatible between the two sides in the sectors of health, veterinary service and environmental aspects" (Musleh, 2007.P11).
pollution; promotion of public health and welfare; preservation of biodiversity and improvement of those areas which are environmentally degraded. It also promotes public awareness and encourages sustainable resource development for the benefit of present and future generations on the basis of intergenerational equity" (UNEP, 2003.P110). The laws also have similar articles to those of the 1997 Palestinian Local Government Law, in the terms of local authorities’ responsibilities towards the environment. "According to the law and mainly article (15), all the local authorities are responsible for collecting solid waste from public places, transporting and disposing these wastes in the designated areas. The same article dictates that all local authorities should take all precautions and procedures necessary to maintain public health and prevent outbreaks of epidemics among the people" (Najah, 2006.P89 & MDFL, 2009.P9).

The 1999 Palestinian Environmental law (No 7) instructed the municipalities and local authorities to put detailed and specific solid waste management and recycling principles, parties duties and the financial support depending on the conditions of each municipality. According to the 1999 Palestinian Environmental Law¹, the following articles set the legal framework for solid waste collection and urban environment planning:

a. Article (No 7) describes the environmental requirements in master planning and supervising the implementation of the plan at the national level.
b. Article (No 8) mentions all the related institutions that are to take part in the process of waste reduction, and supporting recycling and reusing.
c. Article (No 9) states that the Ministry of Environmental Affairs and the related institutions should stipulate the appropriate site selection criteria mentioned.
d. Article (No 10), mentions the responsibility of all in dealing with construction wastes in an approved and acceptable way.

¹ As mentioned above, this law was published in the Official Gazette – Palestinian Facts – February, 2000. Page 38-70, and all the articles below taken are from this law.
e. Article (No 12) states that no one can produce, store, distribute, use, treat or dispose of such materials without following ministry regulations and in full coordination with the ministry mentioned.

According to the previous laws, these rules and regulations could be applied by force after following the legal steps via local authorities and target ministries. However, it is very difficult to apply the law in Areas-C\(^1\), which is not controlled by the Palestinian Authority. For ten years, the environmental plans were adopted at the national level "The Palestinian Environmental Strategy (PES) was published in October 1999 by Ministry Environment (Environment Quality Authority). It covers the political and social context, the legal and institutional framework, the environmental driving forces, the environmental themes and the strategy elements, solid waste generation, collection and disposal which are discussed as driving forces. According to this plan, there are several aims including conserving the social, historical and cultural values of the Palestinian people and their communities, ensuring an adequate quality of life, health, safety and welfare for the Palestinian people, preserving natural processes, and also maintaining the sustainable use and the long-term ability of natural resources to support human, plant and animal life by conserving bio-diversity and landscapes". (MDLF, 2009.P8-11).

According to the Ministry of Industry and National Economy as well as the Environment Quality Authority’s requirements for any proposed project, the owner should submit environmental impact assessment study from the listed specialist consulting, from the environment office, from the Israeli authorities and finally from funding agencies which need special applications and studies to be filled. The

\(^1\) "Article 12 of the civil affairs of this agreement deals with environmental cooperation including matters pertaining to solid waste. The agreement „binds” the Palestinian Authority to deal with wastes in the West Bank. In December 1996, the Palestinian Environmental Authority was created by decree of President Arafat. During 1997, its mandates and responsibilities were settled. In August 1997, a memorandum of understanding was signed between the Palestinian Environment Authority and environmental planning directorate. The latter transmitted all the documents and most of its equipment". (see UNEP-Report, 2003 .P-14-17).
environmental impact assessment study is required only for the projects that might have an impact on the environment and people’s health (e.g. industries, landfills, workshops, treatment plans, industrial factors…etc). Such kind of projects needs a comprehensive environmental impact assessment study to check where compliance with environmental regulations must be ensured. The Israeli approval of the environmental impact assessment study is according to Oslo agreements between both parties.
6.5 Main Findings and Sustainable Improvement Tools and Policies

According to the research period, the urban environment in the Hebron was studied and analyzed through two main tools: first by the available data and secondly by survey through a questionnaire and structured interviews with the main target groups such as municipalities’ mayors and engineers, and also with the works sectors like companies’ owners, employees, researchers in the same field and decision makers in Hebron. Two questionnaires were designed targeting the urban environment in Hebron. The main objective of this questionnaire was to have a clear understanding about the environmental elements in Hebron including solid waste, wastewater, pollution, and green areas …etc. in addition to the sustainable development policies and academic recommendations required to have sustainable environment development in Hebron.

During the environment’s field study, the author prepared two types of questionnaires in which 1000 questionnaires were distributed to people from Hebron and 890 were returned. 450 questionnaires were distrusted to different organizations and only 370 questionnaires were returned (see the copy in annexes). When they were collected, they had a response rate of 86.9%. Many factors were taken into consideration in the distribution process such as geographical area, sector (Public, Private, and Non-governmental), and type of work (Copies of questionnaires are attached). Many data and information can be concluded from these surveys and the most important events are as follows:

6.5.1 Water

6.5.1.1 Domestic Water

"The World Health Organization suggests that 100 liters / person daily is a minimum requirement for every human being on the planet. The average Israeli enjoys a domestic supply of 280 liters per day, while a Palestinian on the West Bank gets on average only 60 liters. The problem is less one of availability of water than one of

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1 More details and information about the water sector will be addressed in chapter seven.
Decades of over pumping by the Israeli water authorities. They use deep wells that affect the long-term quality of the water and lead to the traditional, shallower wells used by Palestinians drying up. Chronic over pumping along Israel’s coastal plain means that the water table has dropped and the void is being filled by seawater and, increasingly, by wastewater" (PSC, 2009, P91)

Since 2006, there have been significant improvements in the quality of the main water supplied to communities in the Hebron because new water networks were constructed in the west of Hebron, and the political situation became better compared to of the time of the second intifada (2000-2005). The people in Hebron started using alternative sources of water such as home treated wastewater and refresh storm by using new technologies and especial filters which improve the quality of drinking water and reduce pollution.

Picture (6:1): Dora Water Tank, old and needs Cleaning and Maintenance (Source: researcher, 2008)
New acknowledgements and more integrated approach to water management are required by the government, industry and community groups. Hence, Hebron’s District and mainly Hebron City area is totally dependent on the groundwater provided by the private people from local springs and on the water from Israel\(^1\). The amount of water provided to the people of Hebron is less than demand especially in the summer. It is not sufficient and there is a shortage in the water supply. From the questionnaires’ analysis, around 62% of people in Hebron people responded that "the water quality and price are not satisfactory” and 31% said "the water has a bad taste mainly in summer". Also, 39% said "they did not have any idea about water pollution".

\[\text{Picture (6:2): A Temporary River in winter. The People Use this River Water for Domestic Uses without any Kind of Treatment (Source: Author, 2008)}\]

The sources of fresh water in Hebron are very few and the consumption of water has almost remained steady since long ago. According to PCBS (2010), the average of daily domestic water consumption per capita in Hebron is

\(^1\) See more about water and infrastructure services in chapter 7.
around (45 l/capita daily) which is less than that recommended by the Palestinian Water Authority and Palestinian Measurement and Specification Authority (Minimum 85 l/capita daily). Water pollution has already contaminated Hebron’s aquifers and is putting great strain on the remaining underground sources of drinking water and the remaining surface water sources in this water-poor country. All these effects reinforce the immediate need for Hebron to do what it can to improve the state of the environment within Hebron in order to save what can be saved for the coming sustainable development (see Zear, 2009.P4). In general, water is one of most serious political issues and conflicts between the Palestinian and Israelis, and according to Oslo agreements water sector is one of the end negotiation matter.

It is worth mentioning that there are many local springs available in the Hebron. Some of these springs are permanents like Alfawaar and Seaar, however, most of them appear only in winter (from January-April). These springs need urgent development as they provide the area with a good quantity of portable water. The lack of the amount of water means more diseases and a bad quality of life. More information regarding water will be discussed in chapter seven, and the author here focuses on the environment and water pollution part only. Other alternatives should be investigated in order to reduce the water’s shortage and so more studies and researches are needed to find better ways for using healthy water by the people of Hebron.

6.5.1.2 Domestic Waste Water:

According to I.Yaqoub (PWA,2007) "The Existing and Planned collection wastewater system is limited to urban centers about 35% in WB Wastewater generated is 29 MCM/y , In the WB 10.2 MCM/y collected through networks (7% is treated) while 18.6 MCM/y is collected through cesspits".

Depending on PCBS (2009), only 55% of the people of Hebron have permanent waste water services and sewage network while the rest drain waste water into septic tanks, deep wells or in open areas. Usually, the waste water is classified into two separate types of sources: the point source and non-point source. "Non-point sources are
generally more diffused and include domestic and municipal discharges from housing, public and commercial developments, industrial sites, roadways and parking lots" (Sharakh, 2008, P2).

There is only one wastewater treatment plant which is Hebron City Wastewater Treatment Plant and it is not working until today despite of the several efforts made to operate. In a meeting with environmental specialist (I. Khatib, 2009), he said "Hebron”s cities, towns and villages depend mainly on cesspools or septic tanks for the wastewater collection and most of the collected wastewater in these villages is disposed in open areas, agricultural areas and valleys. As a temporary solution, it is preferred to use septic tanks in the villages as they are healthier than the cesspits or cesspools".

Picture (6:3): Wastewater Drain In Street because there is no Wastewater Networks
(Source: Author, 2008)

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According to the head of Water Department (2009) in Hebron municipalities (Hebron, Dora, Yatta, Halhul and Dahriya), the general solution for the Hebron’s District is to have a central treatment plant\(^1\) and to upgrade the infrastructure in these cities, towns and villages. The system used now is septic tanks which costly and cause water pollution. If waste waster networks are constructed and a treatment plant is built, significant urban environment and sustainability changes may take place regarding wastewater. These are:

a. Health care and environment protection will be guaranteed and will be more sustainable for the people and environment of Hebron to improve the sound of clean environment and to the best possible of.

b. The waste water new projects will give more priority and answers about the measures of preventing pollution and increasing all regulations related to that and to public awareness.

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\(^1\) "In May 2003, an EA for the Stormwater, Domestic Wastewater Master Plan for Hebron was completed. A Scoping Statement for a supplemental to the Environmental Assessment was submitted in February 2005 to document a location change of the proposed Hebron Regional Wastewater Treatment Facilities (HRWWTF)". (CH2MHILL, 2005.P1)
c. Integrating all organizations (governmental, public and private), as well as these of Hebron in the required improvement measures and in avoiding any activity that may cause environmental pollution or harm to the natural resources.

d. "The Israeli settlements common location on top of mountains and hills overlooking Palestinian communities for security and intimidation purposes allows them to easily pollute the Palestinian land and water. The wastewater from many settlements is discharged to the nearby valleys without treatment" (See I. Kahtib, 2006. P2).

e. New projects will encourage waste water treatment and recycling to be used in the agricultural sector.\(^1\)

6.5.1.3 Industrial Wastewater:

From the field surveys and questionnaires filled by factories’ and industries’ owners or engineers in the industrial areas of Hebron, Dora, Traqumyah and Yatta, there are three major industrial groups in the Hebron:

a. Construction Factories: like ready-mix concrete, stone-cutting, block factories, and tiles factories which manufacture and provide the construction and building materials to Hebron and other cities.

b. Agricultural and Food Industries: like milk, bread, sweets, vegetable oil, slaughter and meat processing…etc.

c. Metal and Hazard Industries: Like metal finishing, detergent industry and workshops, chemicals, pharmaceuticals, tanning, cosmetics, textile, and miscellaneous. This kind of industries is more pollutant than the above two groups because "it produces heavy metal, and toxic substances. While the first group is the main source of air and noise pollution, the second group has high organic loads and the most sources of odder and attractiveness for insects and rodents. Standards

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\(^1\) The use of wastewater in the agricultural sector was implemented in many countries, and even Israel. This subject needs very wide and big engineering and environmental course. Because Palestine has a shortage in agricultural waste, this term should be developed and used in better and sustainable ways as in many counters.
for industrial wastewater effluents are expressed as concentrations of salinity, chemical and biological parameters. The physical, chemical, toxic and biological standards indicated are not specified for each separate industry”. (see MoLG-RABM, 2006. P61)

In Hebron’s industrial areas, the industrial waste water is disposed without pre-treatment from the industries or form municipalities or environment authority, and the factories used different ways to dispose the industrial waste water. According to the data collected via an environmental questionnaire (2008/2009), 57% of the factories dispose of waste water in the public sewer networks, 21% in septic tanks and 22% in open areas and valleys\(^1\).

The factories’ owners themselves are the people who decide what kind of treatment to be used for industrial waste water disposal, however, only 22 % of the owners of factories said that there should be on site (same factory plot) wastewater treatment plants, but 52% of factories owners mentioned that septic tanks are the best solution and 26% mentioned that the connection to the public sewerage network is the solution but is costly and not available in most industrial areas. It is worth mentioning here that there are many houses within the industrial areas and many factories within the residential areas in the Hebron District. This problem must be minimized and additional efforts should be exerted for this purpose.

"In general, discharges from Industries have many substances which are resistant to degradation by conventional biological treatment and self-purification process of the water environment. Wastewater containing intractable, toxic or carcinogenic substances should not be permitted to leak to clean water supplies or water reclamation systems. The industrial wastewater discharging to municipal sewers, cesspits or cesspools must be...

\(^1\) Wastewater hazardous wastes are mainly generated from the metal finishing, detergent industry and workshops, chemicals, pharmaceuticals, tanning, cosmetics, textile, and miscellaneous and usually disposed off as domestic wastewater.
controlled and contaminants parameters should be limited to a certain standard. Combining treatment of industrial discharges with domestic sewage in municipal wastewater treatment plants is economically and technically feasible but the industrial effluent parameters should be controlled to the limited parameters that can be handled as domestic parameters".(See MoLG, RABM, 2006.P66)

6.5.2 Solid Waste

6.5.2.1 Domestic Solid Waste

"Many of these temporary sites are in locations that cause unnecessary impacts and problems (e.g. on hilltops). Minor relocation to adjacent valleys or depressions might improve the situation substantially. It was evident that proper environmental impact assessments had not been carried out".(UNEP, 2003.P68)

Since the Palestinian Authority was established after Oslo in 1994, the number of municipalities and local councils was doubled, and many of new and small municipalities or village councils had no experience of solid waste management, collection and recycling. This condition is due to the weak environmental system in Palestine and lack of strategies or policies related to solid waste management and its components related such as recycling and landfills as well as lack of infrastructure and capacity among the old and newly created municipal and local councils.
However, after the establishment of the Palestinian Authority, and the approval of the 1999 environmental law #7, new organizations and governmental institutions take responsibility to improve solid waste management in Palestine. The activities and attention to this important field take many shapes like fundraising, research, preparing master plans for solid waste management in the West Bank. Master plans are recommended to have three central landfills; one of them is in Hebron because there is no sanitary landfill in Hebron and all collected solid wastes are disposed in randomly distributed dumping sites spread all over Hebron. Many of these dumping sites are near the residential areas. (See I. Khatib, 2006.P4 & Wafi, 2008.P66-71) It is worth mentioning here and depending on environmental questionnaire output data that more than 73% of Hebron”s people are ready to sort solid wastes of their houses into different components (Organic, plastic, metal ...etc) free of charge if the infrastructure is available for that purpose.
Picture (6.5): Solid Wastes in Hebron Streets without Collection (Source: Author, 2009).

There are many factors affecting waste generation rates such as source reduction and recycling activities, public attitudes, legislation and geographic/physical factors. "Hebron municipality also has a special regime dating from the Jordanian rule that deals with solid waste management. In response to the difficulties of local authorities in complying with the law, the ministry of local government has now established joint service councils which in many cases take the responsibility of supplying water and solid waste services for a cluster of communities. The ministry aims at taking back the responsibility for solid waste management and attracting funds to develop the sector at national level under the operational monitoring of Environment Quality Authority" (MDLF, 2003.P9-10).

The present condition of solid waste management in Hebron as well as in Palestine is almost the same regarding collection methods or disposal strategy despite certain improvements carried out by local authorities in 2005 – until now in dealing with solid wastes. Year after year, solid waste management becomes a more serious concern and a huge burden to the local authorities as well as the people themselves. Hebron’s municipalities are in charge of solid waste management process which includes collection, transportation and disposal. Currently, solid waste is neither sorted nor recycled which highlights the necessity for exploring other disposal options like composting and sanitary landfill dumping. In Hebron, recycling is used in a very limited range for some material like metals and food at composting. However, recycling options are possible following certain public awareness campaign and finding the required factors and system to achieve recycling and sustainable development objectives. The solid wastes are classified as: organic, inorganic and hazardous and composition of garbage: The garbage material in Hebron could be classified as in the following Figure (6.3).
The new and modern solid waste management system, adopted in many countries and called the 3Rs (Reduction, Reduce, Recycle), is strongly recommended to be taken into consideration in Palestine as an urgent basis in order to minimize the quantities of solid waste disposed and to be benefited from in recycling by reducing the expenditure and supporting the economical conditions. New sanitary landfill is needed prior to the closure of the randomly distributed unsanitary remaining in-service landfills, mainly Hebron, Hulhul and the Dora Dump Sites and other randomly distributed sites. Disposal alternatives should be considered for the long-term management of Hebron’s waste that

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1 According to Talahma’s report (2004), each person in Hebron produces 0.65 kg/day solid waste, but according to the last statistics by PCBS (2009), each person in Hebron produces 0.82 kg/day solid waste. This figure originally goes back to (2004), and during the south landfill design studies (2009) conducted by south joint service council for solid waste management, almost the same percentages were found (see the report “Environmental & Social Impact Assessment Report for the al-Menya Landfill”, 2009).
includes large scale composting, and landfill disposal. According the internal data obtained from Environment Authority (2010) and PCPS environmental statistics, in average each person in Hebron produced about 0.82 kg of solid waste daily which means 300 kg/ per year\(^1\). Therefore, in 2010, people of Hebron produced around 180000 ton of domestic solid waste. Depending on these figures and population numbers for the coming 15 years, the author developed the following figure (6:3).

\[ \text{Figure (6:3): Hebron District Domestic solid waste production in (tons), for 2025} \]

\(^1\) "Waste generation per capita is affected by economic growth and by waste minimization and other - public awareness campaigns. It has been assumed that some increase (about 1% per year) in waste generation took place. This indicator gives the guidelines for the required landfill capacities and number of trucks, containers, staff to have a good and sustainable management systems for solid waste collection in Hebron." (Nahel, 2008.P2)
"In Hebron as well as in the other parts of the Palestinian Areas, the number of people treating or recycling solid wastes is very limited and the amount of waste going to landfill is increasing and accumulating year by year. A large percentage of waste materials going to dumpsite rose from construction and demolition activity such as excavation soil and broken concrete which includes soil, clay, concrete and waste fill. The main concern is that without waste minimization strategies in place, the amount of this waste will increase as a result of urban regeneration"(UNEP, 2006.P-9).

In Hebron, main cities’ municipalities manage and collect solid waste and dispose it. Whereas, in most villages, there are private and special companies doing this job; and normally in all large municipalities like Hebron, Dora, Yatta, Dahriya and Halhul, there are separate departments for Public health and solid waste management within the municipality structure. According to the study area visits and environmental questionnaires’ data collection output, only 61% of people said that the municipality collects the solid waste and 26% of people said that the Joint service councils collect the solid waste, but 23% of Hebron’s People said there is not any kind of solid waste collection by any side.

Figure (6.4): The Collection System Available in Hebron. (Source: Questioners, 2009)
The main source of solid wastes in the Hebron is the households, then the commercial and public places, and then the industrial sector as shown in figure 6.5.

Figure (6.5): Main Sources of Solid Wastes in the Localities. (Source: Questionnaire, 2009).

According to Hebron’s heads of solid waste departments (2009), most of the domestic organic waste is not recycled and goes with the domestic waste stream to the dumping site. It is worth mentioning here that more than 88% of the people in Hebron are ready to separate and sort the solid wastes of their households into different components free of charge if the containers and infrastructure are available for that purpose based on the present population and forecasts for the Hebron as well as the estimates and forecasts for the waste generation per capita. The total annual waste generation over the coming years can be estimated and compared to the required capacity of the District/Regional Hebron landfill. However, many factories affect the solid waste production amounts and landfills’ capacities.

1According to Impact Assessment Report for land fill of Southern West Bank Joint Service Council for Solid Waste Management (2009.P117), the sanitary landfill design and good operational practice are required. *The conceptual site design takes into account the potential impact of contamination of
a. Population growth. Based on population growth figures, the people of Hebron will almost be doubled in the following 20 years, and consequently the generated waste volumes will also be doubled.

b. Improving solid waste management collection rate which is expected to cover all areas in Hebron in the coming years.

c. Encouraging waste recycling: public awareness and compositing needed to increase recycling rates for the various waste and increasing the benefit from organic wastes.

The figure below (6:6) summarizes modern and sustainable methods of solid waste collection and using it as a source of energy. The figure presents the basic components or stages of resource recovery. Palestine’s environmental experts and planners can use this model, and they can study and benefit from the experiences of other countries in solid waste collection and generating energy from it such as those of Germany, Japan and USA.

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1 Some of the major challenges are facing the Arab energy sector as identified by ESCWA (2005) are "improving accessibility to modern energy services, meeting the growing demand on energy resulting from population and economic growth, and switching from fossil fuel based economies to renewable energy systems". (GLA, 2007, P56)
6.5.2.2 Hazardous Wastes:

"The law identifies waste, hazardous materials, and hazardous waste. It is also based on the polluter pays principle. Although the law does not indicate that culled animals due to an infectious disease and their waste as hazardous waste directly, it however implies that these wastes are considered hazardous. The definition of hazardous waste based on this law is: any waste generated by the various activities and operation or the ash thereof which preserve the characteristics of hazardous substance, where hazardous substance is defined as any substance of combination of substances, which because of its hazardous characteristics poses a danger on the environment as toxic, radioactive, biologically infectious, explosive or flammable substances" (Musleh, 2007.P15)

As mentioned above, hazard wastes are defined as all the waste that pose a substantial danger when improperly handled immediately or over a period of time to human, plant, or
animal’s life or to the environment if it exhibits any of the ignitability, corrosively, reactivity, toxicity, salinity and irritability (See Humadi, 2005.P3). In Hebron, there is no special management or recycling for hazard wastes, and most of it is disposed with domestic and construction solid wastes. As the domestic and organic waste increase the amount of hazard waste is also increasing causing more land, air and water pollution. This kind of wastes will definitely affect badly the future sustainable development negatively.

![Image of Hebron with hazard waste](image)

**Picture (6:7): Cars, Batteries, Wheels …etc, all of these items are considered as Hazard and Dumped in Open and Water Sensitive Areas (Source: Author, 2008)**

The amount of hazardous waste collected and treated in Palestine is very limited. Moreover, management practices for storing and treating industrial hazardous waste at high priority sites have not been audited, and thus there is a need to ensure the best long-term practice management for these sites and other priority sites. According to data collection via factories’ owners and the environment’s questionnaire only 6% of factories’ owners said that their factories produce hazard solid wastes and 10% said that their factories generate hazard liquids/wastewater. The author also asked the factories’
owners about their opinions and suggestions for the best ways to treat hazard waste. About 63% of the owners said that there should be special hazardous waste treatment, recycling and special dumping sites, while 26% of them suggested that the daily collection by municipality is the best environmental solution, and 21% recommended that special containers or tankers should be used mainly for dangerous and very hazard waste like batteries and chemical liquid wastes. The above mentioned percentages are useful and needed by urban environment planners as well as the decision makers to decide the amount and type of construction required to treat and dispose of hazard waste. Besides, they are required by sustainable development projects in Hebron in future.

Another serious and dangerous hazard waste is the medical waste which includes all the wastes produced by hospitals, health care establishments, research facilities, and laboratories "During the last 10 years, the Palestinian Authority has taken the responsibility of Palestinian health. This period witnessed an increase in health services in all rural and urban communities, without a proper medical waste management system, which resulted in a growing medical waste problem"(Abu-Awwad, 2008.P2)

In the Hebron, unfortunately though, there is an incomplete management system for health care wastes. Most of the hospitals separate the medical wastes from general wastes, but there are no treatment facilities and so all wastes are disposed in the unsanitary dumping sites. There is no special management of other sources of medical wastes. The entire wastes are disposed within the domestic solid wastes. It is worth mentioning that there are "17 hospitals, 214 health care centers and 1061 private clinics in Hebron "(MoH, Internal data, 2010).

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1 In 2008, Majdi Abu-Awwad conducted a master thesis in An-Najah National University entitled "Medical Waste Management in Primary Health Care Centers and Private Clinics: Jenin District as a Case Study". A lot of the data and information about medical wastes in Palestine could be found in this thesis.
"In April 1998, the Ministry of Health and Palestinian Environmental Authority signed a memorandum of understanding. The Ministry of Health’s mandate in solid waste management was then restricted to inspection of facilities as well as to management of medical wastes in hospitals. The transportation and disposal of hospital waste have become the responsibility of municipalities under the supervision of the Palestinian Environmental Authority" (see I.Kahtib, 2004.P1). The following recommendations and sustainable policies could be useful to reduce the hazard wastes pollution in order to be treated safely.

a. The environmental engineers in Palestine are advised to study and develop recycling hazard waste, and to search for the ways that could reduce the production of these wastes.

b. Ministry of Health and Environmental Authority should develop supervision tools for factories requesting their owners to present a regular report about the
waste production. This action will show the polluting factories and force their owners to adopt more environmental procedures.

c. Public awareness for the people of Hebron and mainly students, labors and employees about the dangers of hazard waste and how it could be managed properly.

d. Hazard waste’s treatment and management should be part of any solid waste sustainable plans and landfills design.

e. The municipalities and Ministry of National Trade and Industry are recommended to establish hazard waste recycling workshops.

f. Hebron’s municipalities can benefit from the experience of other Arab cities regarding hazard waste recycling and treatment like Sharjah-UAE, and Khobar-KSA.

6.5.3 Air Pollution and the Impact of Urban Environment

"Energy production and consumption have serious negative impacts on environment. The dependence on energy to maintain life and the increased urbanization have led to the increase in consumption of fossil fuels for the production of energy. Burning fossil fuels has resulted in the production of greenhouse gas emissions. These emissions include many pollutants and particulates that are the main cause of air pollution". (GLA, 2007. P7)

Factories, cars and homes’ central heat fuel are the main source of air pollution. The centers of Hebron’s cities are the hot spot areas suffering from air pollution. In order to reduce air pollution, an environmental impact assessment should be strictly implied strictly for the current and new polluted factories, mainly construction factories and Al Kassarat. Moreover, new traffic planning/studies¹ are recommended to be implemented

¹ "There should be air quality standards for ozone levels and volatile organic compounds (VOC), a major component etc. in Palestine. These emissions depend upon the type of engine, weight of the vehicle, fuel type, fuel volatility (RVP), average speed and mileage actual rates by vehicle types, how recently the engine was started, how far it is driven before being stopped again, operating mode, either cold start,
in order to reduce traffic density in the city centers by decreasing the number of cars moving, and consequently is reducing air and noise pollution at cities’ centers.

"Air Quality can be affected in many ways by the pollution emitted from these sources. These sources can also emit a wide variety of pollutants. National standards and strategies should be available to control pollutant emissions from automobiles, factories, and other sources. Most people are aware of the fact that the air we breathe is not always as clean and pure as it should be. This is an unfortunate consequence of the way we live. But if air pollution is monitored and controlled, it will not adversely affect the health of the large majority of people. The main pollutants in urban air arise from road transport and industry"(see MoLG, RABM, 2006.P86).

![Cars Increase Air Pollution at Hebron’s City Center](image)

**Picture (6.8): Cars Increase Air Pollution at Hebron’s City Center (Source: Author, 2008)**

*stabilized or hot start, ambient temperature of the area being analyzed, roadway grade and whether or not the vehicle has been adjusted properly*"(Wafi, 2008.P125-127).
Regarding noise pollution, it comes from car, trucks moving and construction projects besides the factories built near residential areas. Hence, most of the factories in Hebron were established without carrying out the Environmental Impact Assessment studies because no organizations followed this kind of studies before the Palestinian Authority was established. Herby, it is strongly recommended to start immediate comprehensive studies and researches to reduce the noise pollution in high-noise pollution areas in Hebron and to give quieter and environmental sounds.

6.5.4 Stone Cutting Industry

The famous and fundamental marketable natural resource in the West Bank is the natural rock and building stone, mainly taken from the mountains and open areas. This kind of industry is the largest in the West Bank and is an important factor in the GNP of Palestine. Stone cutting industries are based in Nablus and Ramallah Districts in the north and in Bethlehem and Hebron Districts in south. However, the largest number of stone factories and stone cutting facilities are located in the southern part of the West Bank, more particularly in Hebron. The industry of cutting stone was started long before the
Palestinian Authority and had bad environmental impacts mainly on the surrounding air and agricultural areas. In addition, it had negative effects on the groundwater, surface water, flora and fauna and on the soil.

The laborers cut large rocks by bulldozers and special excavation machines from mountains, and then the stone is cut and shaped into smaller stones to be used in construction and building projects, mainly as a facade stone. This process needs large quantities of water to reduce dust generation and to cool the metal saws or the rock cutting stone. "Unfortunately this kind of industry is considered as the largest water consuming industry and the largest producer of solid waste and wastewater in the West Bank. Moreover, it is the main cause of air pollution and dusts which are produced from what is called kassarat" (See MSU-data, 2007).

Through visiting the sites of stone cutting industries, it was noted that there are no unified procedures followed by the owners of these industries to save the environment and reduce the amount of dust produced. Furthermore, different methods of wastewater treatment are used in some industries as well as the new technical methods to reduce water consumption with their effluent that has a high content of suspended solids. At present, "there are more than 440 stone cutting industries in the West Bank and 195 of them are in Hebron only. This large number of industries consumes approximately 390,000 M3 of water per year and produces nearly 30,000 tons of concentrated wastewater".

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1 The PEA received funds from Luxembourg to conduct the feasibility study for investigating the selected environmental hot spots in the West Bank and in Gaza which was carried out by SCHROEDER & ASSOCIÉS Consulting Engineers, 1998. The consulate carried out a complete study about the stone cutting industry, but it was for the West Bank in general. Many subjects were discussed in this study. However, the reader can refer to it too see more about this subject.
The solid waste and wastewater generated from stone cutting industry include small bolls or pieces that reduce soil fertility and affect the growth of the plants. The stone is widely used in Palestine, Jordan, Israel and in other GCC countries, since stone cutting industry started more than 40 years ago. There was no environmental controlling system or sufficient organizational structure to manage this strategic sector. Currently, there is a boom in new housing construction in Hebron as will be addressed in chapter eight. This trend is set to continue as the demand for stone cutting industry increases and so do the environmental risks and problems related to it.\footnote{The Palestinian Environmental Authority (PEA) has received a grant from the Government of Luxembourg, to be managed and administered by the World Bank through the METAP-PPU (Mediterranean Technical Assistance Program - Project Preparing Unit) in Cairo, for the identification and study of investments in environmental hot spots in the West Bank and in the Gaza Strip. These hot spots are defined as areas of particularly acute pollution with impact on human health and/or resulting in natural resource degradation. However the Author benefited from the report about the stone cutting Industry. Part of this report is presented in this sub-chapter, but in a way that links it with the whole report’s aims and agenda.}

At present, according to the observations...
from the and Asef-PPU research study (2008), the stone cutting industries in Hebron use the following systems:

a. Sedimentation Process. This process results in a continuing increase of solid contents in the water up to the point that there is no way to use the wastewater anymore. It becomes totally as slurry which is completely removed by evacuation tanks and dumped to open areas or valleys.

b. Adding Chemical Material. After collecting the wastewater produced from stone cutting machines in a channel system, special chemical materials are then added. These chemicals will be very hazardous and cause polluting when they are dumped at the end in landfills or open areas.

c. Using Filter Machines. This kind of factories uses a small amount of water (i.e. most of the water can be saved and kept through the water cycle and only a small amount is sent away and lost with the waste. This kind of water used is highly recommended to reduce water consumption, but its disadvantage is the high costs it requires.

"As already discussed in the previous chapters, the direct impact on the environment is mainly related to the actual practice of slurry disposal; and hence the slurry dumped on open land and in valleys destroys the indigenous fauna and flora. This in turn clogs the soil destroying its porosity and preventing the infiltration of water in the underground which replenishes the aquifers etc. Moreover, the Slurry reduces soil fertility due to the changes on the pH-value which also have negative effects on action. Further, the anion exchange capacity and slurry created hard lime layers that affect plant growth by preventing root penetration"(PEQ, 1999,P15-19) The wastes produced from cutting stone industry also have bad impacts on trees, animals and biochemistry of soil and anyone can see the white color that covers the trees, especially in the areas close to these factories. The slug running in the small rivers affects the vegetation along the rivers and increase soil erosion on slopes.
Finally, the huge amounts of stone taken from certain areas also have direct impact on earth layers’ sustainability as it might affect earthquakes’ resistance. Nevertheless, during last decades, the excavations and cutting works were not stopped and so a lot of mountains disappeared. Due to this, it is strongly recommended to start serious studies for evaluating and assessing the condition of stone cutting industry and its affect on environment, earth and future sustainable development. It is also recommended to find the best uses for the vacant stone industry such as using it as landfill, dams, big stores…etc.

The stone cutting industry is a sector related to decision makers, businessmen and thousands of laborers and job opportunities. The best academic recommendations and sustainable development tools should be realistic and workable. Moreover, there should be balance between the people’s needs and urban environment requirements. The author depends on field visits and discussions with most of stakeholders working in this sector and he will present the following recommendations to achieve sustainable development.

In order to solve the problems related to the stone cutting industry, mainly the environmental awareness, regulatory measures and law enforcement, the following recommendations should be followed and adopted:

a. Having general permits and zones for a new stone cutting industry and the construction factory sites to be in designated agricultural and not in built-up or expansion areas.

b. Stopping wastewater and slurry disposal into open areas, agricultural fields and valleys, formulating disposal criteria for the wastewater and slurry, setting environment quality standards for recycled cooling water, and also improving the technical standards of the equipment used for internal water recycling.

c. Improving the public awareness of the owners of stone cutting industries, the employees, farmers and people in general through training, lectures and workshops.
d. Reducing water consumption, mainly in summer, through the implementation of water saving technologies and using the solids suspended in the slurry-wastewater as raw materials in construction projects and mainly in road basements.

e. Enforcing a minimum separation distance between sites of natural stone and sensitive areas such as residential areas. Also developing these industries to be adjacent to other planned activities.

f. Funding new studies and researches to examine the best alternatives for environmentally sound waste disposal and a possible reuse of the solids as raw materials for other processes, and also discussing the strategies of reusing the solids contained in the produced slurries because they have some economic values. Hence, these solids consist mostly of Calcium Carbonate (CaCO$_3$) that can be reused preferably for the production of CaO (burnt lime) through heating. Lime is required for many purposes such as the leather tanning industry, the emulsion industry, and in the construction industry (see PEA, Hot Spot Report, 1998.P46-51).

g. Protecting natural stones and quarry sources and operations from developmental and industrial activities that would preclude or hinder their continued use and expansion, or that would be incompatible for use due to aspects of public health, safety, and environmental impact.

h. Putting the legal and supervision framework for avoiding and minimizing the negative environmental and social impacts resulting from stone cutting industries (e.g. noise and vibration impacts) as much as possible as well as protecting ground and surface water sources.

i. It is strongly recommended through coordination with Hebron District authorities to have consulting works regarding the big natural resources and environmental matters. This is basically done to prepare a suitable rehabilitation plan and sustainable development alternatives for the site to providing a compatible end use when the works
of excavation and cutting are complete taking into consideration the surrounding land uses and approved land-use designations.

j. Incorporating old quarry sites within the open space system, and ensuring that antiquity quarry sites are incorporated into the cultural heritage system, and finally ensuring that the stone cutting industry activities abide by the rules and regulations in a way that could achieve sustainable development vision and protect the environment.


6.6 Green Areas, Parks and Open Spaces

"In Palestine, as in any country bordering the Mediterranean Sea, forests have been playing a key role in the development of local civilizations. They are just as important and, if managed well and conserved from all forms of destruction, should continue to provide essential products and services in the future. On the other hand, people and their social organizations are the most substantial agents of change of forest ecosystems. Resulting changes in both the extent and the structure of forests hold consequences for ecological functions and environmental health. Accordingly, it is important to understand how people have and may further change the conditions of forested landscapes in order to gauge the prospect of forest sustainability"(Arij, 2006.P7).

The Green areas, parks and open spaces have a major role at the national, district and local levels of environment sustainability because the green areas include all the areas with trees, plants, buffer zones and natural features. Sustainable Urban environment development should keep the balance between the population growth, development, manufacturing, industry, commercial aspects…etc, and the environment which includes protecting the green areas as a source of fresh air and reducing CO2. Besides, it provides the nice view of the cities’ landscape. .This kind of balance is the core to sustainability and so it needs to be studied thoroughly by experts and professionals because of it needs scientific criteria and good knowledge and experience for accurate assessment. Green landscape systems is a fundamental part of urban environment and sustainable development process as it provides for connecting and integrating the open spaces on the periphery of urban areas into the built form during master plan preparation.

Today, the number of natural forests, constructed parks and tree covers in Hebron is less than 2% (PCBS, 2010). This section aims at show the serious condition and means of protecting the remaining forests and green areas. Furthermore, protecting these areas is a very important to sustainable development and to preventing random expansion in construction, which may demolish sensitive natural recourses area. Thus, it is the time to exert more sustainable efforts in order to guarantee a reasonable natural green protection and conservation that help the next Palestinian generations. Green areas are a critical
component of Hebron’s sustainability and without green/open public spaces; life would become more difficult as people depend on public spaces for interaction. Moreover, without green areas, the cities would become more congested causing more air pollution.

Picture (6.11): Dora Public Park & Green Area - Hebron District. (Source: Researcher, 2008)

6.6.1 Sustainable Development Problems

Depending on study areas’ visits and field data collection, the researcher concluded that the following challenges and obstacles are facing natural heritage and green areas:

a. Most of the natural heritage and green areas are not protected, and in many areas they are used for agricultural purposes only.

b. In villages and rural areas, which include more green areas, there are no laws of urban regulation to organize the new buildings’ construction. The people build on their own land without even thinking if it is a green area or a natural heritage due to the public awareness as well as high prices of land.
c. The absence of co-ordination and contact between public people, organizations and authorities has a bad impact on green areas and the urban environment sector in general.

d. The green areas of Al Arroub, Al Sabeyaa, Al Fredees and AL Fawwar are water harvesting areas and springs. They have high percentages of pollution because local people dump their waste, empty packages and glass on the same areas and mainly in weekends. Unfortunately though, most of the municipalities have no budget or even departments responsible for cleaning such places.

e. More urban expansion on green public parks and open spaces is taking place and most of the governmental and public buildings are construct above these areas

f. In Hebron’s towns and cities, the master plans include many policies related to the natural environment, green parks and open spaces, but the areas designated for this purpose are very small and limited because the public areas are very rare and do not exist in many of Hebron’s cities.

g. Many parts of west and south Hebron District, in which the population density is the highest, do not have public green areas or open spaces except for private land and vacant lots.

6.6.2 Objectives of the Hebron Green Areas Sustainable Development Plan

In Hebron District, the increase in the built up areas and new urban expansion lead to more pressure on open spaces due to the increasing competition for an alternative use of park spaces for housing, business and for industrial development. According to study area surveys, 75% of the Hebron municipality engineers mentioned that they have green open spaces and parks in their communities. From the author’s point view, these open spaces and parks require a lot of efforts to be rehabilitated and developed. Moreover, all Hebron municipalities’ engineers\(^2\) agreed that there should be separation areas between the

\(^2\) When the author mentioned Hebron municipalities’ engineers, he meant the head of engineering department in Hebron municipality, Dora municipality, Yatta municipality, Dahriya municipality, Hallul municipality, Ethna municipality, Seaar municipality, Beat Ommar municipality.
industrial and built up areas, and there should be additional green areas in Hebron. The general objectives behind sustainable development plans and management of natural heritage and green areas are saving these important resources to coming generation, having better weather conditions, cleaning the environment and also increasing the percentage of natural and green cover within the Hebron’s District. However, Hebron’s open space plan aims at the following:

a. Improving the air quality and refreshment through increasing and improving both the quality and quantity of green parks and open spaces in Hebron and ensuring an equitable distribution of these features across the built-up areas and urban fabric.

b. Improving the public and organizations’ awareness of the conservation of natural heritage and the value of green areas.

c. Protecting the green areas and natural heritage in Hebron is very important. Hence, a significant number of the natural environment has already been lost and remaining is going to be lost, polluted degraded and fragmented.

d. Establishing better urban environment, identifying the urban areas, and then providing a buffer green zones to separate the developed urban parts of the built-up areas from the green areas.

e. Improving health and general life quality and people’s satisfaction.

6.6.3 Green Areas/Natural Heritage Sustainable Plan, Policies and Tools

As mentioned above, the green areas include forests\(^1\), parks, street landscape …etc. These urban environmental elements and Natural Heritage\(^2\) areas need urgent protection and

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\(^1\) See more about the forests’ percentage and character in chapter 5 and also the forest and green areas at master plans in chapter 8 (Land use)

\(^2\) "Article 2 of the World Heritage Convention (UNESCO, 1972) defines natural heritage as:
- formations, which are of outstanding universal value from the aesthetic or scientific point of view;
- geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation;
- natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty." (Kelman, 2007.P1)
sustainable development action, policies and projects form all related sectors and organizations (e.g. ministry of agriculture, environment authority, Ministry of Local Government, municipalities, planners and local people. But before stating that, it is worth mentioning the sites of the green areas in Hebron District (Forest, parks and natural heritage). During his visits and using the maps from Hebron’s municipalities (each municipality and its borders), besides the assistance of Eng. Masser, Mahmoud (AD-HU), the author developed the below map(6:1) The map introduces the planners and decision makers to the sites of the green areas that require urgent development and protection at the district level. the green area does not only include the places of trees and plants, but it also includes the pleasant view, fresh air, tourism features, sensitive areas, water places where local people spend their weekend and occasions…etc. The author used the same methodology mentioned in chapter (4) to discuss and analyze the conditions of the green areas through visiting municipalities, local councils, villages and towns and through collecting related data from these resources, besides the discussions with planners and local engineers.

The map (6.1) needs more analysis, discussion and legal frameworks because it is the major foundation for Hebron’s sustainable development process in the green areas which are neither managed well nor protected. Therefore, they will be vulnerable to construction and infrastructure development and will also become dumpsites or deserts. Hence, tens of such cases could be found in Hebron which means that the people in cities will lose on the significant economic, social, and environmental benefits that parks and open spaces can provide.
Depending on above clarification, an immediate sustainable development action should be started in order to develop and protect these strategic places via adopting and following the following recommendations and policies by the following groups/organizations.

6.6.3.1. People of Hebron:

People are the end users of all urban elements. If the people themselves have public awareness, they will be able to protect and develop the natural and green areas.
However, for communities to move effectively toward green areas sustainability, they should do the following:

a. Encourage and support public awareness programs, and invite a wide range of people to attend public awareness lectures about green areas and natural heritage protection.

b. Parents as well as teachers at schools are expected to inform their children about the important of green areas and how to protect them from damage, fire and disappearance.

c. People in Hebron are recommended to increase the green areas in their home gardens, in natural heritage places and in green areas by cleaning and irrigation.

d. Minimizing waste and the proper management of residues during weekend forests visits and food preparing.

6.6.3.2. Governmental/Local Organizations (Ministers and Municipalities)

The governmental and local organizations like ministries, municipalities and local councils are the formal institutions responsible for the protection of natural heritage, green areas and forests and sustainable development. The following recommendations summarize the required actions and sustainable development policies required from these organizations:

a. Hebron District municipalities are recommended to starting a coordinative work to develop the available parks and forest areas mainly within municipalities' boundaries.

b. According to Majed Aref (Yatta municipality, 2009), special budgets to improve the conditions of the green areas should be part of municipalities’ yearly budget which should be approved by the Ministry of Local Government.
c. The local people should ask the municipalities to improve the forests, natural reserves and green landscape inside cities and urban areas by providing irrigation system\(^1\) and building fences around them.

d. The municipalities’ engineers agree that new big/district green parks are required immediately and the only option is rehabilitating and filling empty stone cutting industries’ areas with agricultural soil and planting trees in their places. This new big public park would be the green area for all people in Hebron.

e. Supporting and funding the project of green areas and urban agriculture by giving loans, training and providing incentives for cultivation and markets on these properties.

f. Hebron District’s municipalities are recommended to expand the current public open spaces by utilizing surplus land from the existing main roads, or from close stone cutting industries and random dumpsites.

g. At the district’s cities and villages master plans levels, new laws are strongly recommended to prohibit construction development within the natural heritage green parks and open areas except for the essential infrastructure which is supported by appropriate impact environmental assessment studies.

h. Integrating natural heritage green parks and open areas with Hebron’s transportation system and land-use planning.

i. The Palestinian organizations should benefit and learn from the same experience of Arab cities sustainable development plans like Amman, Beirut, Cairo, Jeddah, Al Alexandria and Ramallh, especially that these cities and Hebron have a lot in common such as the people’s culture, topography, land use, ….etc.

j. Developing new manuals and codes for building Green cities\(^1\).

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\(^1\) "The use of water-conserving technologies and landscapes including the use of drought-tolerant, native plants and use of permeable surface materials are to be promoted in the natural heritage in development in proximity to the natural heritage and green areas system" (Amman Met, 2007.P143).
6.6.3.3. NGOs, Universities and the Private Sector.

a. The governmental organizations are recommended to cooperate with the universities and non-governmental organizations in the implementing green environmental programs and natural heritage reservation process.

b. Universities and non-governmental organizations have a major role in raising the public awareness of Hebron’s residents, business-people and the landowners by instructing, training and engaging them in the protection of the environment and presenting the benefits of green areas for short and long term development agenda.

c. New construction methods and urban development policies could be set and implemented via green building\(^2\).

a. More studies and analysis are required mainly for the protection of the natural heritage and green areas and for connecting them with environmental sustainability. Besides, Integration of marginalized local people into sustainable development process is also required.

However, besides all of the above challenges and threats, the author attempts to present an academic sustainable development plan for the natural heritage and green areas. The following academic recommendations and sustainable development tools are needed in order to have a sustainable open space\(^3\).

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1 "Greening the city refers to strategies and techniques that protect and restore ecology within urban communities. It means "combining urbanism and nature to create healthy, civilizing, and enriching places to live." It means a living area governed more by nature than legislature; and a sustainable human settlement based on "ecological balance, community self-reliance, and participatory democracy." (A. Williams, 2000, P11)

2 See more about the green building in chapter 8. The carbon dioxide reduction and its effects is a global aim to promoting „sustainable development practices” and to encourage environment-friendly „green buildings” standards.

3 Here the Author again confirms these proposals, recommendations and policies generalized from the meetings, questionnaires, workshops with Hebron’s people, engineers and decision makers. All of these are from academic basis which needs more discussion and consulting of specific works.
Finally, any development taking place in an open space should achieve mainly protection, enhancing, or restoring trees, vegetation, and other natural heritage features. It should also preserve or improve public visibility and access, except where access will damage sensitive natural heritage features or areas; or unreasonably restrict private property rights and maintenance. It should create linkages between parks and open spaces to create continuous recreational corridors, maintain or expand the size, and improve the usability of open space areas for public parks, recreational, and cultural purposes.

Picture (6.12): Natural areas in South of Hebron District. (Source: Author, 2008)
The environment pollution, and mainly the water and air pollution as well as the poor government and private land use management and randomly urban expansion are all threatening the remaining pockets of forests, urban development. Moreover, the new housing creeping down the valleys in all the Hebron District areas is threatening Hebron’s most biologically diverse areas. Finally, the environmental system will be improved and become better if the number of green parks and open spaces increases and if structure and legal framework of the organizations could develop this sector. In the following sub-chapter, more recommendations for achieving the objectives of the sustainable development are presented.
Chapter Seven

Infrastructure Services links to Sustainable Development

7.1 Transportation
7.2 Water
7.3 Waste Water
7.1 Transportation

7.1.1 Overview & Introduction

Transportation is the core of the physical sustainable development for any urban areas. In Palestine, the roads and transportation sectors has been facing serious challenges for many decades now. The Palestinian Ministry of Planning and the Ministry of Transportation has prepared a regional transportation plan for all districts in the West Bank. This plan laid the foundations and formulation of the future and development transportation system and roads network at the national and districts” levels. The Ministry of Planning along with other ministries like Ministry of Transportation and the Ministry of Local Government prepared a technical report on the transportation and land use for the West Bank from 1996-19999. The report analyzed the actual transportation conditions and highlighted the issues that need to be addressed in the development of the future transportation system in Palestine (see MoP, TN-Report, 2004.P4). The plan was not implemented because there is neither budget nor funds available for it. The local finical resource could not cover it, either. Because of the second Intifada in 2000, most of planned and development projects were stopped or suspended. According to a consulting office (Maallem, 2009), more detailed studies were conducted and amalgamated into the plan including the studies for Hebron’s local roads master plans which have been developed over the past years.

Sustainable transportation planning and transit system operating in new and large modern cities are the best solutions in a comprehensive multimodal system. Hebron municipalities must develop and employ processes to ensure that investment decisions in roads’ system infrastructure and operations take into account many different factors. Moreover, most of the roads” networks and transportation system/models with best alternatives and urban solutions should be taken into consideration."In a well-organized District, each element of the transportation system is conceived as part of a hierarchy of each element with its own role and function within the context of an integrated and interconnected network. The hierarchy defines the function, scale, design features,
access permissions, operational characteristics, and investment priorities for all the elements of the integrated transportation system" (RABM-MoLG, 2006).

The road congestion and transportation system are related to different urban aspects and coupled with a variety of socio-economic conditions, urban environment, land use management, and financial support, which all have a direct impact on transportation infrastructure investment priorities. However, public transportation construction and investment must be conducted in a more quality, capacity and better transportation system’s services and other more environmentally-friendly forms of transportation in order to achieve sustainable development agenda. In this sub-chapter, the author discusses and analyzes the key issues pertaining to Hebron’s sustainable transportation system and how it matches other urban and land use management. Moreover, the required policies of dealing with high-order transportation and transit elements with more detailed plans should be created in Hebron’s planning area and community scales in order to deal with low-order elements.

The Regional transportation Plan for the West Bank indicates the goal for the future transportation system plan. It also includes ensuring that the transportation system must be effective, efficient, safe, and environmentally friendly. The same general goal at the District level can be adopted for the Hebron District as it will still be applied to the movement at the sub-regional level. The current conditions of roads’ networks and transportation system development in Hebron have been the result of very rapid urban growth in housing and population services’ dependence on privately-owned cars for travel inside Hebron District. According to the study, there has been a set of overall goals and objectives identified for the Hebron District’s Plan which were also considered as the framework and academic study view for traffic and transportation system (see MoP, TL-Report, 2006.-P12).
Hebron’s transportation sustainable development plan is expected to find proper urban planning solutions for the existing transportation problems by adopting modern and multimodal transportation system. It is also expected to find sustainable transportation solutions for cars”, people”s and goods” movement inside and around Hebron. The transportation development plan should take into considerations other elements like roads, equitable, economic, safe, and environmentally responsible mode. The Hebron District’s sustainable development transportation system is finally expected to achieve the following main objectives:

a. Coordinate between the roads” network, infrastructure and land-use planning to ensure the best integrated and complete urban system.

b. For the urban transportation system in Hebron to be efficient and effective, people must be able to transfer safely and conveniently from one mode of transport to another.

c. Establishing new organizations for improving the existing transportation
institutional capacity to have a sufficient sustainable transportation system.

d. Development a transportation plan that emphasizes the anticipated role of transportation bodies in Hebron for facilitating mobility and accessibility and promoting the planned land uses and for the environmental and socio-economic development.

e. Discussing and developing new engineering methods of Hebron’s internal road junction capacity.

f. Improving the quality and safety of transportation system services.

 g. Recommending general transportation policies to improve cars accessibility between Hebron cities and urban communities.

h. Encouraging the projects that aim at increasing capacity of the roadway networks by either widening or implementing geometric improvements of existing roads or construction of new roads.

i. Encouraging and raising the public awareness regarding the transportation system.

j. Putting academic recommendations to reduce traffic circulation, increase parking number and to develop the pedestrian areas in Hebron cities” centers.

k. Identifying Hebron District’s transportation hierarchy and identifying intermediate transportation interchanges.

l. Presenting the needed research and consulting transportation studies and analysis in cooperation with the ministries and municipalities in order to find alternatives for Hebron’s roads and transportation problems.

m. Proposing/Recommending new forms of administrative solutions for new transportation sustainable system in Hebron.

7.1.2 Review of Related Literature

Infrastructure is the sustainable development foundation as the services contact people daily activities. In Hebron, there are many researches and studies of the infrastructure profile, but all of the studies discuss part of the infrastructure like
transportation, water or solid waste. Until now, there are no researches or studies conducted to cover all infrastructure items as a whole profile like sustainable development aspect. the author will not imitate what the pervious literature and researches mentioned. This sub-chapter aims at giving a brief hint about the previous research conducted in this field.

In Hebron, the municipalities mainly organize and operate the infrastructure. Also the ministries like ministry of local government, ministry of transportation, Ministry of Housing and Public Works and Water Authority are managing part of the infrastructure works in Hebron. Due to this, the studies and researches pertaining to infrastructure are mainly conducted by the previous organizations. In many cases, the donors fund researches and infrastructure assessment reports. the author refers to many researches and studies related to waste, wastewater and transportation and the following part summarizes previous studies conducted on the infrastructure sector in Hebron.

a. Research and studies carried out by Ministry of Planning. The first one is Transportation Network on West Bank and Gaza, 2004, and the second one is Transportation–Land Use for the West Bank, Ramallah, 2006. The two researches were funded by EU and Norway government and discussed the roads network maps and classifications. The main aim of these researches is to bring short-term fund projects and to build governmental plans to be used by local authorities.

b. Study conducted by Arab Studies and Land Research Center entitled Hebron Governorate’s Report, Hebron-Palestine, 2007. This organization is one of NGOs working in Palestine on the subjects related to the Israel-Palestinian conflict and new Israeli settlements’ expansion. The organization prepares short reports about checkpoints, land use conflict and strategies required by the different organizations to face the Israel polices on the ground.

c. The Applied Research Institute – (ARIJ), conducted study entitled An Analysis on the Recent Transportation and Geopolitical situation in the Hebron, 2008,
Jerusalem-Palestine. ARIJ has been working in the agricultural and environmental field for more than 18 years. They depend on donors and grants to carry out their research projects for urban environment, land use, Palestinian and Israel's urban challenges and people assessment needs…etc

d. PECDAR (Palestine Economic Council for Development and Reconstruction), prepared a study entitled Hebron’s Transportation System, 2005. Part of this study is presented in the chapter below, but in general the study discusses the current roads and parking conditions inside Hebron only.


f. The World Bank prepared an assessment report about Palestine’s water sector development for all the West Bank in 2009. Part of this study will be presented later. The study was comprehensive and discussed most of water problems and development’s requirements. Many case studies were presented besides the discussion of water prices, pollution and Israel's policies.

Finally, the identified future plans of the transportation system indicate that such system should be able to provide sufficient and satisfactory level of accessibility to the various functional transportation and land-uses within Hebron and simultaneously provide effective transportation by enhancing the better mobility of transportation services and facilities. The above literature review of the studies is a part and not all. However, other references and researches are documented in this chapter contents as will be shown below.
7.1.3 Hebron’s Transportation System: Main Finding, Challenges and Assessment Analysis

The Roads and transportation system is one of the major Urban planning profile for any city. The roads, bridges, tunnels, buses, taxis, sidewalk pavements and stairways are all urban and physical elements that define any urban area. However, the way the people of Hebron use this transportation system has great influence on the quality of life in the Hebron District. According to preliminary studies and data collection about the transportation sustainability in Hebron, the author developed two questionnaires for this purpose in which many relevant questions were asked and the people, engineers and decision makers responded to them as will be shown later. The questionnaires were then distributed to all the representatives and transportation sectors in Hebron District. The two questionnaire where designed to meet the study research objectives from an academic point. The purpose of the questionnaire was to examine the problems related to transportation in Hebron District and how sustainable transportation development could be achieved. The questions deal with many parts, (e.g. general information about people of Hebron, means of transportation used, areas and the availability of roads structural plans, and the road network specifications. Moreover, questions related to the expectations from transportation sustainable plan in Hebron as well as specific questions about the traffic conditions and problems in Hebron’s cities, towns and villages, and of course other open ended questions. According to the study, there are two types of questionnaires (see annexes). About 930 questionnaires were distributed to the local people through random selection methods to know from where to have design and used data from study areas in different Hebron districts. Another 120 questionnaires were distributed to municipalities, local authorities and public organizations. Out of these, 792, were answered and returned. Based on the findings of the questionnaires and interviews, the overall analyses of the results can be identified as follows:

a. There are 16 main municipalities (Towns and cities) within Hebron District and population ranges from 8000 people in Betawwa to 200, 000in Hebron
City. But only 11 communities (around 66%) have master transportation plans while the rest (34%) indicated that they do not have master plans.

b. The majority of transportation problems are roads narrowness, shortage in number of parking spaces at the locality center, the passage of heavy vehicles through the center of the locality, pedestrians-related problems and the shortage of public transport within the locality.

c. There are around 1800 km of paved roads within Hebron cities, towns and villages boundaries. The roadway network within the boundaries of Hebron District is classified as 240 km as main roads, 370 km of as regional roads and 1090 km as local roads (see PCBS, 2009 and, ARC, 2008.P14).

d. The questionnaires’ results show that Hebron’s municipalities have expectations from the sustainable transportation plan such as facilitating the connection between Hebron cities, increasing the connection through roads and transportation, and also encouraging the distribution of land uses within all the communities.

e. According to the discussion with Hebron municipalities’ engineers (2009), they believe that the people of Hebron can benefit from Israel's bypass roads while others believe that using bypass roads is not permanent as it depends on security matters.
Map (7.2): Hebron District Built-Up Areas and Main Roads (Source: Drawing By Author)

Map (7.3): Israel Colony and By-Pass Roads (Source: Drawing By Author)
f. Around 82% of Hebron’s people strongly believe that it is very hard to acquire private lands for roads construction purposes especially in high price lands area. This issue is related to the general regulations used in such case. Hence, the Palestinian law gives money instead of taking land only if the percentage is more than 25%, otherwise the road cuts part of the land without any benefit for land owner.

g. The traffic is expected to increase in a similar rate to that of the number of vehicles which has been the trend for the last few years.

h. Around 36% of the of Hebron’s municipalities and local village councils said that they have the abilities to construct new roads or widen existing roads if they have funds and if Israel gives them permission, mainly in areas C.

i. The traffic congestion is increasing in cities’ centers and Hebron city is facing the major congestion and problems. Due to this, urgent transportation plans and new roads’ networks should be constructed.

j. Most of Hebron’s Cities and mainly Hebron, Dora, Yatta and Halhul are facing a problem with the parked vehicles in the center, mainly at break hours in morning and afternoon.

k. Most of Hebron’s municipalities believe that the new transportation authority within Hebron’s District is required to develop all transportation projects at the district’s levels in coordination with all municipalities.

l. There are no Pedestrian areas or special zones in all Hebron cities’ centers.

One of main transportation elements is roadway accessibility. Road accessibility means "the ability and convenience with which persons and goods move from one point to another; whereas low accessibility implies that the transportation of people and goods is associated with long distances, long travel times, and higher costs" (See S. Eisheh, 2006. P11). Roads’ network structure in Hebron is a radial one and thus facilitates accessibility between the main urban centers located on the same radial direction; while creating inadequate circumferential accessibility. This means that an additional 9-14 km
of traveling distance between any two cities/towns centers is needed in average. This increase is due to the topography of the area, the radial structural pattern of the network and the deficiencies within the roadway network. The data analysis of accessibility index shows the ability to use to prioritize roadway improvement, and hence the roadway improvements can be prioritized based on potential reductions in accessibility (See, Maallem, 2009.P14).

In Hebron”s growth urban centers like Ras Aljora, Alhawooz and Wadialhariyah; which will be interconnected by high order rapid transit services passing through the areas of continuous corridors of high traffic density mixed use areas, new and urgent transit plans are required for these strategic areas. The complementary transportation elements will contribute to the creation of an efficient and livable Hebron”s cities where citizens have an option regarding places of educations, work, place of residence and style of travel depending on their hopes and future expectations.

The Traffic congestion, mainly in cities” centers, is one of the main issues that should be discussed and developed in details. Consulting and academic research studies address the congestion that is resulted from the number of cars and absence of modern and new roads network to cover this increase. Hence, the limited capacity of such roads as well as the roads within the central area of the cities all account for the need to develop the central area and the very rapid increase in demand year by year. For instance, Hebron”s city center was planned 60 years ago, and the situation is still the same today but with an increase in the number of cars number. According to the Ministry of Transportation”s data (2009), the increase is more than 40 times¹.

¹ Measures had been taken to lessen the impacts of congestion and to improve the traffic environment in Hebron District as a specific part of implementing the recommendations of the traffic systems management study for Hebron District administered by PEC DAR and funded by the World Bank (Hebron Municipality-Engineering Department, 2008).
The types and classification of roads inside Hebron’s municipalities’ borders are recommended to identify and describe systematically the Urban/physical and operational characteristics of each type of roadway in order to have and ensure the best physical transportation design. The road design/hierarchy should also include controlled access roads, arterial roads, collector roads, local roads and lanes (See RABM, 2006.

19).

It was noted by the author as well as Hebron municipalities’ engineers and the director of Ministry of Transportation Office (2009) that since the Palestinian Authority was established in 1994, many consulting and research studies of transportation and roads’ networks were conducted for Palestine in general, and for and Hebron in specific. However, most of the findings and recommendations of these studies were not implemented and are still kept in the files. Many parts became old and not valid especially after the eruption of the Intifada in 2000 because there was no proper control and enforcement to implement these studies’ outcome. Besides, the political and
administrative condition is changing constantly.

**Picture (7.2): Traffic Congestion at the Main Halhul Entrance, (Source: Author, 2008).**

According to A. Saleh (Local Transportation expert, 2009), in order to establish a smooth movement of people and goods, a roadway should be accessible and appropriately designed with adequate capacity to effectively and safely move the available traffic demand. The level of service is used as the criteria for determining the adequacy of the roadway’s network for the vehicular demand\(^1\). Referring to the meeting with roads’ and transportation’s engineers in municipalities and Ministry of Transportation as well as from questionnaires’ analysis, it is assumed that traffic increased from 1999 to 2009 at a rate similar to that related to the increase in the total number of registered vehicles in Hebron District for the same period as no comprehensive traffic volume counts for such streets to be available beyond 1999. It is also assumed that an increase of about 6.2% is expected in the traffic volumes for 2025.

\(^1\) Maalem, a Consulting Engineer prepared a traffic study for Ramallah and Nablus cities according to the national transportation plan of 2000 and part of it in 2004. However, the author refers to this study and benefits from its analysis and output to develop this Transpiration Sub-chapter.
Therefore, major efforts are needed to upgrade these roads and therefore to improve the roads’ capacity and reduce congestion on these roads (MOT –Hebron Office internal data, 2010).

According to S. Esheh (2006) regarding roadway hierarchy, classification and densities, the existing roads in Hebron district are categorized into three main types: main roads which connect cities and towns like Birsabaa road, regional roads which connect towns and large villages like Dora-Hebron Roads, and finally local roads such as all internal roads inside municipalities’ borders.

![Picture (7.3): Main Road Inside Hebron City (Source: Researcher, 2008).](image)

According to PSBC statistics (2009) and the data obtained from the Ministry of Transportation and Hebron municipalities (2009), the estimated area of paved roads for
all road types in Hebron District is around 1.800 km\(^2\). See Map (7.4) which shows the current main and regional roads in the Hebron District.

Map (7.4): The Regional, Main and Local Roads -Hebron (Source: Drawing By the Researcher)

According to the study area”s observations, the main roads in most places are four/three-lanes roadways and most regional roads have two/one lanes only. Furthermore, according to Arij”s Report (2009), around 27% of the local roadway networks are unpaved. In the future Hebron District Transportation Sustainable Plan, all of the above

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1 "The density of roads within the Hebron District in respect to the area reaches 1.29 km per sq. km compared to that of the West Bank which reaches 1.57 km per sq. km. The density of roads in respect to population reaches 2.1 per 1000 inhabitants for the Hebron District compared to 2.4 km per 1000 inhabitants for the West Bank. Note that the local roads within the built-up areas and seasonal roads or tracks are not included in these figures" (see Center for Engineering and Planning, 2006.P-38).
mentioned figures area important to decide what kind of transportation system should be established, major bus routes, parking, service taxis …etc. Moreover, the academic/consulting works will specify the physical characteristics like exclusive lanes and special provisions and operational characteristics such as service frequency and vehicle type. In addition to the roads discussed above, it should be indicated that the Israelis have constructed several bypass roads linking Israeli settlements and bypassing Palestinian population centers in the Hebron over the years since their occupation of the Palestinian lands.

In meetings with key figures and Engineers and as well as the author’s own

1 The construction of such roads was intensified just before the implementation of Oslo Agreement. There is a total length of 230 km of bypass roads within the Hebron District which is part of the total length of these bypass roadways in the West Bank, estimated at approximately 850 km. The bypass roads are intended to be used by the Israeli settlers and security forces and therefore the Israelis restrict their use by the Palestinians (Arab Studies and Land Research Center, 2009.P4).
observations (2008/2009) regarding the roadway connections across and potential conflicts, Hebron’s municipalities’ future sustainable plans are recommended to adopt a new approach for addressing road junction capacity. This approach is based on a sophisticated technical assessment of the operations of both the intersections and the road networks as a whole. Hebron District is expected to develop and implement systems for controlling and assigning the right of the way at junctions using modern traffic signal control technologies which will be recognized by adding the new road linkages in the network for the purpose of redistributing traffic demands.

The public taxis’ and cars’ parking is also one of the major challenges and problems in Hebron. Since the establishment of the modern urban planning stress in Hebron’s cities during the British and Jordanian rules 90 years ago, the public car parking has not been a priority and has not been considered by the planners. Furthermore, the shortage of parking areas increases by the years and today it is considered as one of the major problems facing the cities’ centers according to municipalities’ Engineers as indicated and observed in the responses to the questionnaires. Despite the construction of two large parking garages in Hebron’s city center and another one in Dora city, these garages have not been considerably used by the public in the center of Hebron City and were only used by taxis. On the other hand, there parking regulations are not enforced and thus encouraging drivers to park illegally. On some roads, where parking is permitted, the parking and loading prohibition during the periods of traffic congestions are not considered. According to Hebron’s municipality (2010), there is a shortage of parking spaces by at least 2500 spaces in the central area of Hebron City.

Car parking in most of Hebron’s district is random as it changes from time to time. Moreover, the police enforcement is not enough or efficient to assure the implementation of rush hours or all day curb parking prohibition. Due to these conditions, new and urgent action should be taken by all governmental and private organizations in order to find proper solutions for car parking. This can be done by
adopting new standards for determining the supply, design and operational practices of parking. In addition, new financial aid resources should be found to construct new public car parking¹.

![Parking garage in Hebron City](source: Researcher, 2008)

**Picture (7.5): parking garage in Hebron City, (Source: Researcher, 2008).**

Regarding Pedestrians and Non-Motorized Modes, one of the major problems in the central areas of the cities and towns is the lack of enough facilities for pedestrians. Also in most places, the sidewalks are not always provided along both sides of the streets that are often used by pedestrians in order to access schools, parks, shopping areas, commercial areas and bus stops. In villages and rural areas, there are no sidewalk areas specified or known for pedestrians. There are only centers for most villages

¹ "The other transportation systems operational techniques and the use of demand management reduce peak period single occupant automobile travel that spreads traffic volumes away from the peak period and improves traffic flow. Such techniques include HOV (high occupancy vehicle) lanes with express transit service, carpools, parking management programs, peak period pricing, ramp metering, motorist information systems, route diversion strategies," (RABM, 2006.P28).
which include the activities of local people such as shopping, cars movements and daily activities. According to M. Nahed –PICDAR(2009), a complete and sufficient traffic circulation and a public car parking plan are urgently required to be developed in order to deal the pedestrians” flow issues, people moving inside cities” centers. Thus, the new auto-restricted zone should be funded and encouraged via new land use planning and new construction facilities for such mode should be implemented.

According to S. Esheh (2006), cities of Hebron District have a history of being walking cities as evidenced by the marvelous staircases found on hillsides throughout the District”s Cities. However, it is expected that Hebron District”s sustainable transportation will consider and promote a culture of walking in the District”s cities” centers by ensuring that pedestrian networks and facilities are completely integrated into transportation planning.

**Picture (7.6): Pedestrians’ Areas in Hebron’s City Center, (Source: Author, 2008).**

In general, the public transportation sector in Hebron District depends on the private sector via taxis and buses. Buses and shared service taxis are required to be licensed through permits issued by the government. In general, the level of services provided is
low and in the operation, there is no respect of the route specified by the relevant authorities. Buses’ services are provided by private companies with little or no support from the government. According to the Ministry of Transportation’s internal data (2010), there are 523 private buses and 397 public buses and 8017 Taxis in Hebron.

Regarding the governmental and institution organizations, in general, there is no transportation or traffic division in any of Hebron’s municipalities and the engineers in charge of road/transport do not have enough training. There are no institutional settings, which are related to the road/transport at the District level, except for the Ministry of Transportation’s office in Hebron. It the office responsible for drivers’ and vehicles’ licensing only. In addition, there is Hebron’s Directorate of the Ministry of Public Works and Housing which is in charge of road maintenance and construction of new roads beyond the boundaries of the municipalities and local village councils. According to ERF’s report (2005), around 30% of Palestinian expenditure is specified for transportation because this sector has direct impact on the people’s economic conditions, and thus sustainable development plans need to be adopted in Hebron.

![Figure (7:1): Palestinian Budget Expenditures (Source: ERF-Egypt, 2005.P14)](image)

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The ages and conditions of public taxis are different. Road conditions have significantly deteriorated because of Israeli invasions and destruction of roads. This has affected the conditions of shared taxis serving inside the cities. The economic hardship resulted from the closure conditions limited the ability of shared taxi operators to maintain their vehicles to the same standards.(See F. Nader, 2008.P4)
7.1.4 Bypass Roads

After Israel occupied the West Bank in 1967, Israel has gradually set a new transportation system in the West Bank and Hebron District called lateral bypass roads. The Israelis first began building roads in the West Bank around the same time when settlements were established in many places in Hebron District. The location of these settlements required new roads over difficult topographic terrain and in very difficult circumstances. According to settlements’ expert A. Hadi (2010), since 2005, new roads’ construction has peaked. As of today, Israel constructed more than 130 kilometers of roads in the Hebron District only, which is around 34% of the bypass roads in the West Bank. After the second intifada 2000, a new wave of land requisition through military orders began. Private lands were seized in order to construct new bypass roads to replace old roads or bypass roads that were no longer safe. The new roads were intended to meet the needs of the settlers in order to travel inside the West Bank without affecting the Palestinian resident areas and keeping them in safe conditions. In general, the bypass roads are constructed according to new engineering designs and are provided with most of services and safety tools. Nevertheless, Palestinian cars are prohibited from using these bypasses, but this condition might change only if there is a final agreement between two parts. This will increase the

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1 Lateral or "bypass" roads connect colonies and enjoy a safety buffer of 50 to 100 meters on each side where no Palestinian activity can take place including building of any kind. The construction of these roads has forged a path of destruction as dozens of Palestinian homes located along the planned highways have been or are waiting to be demolished.
benefit from the existing roads.

Map (7.5): Israeli Colonies, By-Pass Roads and Palestinian Built-Up Areas in the South East part of Hebron District (Source: ARIJ-GIS, 2009).

Map (7.6): Israeli Settlements, Roads and Annexation Walls in Hebron District (Source: Drawing By Author).
In Hebron District, there are many Bypass roads, but the largest and most famous of these is the Road (# 60) which connects South Hebron with North Hebron. The road passes through many Palestinian built-up areas and more than 37 Palestinian urban areas and villages lie on sides of that road. Mainly Yatta, Seaar and Beit Ommar are affected by this road. (Arab Studies and Land Research Center, 2007.P16-21). Bypass roads fall mainly in the category of roads that are entirely prohibited or prohibited without a special permit. These prohibitions are enforced by the Israel Army checkpoints and other measures to physically block or prevent Palestinians from accessing the routes. Thus, access to and from the roads to the Palestinian areas have been blocked with piles of dirt, concrete blocks, trenches, or iron gates\(^1\). "Part of the bypass roads pass through Area B, but most of them are in Area C, which according to the Oslo Agreements Israel was not entitled to seize private property for that purpose. Therefore, regarding this section of the road, the necessary requisition orders were not issued and no order was given to take control of the land. However, most of the time, Israeli Soldiers did not stop construction works on the road. Building new roads was initiated by the settlers without approval of the relevant authorities and became a common element of the many illegal outposts that have been erected in the West Bank since the end of the 1990s "(Peace Now” Report, 2005.P-9). Israel needs transportation

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\(^1\) Palestinians have almost completely ceased using many of these roads even when entry to the road is not blocked by physical obstacles or staffed checkpoints." In response to a query from B’tselem, the IDF clarified that a broad order issued in 1970 confers the right to restrict travel to anyone who is empowered as a military commander (i.e., the commanding officer, division commanders and their deputies, sector brigade commanders and other officials who are so empowered by the commanding officer) (Peace Now” Report,2005.P-3-9).
routes through the West Bank and the routes that Israel has actually constructed to the settlers are consistent with these needs.

The Bypass roads cater for the interests of the Israeli settlers who even before the outbreak of the second Intifada wanted to be able to commute to Israel and through the West Bank easily and safely. Bypass roads have also been seen as a way of making settlements more attractive to prospective residents. The idea of a bypass roads system which enables access to settlements and travel between settlements without having to pass through Palestinian villages was first raised during the settlement push in the late 1970s. According to the Settlement Master Plan for 1983-1986, the road is the factor that motivates settlement in areas where settlement is important and its [road] advancement will lead to more development and demand. One of the primary objectives determining the routes of the roads was to 'bypass the Arab population centers.' Based on this conception, Israel built dozens of new roads in the West Bank during the 1980s, (see Peace Now” Report, 2005.P-11).

The bypass roads form a modern transportation system in places resembling major multi-lane interstate highways. Travel on the bypass roads is extremely efficient and easy because they are usually free of traffic – reflecting the fact that even after 30+ years of settlements, there are still relatively few Israelis living in the Hebron. However and since 1967, some of Israel's investments in Hebron District infrastructure have included upgrading existing Palestinian roads. The overall investment has gone to creating an alternative transportation grid that is not geared to the needs of the

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1 The majority of the West Bank is Area C – designed to include all Israeli settlements with disconnected areas of Palestinian-controlled land (A & B) scattered throughout. The bypass roads are located throughout area C, creating a grid that crisscrosses the entire West Bank and creating in many areas a physical barrier between areas under Palestinian control.
Palestinian population (though at times Palestinians have been permitted to use it) and does not reflect their social/economic behavior (see Peace Now” Report, 2005,P-19).

Finally, the author believes that the bypass roads could be part of the transportation system sustainable development plans in Hebron. As mentioned previously, time this research will address the physical and administrative issues, whereas, the political issues will not be discussed because of their constant change. Therefore, a fair judgment could be different from one to another, and the bypass roads are one of the most political challenges between Palestinian and Israel.
7.1.5 Conceptual Academic Framework to Improve a Sustainable Transportation System

It is expected that the future plan for the entire district of Hebron is to be a cultural and financial center for the West Bank. Due to this, the transportation system is expected to be an efficient system that facilitates the movement of people and goods among the cities, towns and villages of Hebron. The future Hebron sustainable transportation system is expected to provide effective and safe roads and a transportation system. This is done by developing and enhancing the entire transportation services and constructing/building new transportation facilities. In general, the transportation studies should have a comprehensive analysis as well as a pattern of traffic flow within Hebron, between the central node of the cities, the close urban centers, the surrounding districts, and the inter-regional traffic. The roadway plan for development should include suggested improvements of the existing roads and a plan for new roads in order to improve capacity and accessibility at the inter-urban/inter-regional and intra-regional levels. In the following section and depending on the study area, data collection and the meetings with most of the organizations having a direct or an indirect relation with the transportation system in Hebron (e.g. ministries, municipalities and NGOs, the author will present academic recommendations for sustainable transportation policies that could be used and implemented in the case of Hebron:

7.1.5.1 Roads, Street Plans and Transit System Development

The first step of developing roads’ networks is developing and designing new master plans for the roads. These plans should be developed for the entire Hebron District and other Palestinian cities and districts and should identify and show the function and of each roadway. The classification system should also give detailed studies of the interaction between the future land use and transportation. Hence, these studies are important to control urban development and future transportation problems which are usually too costly to rectify. The relationship between urban development, land use
planning, sustainable development and transportation systems must be integrated and emphasized in order to encourage the shift from traveling by cars to walking and decreasing the use of machines (cars) travelling. The following policies should be adopted as a part of the land use/roads study from an academic view:

1. The new urban development or renovation in Hebron is recommend to have car parking according to zoning laws which should also be included in the master plans’ approvals.

2. Before issuing building permits to new residential, commercial and industrial projects, the developers are strongly recommended to conduct Traffic Impact Analysis studies by specialized consultants.

3. Hebron cities’ and towns’ centers have a lot of open and free lands which need more studies and surveys in order to use part of them as permanent/ temporary car parks. However, this issue is recommended to be integrated within land use studies.

4. For smooth traffic flows, it is recommended to integrate the roadway components into a hierarchical system that depends on the functional classification of roads depending on capacity and mobility requirements, mainly inside big Hebron municipalities’ areas.

5. The municipalities can benefit and maximize the use of existing roads’ networks by expanding and maintaining them as well as increasing the use of Israeli bypasses which will be considered as a part of the future roadway network.

6. "It is recommended to adopt strategies for proper intersection improvements as well as traffic control. This will assist in achieving the maximum efficiency and safety. Improvements could range from geometric design improvements to installing and proper timing with the coordination of signals and the provision of traffic control signs and pavement markings. Strategies for traffic police enforcement of regulations and the establishment of traffic courts would be essential to ensure the proper implementation of traffic laws and regulation" (See S. Eshehm, 2006.P24).
7. It is recommended to provide more accessibility and mobility to the population centers inside the cities of Hebron as well as increasing the connection with educational, economic and administrative centers within Hebron District.

8. Encouraging compact urban growth in order to make the best use of existing transportation services like buses and shared taxis, developing and improving Hebron’s pedestrian areas accessibility. This issue requires Hebron’s municipalities and transportation authorities to focus on moving people and goods rather than moving cars/vehicles in the integration with sustainable land use management.

9. Hebron-Bethlehem Road, which connects the northern District with the central and northern ones within the West Bank and part of Hebron-Jericho Main Road, should be upgraded to have a total of six lanes of traffic with limited accessibility to the local streets with parking restrictions to maximize their traffic capacity.

10. Hebron-Yatta Road, which connects Hebron with Yatta, needs to be improved and upgraded to have a limited accessibility to the local streets with parking restrictions to maximize their traffic capacity and there is no need for additional lanes. Hebron-Dora Road, which is part of the road leading to south-western towns and villages of the District, also needs to be upgraded to have four lanes.

11. Hebron-Biet Ommar Road, which is part of the regional road leading to the north-western towns and villages of the District, needs to be upgraded to have four lanes.

12. Proper public transport services, which depend on the buses, should be planned and adopted in order to provide an efficient transportation system which will in turn enhance the mobility of a considerable portion of the population. On the other hand, restrictions are suggested to be implemented on issuing taxi permits. Moreover, parking policies and regulations are recommended to be reviewed, developed and implemented in order to assist in managing parking supply. Policies to encourage pedestrians and non-motorized modes are to be identified.
and facilitated and such modes should be constructed. An auto-restricted zone is suggested to be established in the central area of Hebron. (See Mallaem report, 2006, P19)

13. The Internal Ring which forms a ring around the central areas of Hebron needs to be upgraded to be a four-lane road in order to allow two lanes of traffic for each direction.

Map (7.7): Hebron District Transportation Plan (Source: Drawing By Author)

1 This Ring/Cross Roads Map was developed by the author depending on urban and transportation conditions at Hebron District, Hebron municipalities’ Engineers (Hebron, Dora, Yatta, Dahriya and Halhul) advice, besides the same transportation development experiences in other district Like Ramallah District (Plan 2006-2007), Amman (Plan2007), however this map is the foundation and base of transportation development plans. When these recommendations were adopted and approved of later _in case it happened_ by governmental and public organizations, more studies and designs will be required for these roads tracks, size, classification, environmental impact … etc.
The External Ring which forms the outer circumferential ring close to the borders of Hebron District has to be constructed as a four-lane road. Parts of the road should follow segments of the road which was constructed by the Israelis, but should also be upgraded and realigned.

14. Hebron roads’ network will constitute the principal rapid transit network serving the entire Hebron municipalities. Moreover, Hebron District transportation master plan will be shared and involved in all municipalities, JSCs and villages inside Hebron District and surrounding it.

15. A new strategy for pedestrians and non-motorized modes are recommended to be started. However, several factors have to be considered in this regard. These include the management of one-street parking in commercial areas, designing traffic flow circulation and adoption of one-way streets when appropriate and also specifying the central area to be an auto-restricted area. Sidewalks should be provided along both sides of the streets that are used for pedestrian access to schools, parks, shopping areas, commercial areas and bus stops. Moreover, proper off-street parking lots and garages should be established with proper financing mechanisms.

16. For transportation planning purpose, it is recommended to build new roads’ network data base by using GIS within Hebron District’s area. These data should include all roads specifications (e.g. if it paved or not, the width and length, traffic use …etc. Such database can assist in identifying the roads with defects and the defining needs for setting priorities to rehabilitation and will help bring more projects and funds for such roads. Moreover, this system will improve the movement of cars, people and goods inside Hebron district’s cities.

17. Any proposed transportation body or plan in Hebron district is recommended to take into consideration the necessity to coordinate the planning of the roads and transportation with that of the West Bank regional plan and also with regional land uses management and socio-economic development.

18. According to Hebron District municipalities, engineers are recommend to start
consulting studies about the horizontal and vertical transportation system issues like right-of-way requirements, feasibility of each roadway element, securing the required road right-of-way and the safety of all road users. This is considered as a high priority in transportation planning and roads’ design.

19. Public awareness is recommended to be encouraged and increased by the Ministry of Transportation, municipalities and NGOs to present the best transfer system from place to another and how the people can avoid traffic or the shortage in car parking.

20. The municipalities are recommended to start constructing new roads, bridges, underpass and tunnels, especially in continuous roadway capacity and cities’ centers by depending on traffic and transportation studies.

21. Supporting, upgrading and developing the main roads and infrastructure from Hebron center to Bethlehem center to Jerusalem centre to Ramallah center to Nablus center by enhancing its capacity, safety and operational characteristics including the elimination of substandard intersections and accessing private property.

22. Conflicts related to roads and other transportation systems like close and end roads across the cities’ and villages’ borders need immediate solutions. This could be done by establishing sharing committees between these close cities.

23. It is strongly recommended to start an immediate coordination between the Ministry of Local Government and Hebron’s municipalities to prepare technical specifications and transportation manuals that can be used by planners for new developed areas inside Hebron. These manuals will guide the planners to use transit services and infrastructure during the earliest stages of occupancy of the developed area. The new residents and employees will have the opportunity to choose transit system they like and this way of planning will save money, time and resources.

24. Regarding the new roads’ construction, transportation and investment in Hebron’s transportation systems, many items should be checked and taken into
consideration which are:(See AMP, 2007)

- Renovating and maintaining the existing roads” networks in a state of good repair to the specified standards of integrity, safety and stability.
- Developing the existing roads and infrastructure to ensure its best configurations for moving people and goods efficiently and safely and generally improving the functionality of the public spaces within Hebron”s roads.
- Developing new connections within Hebron”s transportation system and optimizing the configuration of the network to support achieving land-use management goals for existing built-up areas.
- Expanding the transportation system to provide an acceptable standard of mobility in Hebron designated developed areas.
- Finally, expanding Hebron”s transportation system to provide the minimum acceptable standard of mobility to areas of growth not designated in Hebron District.

7.1.5.2 Transportation Institutional Arrangements

"New forms of institutional arrangements are to be introduced including the establishment of a central Transportation Authority at Hebron District level. Such authority could consist of three Departments: Roads, Public Transportation and Parking. Proper coordination should be established between the Transportation Authority and its departments with the Municipal engineering divisions. Moreover, the capacity of the Transportation Authority as well as the Municipal Engineering Divisions should be upgraded in roads, transportation and traffic fields" (RABM, 2006.P36).

The Transportation Institutional and organizational part is still not managed and organized well as most of Hebron”s municipalities and local people (2008-2009) said, “in order to avoid many transportation and transit current problems, it is strongly recommended to create an integrated new transportation planning department in
Hebron. This department will be responsible for preparing comprehensive multimodal policies and programs which are consistent with and informed by the land-use policies of Hebron District. The unit is expected to have independent responsibilities and to coordinate the sustainable development transportation with other authorities. The municipalities are responsible for the roads inside the municipality borders, but the roads outside the borders are the responsibility of the Ministry of Housing and Public Works. Therefore, it is very necessary to introduce one central/district unit in order to look after the public interests related to transportation. Such authority could consist of three Departments: Roads, Public Transportation and Parking departments. Figure (7.1) illustrates the organizational structure of the proposed transportation unit.

Figure (7.2): Proposed Hebron Transportation Authority Structure (Source: Drawing By Author).

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1 This structure is only proposals and recommendations by the author. However, further discussion and modifications could be done via Hebron Local authorities along with central government in Ramallah to adopt this
The duties and job responsibilities of the main departments mentioned in the above figure will be decided by the related ministries like Ministry of Transportation, Ministry of Local Government and Ministry of Planning as well as Hebron’s municipalities and local government authorities. However, the following points summarize the major tasks of the main department in Hebron’s proposed transportation sustainable development plan.

**A. Roads Department:** This department is responsible for all roads construction and developments. The department is expected to have five sections which are: Administration, Planning and Design, Construction, Traffic Operations and Maintenance.

**B. Public Transport Department:** This department will be responsible for all issues related to cars’ and vehicles’ licenses and implementing transportation roles. It is recommended to link the entire Hebron District with this department and to adopt a modern transportation and car software management system used in many modern cities in the Arab world like the one used currently in Dubai –UAE. They created what called RTA, so that Palestinian planners can benefit from this experience to develop the transportation system in Palestine.

**C. Parking Department:** This department will be responsible for new parking construction and managing the entire car parking like planning, development and management mainly in Hebron cities’ centers. The Parking Department should coordinate employing parking policies which is a fundamental step to the success of entire transportation plan.

Moreover, the author refers to the same experience of Nablus regarding Transpiration Department. (See more in RABM, 2006 and Nablus An–Najah University, 2007)
7.2 Water

Infrastructure which includes transportation, water supply, wastewater, electricity\(^1\), telecommunication\(^2\) etc. is the key sector in the planning of sustainable development. It is an also integral part of any growth plan that includes transportation, water resources and supply, wastewater collection and treatment services, solid waste management, electricity and telecommunications services. The author discussed solid waste in the environmental sector (chapter six), transportation is discussed and analyzed above, and here the sustainable development plan for water and waste water will be presented.

When the Palestinian authority started managing and controlling the water sector in Hebron in 1997, it was hoped that water resources and networks will be available and provided to all the people in the District in order to improve the living standards of the Palestinians, particularly the poor and increase the amount of water for agricultural use. However, all these hopes are not met yet and they are very partially realized which need more studies and projects to develop the poor quality of water and

\(^1\) Electricity sector plays a major role in developed countries. 100% of the electricity in Hebron District is provided by Israel and the Palestinians do not have any power generation plants. The municipalities, local authorities and private companies managing the electricity service inside the Palestinian built-up areas and they collect the bills. After that they forward the money to Israel. The field studies and analysis show that electricity is available for the whole area, but about 75% of the sample complain of the periodic disconnection of the service. The majority of Hebron’s people agree that electricity prices are very expensive and the connection fees are also high. The following table summarizes the results regarding electricity services: This sector required

a. Encouraging collaboration between Hebron District, public utilities and stakeholders to achieve an efficient use of electricity, reducing reliance on carbon-based fuels, encouraging the use alternative energy sources as well as promoting “green” building practices

b. Providing and improving electrical facilities through a District Improvement Program.

c. Improving the public awareness about energy conservation and the best use of electricity in houses and industries.

\(^2\) Telecommunication service in Palestine is provided by the Palestine Telecommunication Co. (PALTEL), with rapidly changing technology and PALTEL today leads Palestine into the new era of communications through its state of the art technology and advanced services. The company provides its customers with quality telecommunication services, leased digital lines, internet access, DBS, public payphones working on smart cards; local multi-channel distribution service, and multi-service data. The company has also installed the ISDN lines allowing high speed Internet access to subscribers, video conferencing, video phones and a wide array of advanced services. Other services provided include televised transmission for the use of Arab and foreign news agencies operating in Palestine so that they could transmit live important events in Palestine through companies specialized in this field.
to build sustainable development strategy for water in Palestine. However, the resolution of such mass of problems requires more input from all related sectors, decision makers, engineers and local people of Hebron.

It is noted that the existing conditions and level of improvement in infrastructure services vary among Hebron different municipalities, towns and local villages that are very poor. It is necessary to bring up the development level of infrastructure of the localities lagging behind without creating any conflicts between Hebron’s municipalities and localities. However, the infrastructure should be provided to all these localities through the provision of financial support based on priorities and keeping in mind the overall vision of Hebron District’s area and the set of national policies.

The West Bank in general, and mainly Hebron District suffer from water shortage and big valuation. However, since the eruption of the second Intifada, the Israeli restrictions have increased and in many cases the bulldozers have destroyed the water networks. In addition, there are many challenges and conflicts between the Palestinian and Israeli authority concerning water prices, commercial claims, roadblocks, barriers as well as permit policies, administrative practices and informal governance processes that restrict the Palestinians’ freedom within the West Bank. This unhealthy condition badly affects the water sector as will be shown below. This also means that the fundamental urban planning and sustainable process affect and prevent smooth development.

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1 "The bilateral interim agreement between the Israelis and the Palestinians of 1995 identified the eastern basin of the mountain aquifer as the principal source of fresh water for the Palestinians in the West Bank. It was agreed that between 70 - 80 M.m3/yr additional extraction would satisfy the Palestinian needs. The international community funded additional borehole extraction from the eastern Basin. In 1996, Hebron 1 and 2 wells were drillers Israel’s contribution while a further 14 production wells were drilled for the PWA. The Joint Water Committee (JWC) was established as part of the Oslo 2 agreement and it is composed of an equal number of representatives from each side, to implement the undertaking of the agreement. Palestinians consume about 58 L/cap/day, while WHO’s recommendation is 150 L/cap/day. Provision of an adequate water supply for the Palestinian population of the West Bank, as detailed in Article 40 of Oslo 2, is compromised by two-fold faulty data. Allocation was based on Israeli estimates of population which proved to be gross underestimates (PCBS, 1997) and a serious overestimation of the available water quantity in the Eastern basin" (Dav. J. Scarpa&A. Abed-Rabbo-PALAST, 2005.P18)
After 1967 war, Israel took control over water resources and aquifer water tank storage and developed wells or excavated for new wells throughout the entire West Bank including Hebron. Moreover, the Israeli civil administration controls the water supply network serving Palestinian people through linking it into the Israel water company (Mekorot). Until now, many towns and villages in Hebron are connected to same company they were connected to before establishing Palestinian Authority in 1994. However, according to several studies conducted by Palestinian NGOs and the World Bank report, Israel’s gross national income (GNI) per capita was almost 15 times compared to the Palestinian GNI per capita. Furthermore, the Israelis” average water consumption is four times more than that of the Palestinians. Palestinians are struggling to obtain the basic level of infrastructure and services of a low income country (World Bank”s Report No. 47657-GZ, 2009,-P 9-13).

The water profile was discussed in the Palestinian-Israel peace negotiations and it is one of the major issues that were not finalized between two parties until today. It was agreed
to put a temporary condition and shift the final settlement to be part of the final agreement. Article 40 of Oslo 2 agreement involved provisions and returned some of the Palestinian water resources and of course to Hebron District. Besides, the operation responsibility was also transferred to the Palestinian Authority. The Palestinian Water Authority prepared a Water National Strategy in 1996\(^1\), but unfortunately the unsuitable political and financial conditions resist and often stop most of these plans and strategies.

### 7.2.1 Maim Findings related to the Water Current Condition\(^2\)

#### 7.2.1.1 Water Resources

Hebron District is located on two of three component aquifers (huge ground water tank) in Palestine with a recharge area that largely lies in the east and west of Hebron’s Mountains. The western aquifer capacity is estimated to be about 350-500 million cubic meter, whereas the eastern aquifer capacity is estimated 75-120 million cubic meter. Both aquifers are controlled by the Israeli government and the Palestinians only have the right to use 4% of their water capacity (See Water Authority, Palestinian Water Agenda 2008-2010,-P102). Moreover, the excavation for deep artesian wells due to the increase in demand for domestic, agricultural and industrial needs that reduced the recharging areas and created additional risks for the aquifers on the long term.

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\(^1\) See more about this strategy in EMWIS Web-Palestine Institutions.

\(^2\) As will be shown in this sub-chapter, the Palestinian Water Authority is the official body managing the Water Sector in Palestine. Besides, there are many other organizations and NGOs working directly or indirectly in this sector, and due to this there are hundreds of researches, studies and publications that discuss the water sector in Palestine from different aspects. Moreover, Birzeit and An-Najah Universities awarded master degree in water engineering. The author refers to many of studies conducted in Palestine about water like the study done by the World Bank’s Report No. 47657-GZ, also the Palestine hydrology NGOs, as well as the Master thesis and PWA publications and reports, as shown in this sub-chapter.
Figure (7:3): Rainfall and Groundwater aquifer tanks recharging in West Bank (Source, M. Aliewi)

Picture (7.9): Water Storage Tank, above East of Hebron District (Source: Author, 2008)
Hebron’s municipalities and Ministry of Local Government are the main operators for the production and distribution of water to Hebron’s people. Only 55% of municipalities' towns and local villages within Hebron District are being served by water from two main water sources i.e.; from Israeli water company (Mckorot) and the local springs like Al Fawwar springs and Seaar. The areas which have no water networks depend on small local spring like Al Symaih, Houmsa, Al bayarah…etc, and the water carried to houses via big trucks, which is expensive and mostly not available especially in summer.

Map (7.10): Main Water Springs in Hebron District (Source: Drawing By Author).
7.2.1.2 Water Networks

The above map is prepared by author showing the springs in Hebron but in the past, this spring ran out of water or provided a little amount of water, especially in summer. Most of these springs are managed and operated by the private sector and land owner.

The Water network is very old and covers only 45% of the built-up areas for the construction of new networks in Area A. It is totally managed by the Palestinian Authority’s institutions, but in Area B and Area C, the Palestinians should coordinate and take permission from the Israeli civil administration before any new water networks or water wells’ excavation project start. The formal rules applied by the Israeli civil administration are in some ways similar to regular physical planning applications. They are based on outdated regional plans and lack of Palestinian participation, expansion of the water pipe system and main network in order to provide services to all locations and the developed areas within Hebron’s District. The Palestinian Water Authority regulations should continue their aim of securing additional water source by drilling new wells and by implementing the project which deal with the reduction of water loss.

"Typically, Hebron residents divert rainwater into cisterns and use this water throughout the dry season. Each cistern holds an amount of water enough to satisfy minimal requirements during the rainy season and then for an additional three to four months during the dry season (Hunt, 2001). The study shows that a significant number of cisterns (27%) were constructed within the last 10 years. It is expected that the number of rainwater harvesting cisterns is going to increase as a result of natural increase in population, water shortage, and agricultural and industrial developments needs as Hebron city is considered as one of the most important industrial areas in the West Bank of Palestine" (A. Salaymeh & I.Khatib, 2009.p17).

Before the new and modern life style came to the people of Hebron about 40-50 years ago, most of Hebron’s people were farmers. They depended on the water collected from rainfall in housing tanks or on local small springs. The water consumption at that time
was less than that of today. At that time, there were no bathtubs, no washbasins, and the people used little water for their domestic uses. Due to this, water consumption increased dramatically as a result of many reasons including increase in daily consumption, increase in the number of people and the water resources are the same or even less than they were before. This means that the planners and water resource consultants will have serious challenges in Palestine in the coming years in order to make the balance between the water supply and demand. Otherwise, a war about water will start and no one will know what kind of catastrophes will follow.

![Picture (7.11): Drawing water from a pit to collect Rain water in a-Dhahiriya, (Source: AD Dahriya Municipality, 2008).](image)

According to Water Authority and municipalities” records, the water consumption ranges between 40 to 60 Liter per capita/day with an estimated consumption of 38,000 m³/day for the district. The estimated yearly consumption in the district is 13 million m³/year and the water loss is estimated at 3.5 million m³/year. Currently, most of the municipalities and localities suffer from shortage of water in the summers due to the visitors coming from abroad. Hebron”s authorities expect the water consumption to
reach 48,000 m³/day, which requires an additional 1020 m³/day to be available for supply (See PWA, Report, and 2009.P14).

Table (7:1): Summary For the Water Network Condition in Main Hebron District, Cities and Towns:

<table>
<thead>
<tr>
<th>Location</th>
<th>Water source</th>
<th>Network coverage</th>
<th>Conditions of network</th>
<th>Management of network</th>
<th>Quality of service</th>
<th>Current problems</th>
<th>Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEBRON</td>
<td>Local Spring and Israel</td>
<td>60%</td>
<td>Acceptable In most places</td>
<td>Municipality</td>
<td>Good</td>
<td>Water shortage in summer</td>
<td>Expansion of network to meet development</td>
</tr>
<tr>
<td>DORA</td>
<td>Local Spring</td>
<td>30%</td>
<td>Not Acceptable</td>
<td>Municipality</td>
<td>Poor</td>
<td>Water shortage, &amp; maintenance</td>
<td>Expansion of network to meet development</td>
</tr>
<tr>
<td>YATTA</td>
<td>Local Artesian well</td>
<td>55%</td>
<td>Not Acceptable</td>
<td>Municipality</td>
<td>Good</td>
<td>High Price and loss</td>
<td>Construct and expanded new Network</td>
</tr>
<tr>
<td>DAHRIYAH</td>
<td>Israel</td>
<td>45%</td>
<td>New network</td>
<td>Municipality</td>
<td>Acceptable</td>
<td>Maintenance required</td>
<td>Expansion of network to meet development</td>
</tr>
<tr>
<td>HALHULAH</td>
<td>Local Spring</td>
<td>65%</td>
<td>New network</td>
<td>Municipality</td>
<td>Good</td>
<td>High Price and loss</td>
<td>No needs</td>
</tr>
<tr>
<td>SEAAR</td>
<td>Local wells</td>
<td>0</td>
<td>No network</td>
<td>No network</td>
<td>No network</td>
<td>Expensive water from local wells</td>
<td>Erecting water network. Plan for usage of local wells.</td>
</tr>
<tr>
<td>BAYITOMMAR</td>
<td>Israel</td>
<td>70%</td>
<td>Old network</td>
<td>Municipality</td>
<td>Poor</td>
<td>Cut off in summer High prices</td>
<td>Expansion of network Rehabilitation of existing network.</td>
</tr>
<tr>
<td>ETHNA</td>
<td>Local Spring</td>
<td>30%</td>
<td>Old network</td>
<td>Municipality</td>
<td>Poor</td>
<td>High losses</td>
<td>Expansion of Rehabilitation of existing network.</td>
</tr>
<tr>
<td>TARQUOMYAH</td>
<td>Local Springs and Israel</td>
<td>35%</td>
<td>Old network</td>
<td>Municipality</td>
<td>Poor</td>
<td>High losses</td>
<td>Rehabilitation of existing network.</td>
</tr>
</tbody>
</table>

Water is a vital commodity for planning and development of any region. The consolidation of developed areas facilitates the provision of an integrated piped water system using the limited resources within the area. The survey of the existing conditions indicates that the available water resources, level of services and the condition of the water networks vary from one locality to another within Hebron. The existing water conditions within Hebron District reflect the needs for improving water

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1 The data and percentages were collected by the author via meeting with Municipalities’ engineer in water departments or via questionnaires and field observations. All of the above figures are estimated and might change form one year to another depending on projects and donors’ funds.
supply, improving water networks” conditions, and expanding the water networks to cover the existing and proposed developed areas.

Table (7:2): Results Regarding Water Services Questionnaires (Availability, Quality, Prices and Network Connection Procedures)\(^1\).

<table>
<thead>
<tr>
<th>Main Subject</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Availability</strong></td>
<td></td>
</tr>
<tr>
<td>Always Available</td>
<td>39.4</td>
</tr>
<tr>
<td>Discontinuous</td>
<td>25</td>
</tr>
<tr>
<td>Unavailable</td>
<td>36.6</td>
</tr>
<tr>
<td><strong>Quality</strong></td>
<td></td>
</tr>
<tr>
<td>High quality</td>
<td>16.4</td>
</tr>
<tr>
<td>Contains grays</td>
<td>57.9</td>
</tr>
<tr>
<td>Very poor quality (Not for drinking use)</td>
<td>18.6</td>
</tr>
<tr>
<td>Missing</td>
<td>7.1</td>
</tr>
<tr>
<td><strong>Price</strong></td>
<td></td>
</tr>
<tr>
<td>Suitable</td>
<td>7.9</td>
</tr>
<tr>
<td>High</td>
<td>56.4</td>
</tr>
<tr>
<td>Moderate</td>
<td>28.6</td>
</tr>
<tr>
<td><strong>Network connecting procedure</strong></td>
<td></td>
</tr>
<tr>
<td>Easy Procedure</td>
<td>15</td>
</tr>
<tr>
<td>Long procedure</td>
<td>14.3</td>
</tr>
<tr>
<td>High connection fees</td>
<td>25.7</td>
</tr>
<tr>
<td>Moderate connection fees</td>
<td>15.7</td>
</tr>
<tr>
<td>Missing</td>
<td>29.3</td>
</tr>
</tbody>
</table>

Since water is vital for encouraging development activities. The water supply and water networks should be provided for all localities all the time. Moreover, the water services and tariffs should be unified in each locality within Hebron District. The majority of the

\(^1\) The data and percentages were collected by the author via meetings with municipalities’ engineers and via questionnaires and field observations. However, the following tables in this chapter, data and percentages are from the same resource.
existing networks is old and needs constant repairs. The unaccounted water is reported to be around 28% while the majority is accredited to physical losses from the networks and damages in the main pipelines. Hebron’s municipalities received funding for the rehabilitation of the network in order to reduce the unaccounted for water.

Most of the water networks in Hebron’s cities, towns and villages need rehabilitation, maintenance and expansion because large quantities of water are wasted in the network. The Palestinian Water Authority could not meet the shortage in water due to shortage in water recourses besides the continuous claims concerning the rights for water between the Palestinians and Israelis. Although the issue of water was discussed and minted in the Oslo peace agreement (Article No.40), the Israelis created many obstacles when the Palestinians needed to construct new production well. In addition, there is a reduction in water table due to the high consumption of Israeli settlements and lack of financial support to excavate new and deep artesian wells (See Water Authority, Palestinian
Water Agenda 2008-2010, P14-23). Nevertheless, many studies were conducted for improving the existing networks and for reducing the losses.

Map (7.11): Hebron District Population Covered by Network Water Supply (Source: Drawing By Author).

The communities in Hebron District which do not have water network or whose supply of water is not permanent especially in summer, depend on coping mechanisms for the unconnected and are typically accessing springs, cisterns and tankers. They also pay very high prices often for poor water quality, sometimes ten times more than normal price range for often. The water high prices have negative impacts on people expenditure budgets and also on health, mainly for the poor. However, according to Eng. N. Mohammed (Dora Municipality, 2009), it estimated that around 5-10 % of people’s income is spent on water monthly, particularly in summer. Moreover, the movement of water tankers caused pollution, more fuel consumption and traffic
problems. Furthermore, lack of water will increase illnesses and will destroy the public health, mainly for women and children. These entire indicators show that the water sector in Hebron needs urgent development projects and studies; otherwise the sustainable development will be questionable.

Picture (7.13): Water Tank Descending on Earth Mound Set up by the Israeli Army on the Road to Yatta, (Source: Dora municipality, 2009).

The Palestinian Water Authority is unable to conduct integrated management of the water resource in the Hebron District in a way that covers all the people’s needs because of many restrictions (Article No 40) that require the approval of the Israeli Authorities on any proposed Palestinian authority management measure or infrastructure. The Palestinian Authority also suffers from a shortage in the financial aid or governmental budget designated to cover water development projects. Referring the Palestinian and Israel's water struggle and problems, there are hundreds of reports, articles and press reports that the reader or the new researcher in this field can find in Palestinian universities libraries’ such as Birziet, An-Najah,
PPU and other colleges and also in NGOs like ARIJ, PHG, Ghadeer and in the ministries like Water Authorities, Ministry of Natural resources, Environment authority and in the municipalities.


7.2.1.3 Water for Industrial and Agricultural purposes:

The shortage in water and its high prices have a major negative impact on the industrial activities and the agricultural sector which require large quantities of water. Hence, the farmers obtain part of the water they need from small local springs and through collecting water in winter. However, in summer (July, august and September), it is very hard to find water for agricultural uses and production due to the reduced amount of water which is 80% less in these three months compared to the other months. However, the agricultural sector can create new job opportunities, increase the people’s income, and can play a role in avoiding a rush to the cities and in
maintaining the Palestinian physical presence in rural areas.

However, there are many NGOs and universities which support the agricultural sector and fund research projects in order to reduce amounts of water used for irrigation by using new technologies. This requires further investigation, discussion and national plans.

7.2.1.4 Water Quality and Diseases:

In chapter six, the author has discussed water pollution and in this chapter he will discuss the absence of water networks’ projects besides the poor maintenance of the existing water networks that have sharp and negative impact on the fresh water quality and the environmental sector in general. In the studies that have recently been undertaken by USAID in the rural areas of Hebron it was found that water quality is very poor and threatening to the life of thousands of people. Moreover, many diseases are found like Typhoid and Ameba which are very serious diseases (See MAS, Report, 2009.P-74).
In meetings with local authority’s engineers and the people in Hebron villages (2008 & 2009), it was noted that the main problem of local communities is water and the absence of a permanent water source as well as the high costs of water suppliers due to the shortage of water resources and even of drinking water or that used for household uses. This is the typical situation Southern Hebron District, which is one of the most affected regions in the West Bank, especially the isolated rural communities that suffer from an inadequate water supply and poor water quality. Infrastructure schemes have not been designed to alleviate these problems as they have frequently faced implementation delays as a result of a lack of financing, donor disengagement and Israeli forces security administration in Area C. Consequently, poor households are regularly faced with a decision to use either tanker water at high prices or to use unsafe free-well water.

1 Palestinians who live in villages not connected to a water network must store rainwater, bring water from nearby springs, or buy water from water tankers, Yatta – Hebron, 2008.
The survey of the existing conditions indicate that the available water resources, level of services and the condition of the water network vary from one locality to another. The existing water conditions reflect the needs for improvement of water supply, improvement of water network conditions and expansion of the water network to cover the existing areas and proposed developed areas. The lack of safe and adequate drinking water supplies at affordable price made men; women and children suffer from water-related diseases. The lack of projects and financing in these areas made the donors establish water projects in area C¹. However, there is also a need to

¹ "To ensure harvesting of good quality rainwater, collection processes should divert the very dirty runoff from the first few millimeters of rainfalls away from the cisterns to avoid contamination. Thus, the rainwater is only diverted into the cisterns after the catchment area and cistern interior have been washed off. In addition, residents will need to be educated about cleaning and maintaining all components of the system in addition to the investments in equipment and education. Based on the existence of the microbiological contamination in the harvested rainwater, the possible pollution sources discussed in this paper must be considered as the prevention options while faecal Coliforms, as
cooperate in order to resolve current unsustainable water practices, particularly aquifer over pumping and lack of pollution control that together with a predicted decrease in rainfall in the coming decades can compromise the welfare of future generations in Palestine.

7.2.3 Institutional Framework and Policies

Palestinian Water Authority is formed according to a presidential Decree No. 90/1995 which is known by the 1996 law No 2. It is the authorized body to administer the water resources in Palestine according to water national policy and law mechanism with ambitious plans and programs to achieve the target of obtaining our water rights and providing the citizens with potable water at an affordable price. The Palestinian Water Authority is responsible for the planning, developing and monitoring the usage of the water resources and also for protecting these resources from pollution and contamination because of the vital importance of water. The law includes the establishment of a national water council headed by the President of Palestinian National Authority and with the membership of the relevant ministries. The role that has to be assumed by Palestinian Water Authority is one of the regulator and overall supervisor of the water/wastewater sector. The challenge that faces the Palestinian Water Authority is how to ensure the continuation and the fulfillment of such a mission at a time when funding dries up in order to accomplish such a task. The primary aim of Palestinian Water Authority is building a sustainable sector. The Palestinian Water Authority believes that in order to have a sustainable water/wastewater sector, the institutional arrangements have to be restructured and revised to guarantee the efficient and optimum utilization of the resources.

The Palestinian water law is the overall framework of the water sector. However, the law structure shows the separation between water resources management and regulation which are controlled by the Palestinian Water Authority and water supplying and using institutions. The law also states that the national water council is a simple and inexpensive indicator of rainwater quality, are to be examined frequently" (A.Salaymeh & I.Khatib, 2009. P23).
responsible for water resources management and regulation and a bulk water supplier distributes water to four new regional utilities and local authorities which are responsible for retail distribution (See PWA 2009.P45). The Palestinian Water Authority is responsible for the following:

- Reviewing and developing the water meter development plans.
- Submitting studies and proposal to have new funded projects from donors in the water field.
- Supervising and managing large water projects such as deep well, water tanks, water networks, treatment plans…etc.
- Improving the coordination and institutional relationships with other governmental and local authorities with the municipalities and the JSCs, in all issues related to the development of the water sector.
- Training and developing governmental and private sector’s employees and technicians

According to Palestinian Water Authority, there are three different types of institutions as follows:

1. **The West Bank Water Department (WBWD)** which is generally responsible for delivering bulk water to utilities, municipalities or villages. It coordinates the transaction between the Palestinian Water Utilities and Mekorot. Currently the West Bank Water Department acts as an executing organization to the Palestinian Water Authority.

2. **Water Department in the Local Government.** Within the organizational structure of each of the local councils and municipalities, there is a water department that attends to the water system in the service area. Their responsibilities include billing, operation and maintenance of the water network.

3. **Sub-Regional Utilities.** There is only one sub-regional utility which is Jerusalem Water Undertaking utility which serves the Ramallah District. This utility is formed according to law No. 9 for the year 1966, which was issued
providing the establishment of Jerusalem Water Undertaking (Ramallah District) empowered to develop new water resources and control all water projects in the area entrusted to provide all the water needs for drinking water and others.

According to the Palestinian Water Authority, the future institutional arrangement in the Palestinian water sector will have the following three levels:

**The Regulator of the sector:** The Palestinian Water Authority will continue to act as the regulator and overall supervisor of the water sector at the economic and environmental level.

**The Bulk Utility:** the West Bank Water Department will continue its function and will be entrusted to implement the Palestinian Water Authority national investment in the infrastructure. The Palestinian Water Authority will be seeking to secure the additional quantities of water by drilling new wells and will construct and maintain main water trunk lines.

**Regional Utility:** Three regional utilities will be established in the West Bank namely North, Central and South.

Hebron District will be included within the south regional utility. The Regional utility would capture the economics of scale and build on the experience of the private sector in the management. It should be noted that the water resources would not be privatized but the service may. The private sector would be encouraged to operate the system but the performance would be monitored by the asset holder (Board of Directors) as well as the regulator. In order to establish such regional utilities, the Palestinian Water Authority has sought the assistance of the World Bank that moved to accommodate the needs of the water sector. The first experience was in Gaza Strip and now in Bethlehem District and Hebron (See World Bank”s Report No. 47657-GZ, 2009,-P 20-23).

According to the Palestinian central bureau of statistics PCBS (2008), a household environment survey has been conducted and it was found that 60% of Hebron District households surveyed were connected to networks. Households that were not connected or receiving insufficient water had varying coping strategies. 21% of households buy water from tankers of a median quantity of 7 m³ monthly and
an average cost of 9 $/m³, 14% of households use rainfall collection wells of a median quantity of 5 m³ and average cost of 6 $/m³ and only 5% of households use spring water of a median quantity of 11 m³.

7.2.4 Recommendations and Implementation Tools:

The future Hebron District water infrastructure plan must provide the policy framework that will guide current and future service network standards, upgrading and extensions. The water authority and Hebron District municipalities are responsible for storm water development. Hebron District municipalities should also work to develop the public utilities in order to develop an integrated servicing plan. The successful implementation of the plan could be achieved in the case the following recommendations are adopted via different parts:

a. The Palestinian Political and administrative level should solve the water issue with the Israeli side soon. In case, no solution was found, the decision maker should follow the strategy of water reuse, reducing water consumption as much possible without affecting the health condition and also finding new water resources (e.g. collecting rainfall water, house water treatment plants).

b. According to meetings with governmental institutions planners and engineers (2008, 2009) like Ministry of Local Government, Ministry of Planning, Ministry of Finance and Water Authority in partnership with Hebron District local authorities, it was noticed that there is no coordination between these organizations since they were established after Oslo 1994 agreement. Thus, there is no actual unified work frame that manages and coordinates these organizations practically, and due to this it is strongly recommended to develop a new Palestinian water management and development institutional work plan that involve the work of all related organizations and people. This kind of plan will save time, money and effort and will increase the entire governmental performance in this strategic field.

c. A large amount of water, around (25%) is lost without any benefit because of the leakage, old water networks or due to damages by the local people construction
excavations. This condition needs network’s rehabilitation and maintenance as well as replacing the existing deteriorated water network to minimize water loss in the entire system. Therefore, Hebron municipalities are advised to increase the fundraising for maintaining the existing water networks expanding them.

d. The Water Authority along with Hebron municipalities are recommended to prepare a district plan that set the priorities and the urgent water networks expansion that is required for the different areas in Hebron, especially for the densely-populated areas that have no water network.

e. According to Save Children Study (2003) recommendations, in order to avoid deterioration of environmental health conditions and health care, key points should be taken into consideration which are ‘– Appropriate programmatic options to improve water quality and quantity, ‘– Provision of reliable, treated piped water is probably the single most important intervention for improving health and quality of life in the West Bank water supply and sanitation program, ‘– Purification of tanker water, ‘– Development of appropriate sanitation systems, ‘– Appropriate water quality monitoring systems and procedures, ‘– Enhancement of the PWA role in monitoring water sources, ‘– Improvement of district-level capacity for water quality monitoring”(A.Sh’ar, P. Kelly&E. Kleinau- Save Children, 2003.P57)

a. In order to increase the water resources, it is recommended to rehabilitate the existing springs and old wells for domestic and agricultural use in order to minimize the use of domestic water for agriculture.

b. Most of the studies conducted on water pollution in Palestine or Hebron District by NGOs like ARIJ and PHG and universities like An Najah, Birzeit and PPU besides the individual researchers like M. Abu Shareik, I. Khatib and O. Zemmo show that water resources suffer from daily pollution and threats because of local people’s activities and the absence of public awareness. Some people dump the waste in springs; construct deep water tanks …etc. Such activities and pollution should be stopped via governmental organizations’ observation and
control and via public awareness and educational projects to make the people themselves part of water resource protection instead of being a source of water pollution.

c. Activating and emphasizing the law that binds the owners of the buildings to construct collection wells for each building and control the quality of this water by the concerned organizations like environment and health.

d. The Palestinian Water Authority and the municipalities are strongly advised to work together in order to bring the donors back within a framework of more coordinated and strategic investment. International donors are important stakeholders in the Palestinian water sector and their incentives and behavior greatly affect investment outcomes.

e. The Municipalities along with Ministry of finance should support the water prices\(^1\) and control the tariff system mainly for water carried by private trucks. Also the Ministry of Social Affairs should have supporting water programs for poor people because most of the poor people cannot afford to buy drinking water and instead they use unhealthy water which increases the danger of diseases and even death.

f. The Researches’ Center and Palestinian universities are strongly recommended to increase and support the research aims of developing the water sector and preventing water pollution.

\(^1\) "Several indicators show that poverty remained very high or increased in the West Bank. Based on the survey findings, the monthly cost of electricity and water may be as high as 40% of the total household income. Fewer Household members are fully employed; the ability or willingness of households to pay bills for piped water and electricity dropped; and more households sold property or borrowed money to meet the basic needs according to comparisons of results from baseline and follow-up environmental health assessments. The socioeconomic status got worse, as evidenced by the following:

- Fewer household members are fully employed at follow-up than were at baseline, with the range of members employed dropping from 0-6 to 0-3.
- Monthly Median household income prior to the survey remained at the hardship level of about $1041 (500 NIS) per month ($180 per capita annually); and three in four households continue to live below the poverty level of $332 (1,600 NIS) per month ($564 per capita annually).
- The ability or willingness of households with piped water to pay their water bill dropped from 31% at baseline to 24%, and on-time payment of the electricity bill dropped from 51% at baseline to 41%.
- More households sold property (21% versus 17% at baseline) or borrowed money (60% versus 56% at baseline) to meet the basic needs” (A.Sh’a’ar, P. Kelly&E. Kleinau- Save Children, 2003.Pxiii).
7.3 Wastewater: 

After the establishment of Palestinian Authority and Oslo agreement, the Palestinians expected to have more access to water resources and aquifer tanks and to improve wastewater and sanitation services. On the contrary, the current situations and the actual outcome have been the opposite, and hence after fifteen years of delay and disagreement, there is a lack of wastewater networks and effective wastewater treatment. Hebron’s treatment plant has been approved of by the Palestinian Water Authority and the Israeli civil administration, but this approval is still on paper. There is no action on the ground because the project’s fund was stopped during the second intifada and due to the bad political circumstances.

In Hebron District, about 30% of the people are served by wastewater collection network such as Hebron city and the two refugee camps (AL Fawwr and Al Aroub). The rest of the cities, towns and villages have lack of sewerage infrastructure (See MAS Report, 2009.P-83-85). Currently, Hebron municipality operates and maintains the wastewater network and treatments plant. The sanitary department of the municipality coordinates the connection services, supervises the implementation of sewerage projects and deals with the public complaints. There are designated engineers, technical staff and service crews for operation and maintenance of the network and the treatment plants. The amount of fees collected from municipalities' households and businesses do not cover the cost of operation and maintenance for wastewater treatment plants.

The Palestinian Water Authority is the regulator of Water/Wastewater sector. Regarding wastewater, the Palestinian Water Authority will be responsible for the management of Wastewater in Palestine. It needs to study wastewater projects, to put the standards for design, quality control and technical specifications and to monitor its implementation according to, the researches, studies and supervisions carried in relation

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1 The author discussed the wastewater environmental impact and presented the recommendations about them in chapter six. Now the author will discuss, analyze and recommend again networks treatment plans in brief. Hence, the waste water sector in Hebron is still new and so is the attention to upgrade it and build new networks as well as new treatment plants.
with the wastewater sector. Currently, a proposed law for integrating water and wastewater services under one regional utility is in front of the Palestinian Legislative Council and needs the approval.

According to the estimated figures of water consumption mentioned previously, the estimated wastewater generated from Hebron District will reach a total of 22,500 cubic meters per day assuming that all municipalities and local villages have water networks and are connected to a wastewater network. This volume of wastewater could form another source of water supply when it is treated especially for agriculture re-uses.

Picture (7:18): Wastewater Drainage from an Israeli Settlement to the Palestinian Agricultural Lands (Source, M. Aliew, 2008.P19)

The municipality of Hebron, Dora, Yatta and Halhul have completed a study to implement a wastewater network and treatment plants for the areas inside the municipalities’ borders. Moreover, preliminary approval of the location has been obtained from the Israeli Palestinian joint water technical committee. The industrial waste is being disposed in the existing treatment plants without undergoing any pre-treatment, and the treated effluent from Hebron treatment plant is discharged to the geologically sensitive valleys east of Hebron. Therefore, it is inevitable to alleviate the
negative impact of the existing sewerage conditions and to have an integrated wastewater infrastructure with an overall sewerage schemes. This will improve human health, protect the environment & ground water and improve the living standards of the total population.

Table (7:3) Wastewater Information Summary Sheet¹

<table>
<thead>
<tr>
<th>LOCALITY</th>
<th>Problems</th>
<th>Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEBRON</td>
<td>Loaded T.P. &amp; Industrial wastewater</td>
<td>Expansion Rehabilitation &amp; new W.W.T.P</td>
</tr>
<tr>
<td>DORA</td>
<td>High Cost of operation &amp; maintenance of P. T.P</td>
<td>Connect with Hebron after expansion</td>
</tr>
<tr>
<td>YATTA</td>
<td>Pollution &amp; Social problems</td>
<td>W.W. Network &amp; W.W.T.P</td>
</tr>
<tr>
<td>DAHRIYAH</td>
<td>Pollution &amp; Social problems</td>
<td>Implementation of W.W. Network</td>
</tr>
<tr>
<td>HALHULE</td>
<td>Pollution of ground water</td>
<td>Implementation of W.W. Network</td>
</tr>
<tr>
<td>SEAAR</td>
<td>Lack of maintenance</td>
<td>Maintenance and expansion of Network &amp; New Pumping Station</td>
</tr>
<tr>
<td>BAYIE OMMAR</td>
<td>Pollution of ground water</td>
<td>Implementation of W.W. Network</td>
</tr>
<tr>
<td>ETHNA</td>
<td>Pollution of ground water</td>
<td>Implementation of W.W. Network</td>
</tr>
<tr>
<td>TARQUOMYAH</td>
<td>Pollution of ground water</td>
<td>Implementation of W.W. Network</td>
</tr>
</tbody>
</table>

All the jobs and tasks that must be done to form an acceptable and reliable network (rehabilitation of existing network, implementation of existing plans for both network and treatment plants, expansion of network and treatment plants according to need for urban expansion) face the challenges of the high cost of implementation. The situation is made worse by Israel because of its procedures of not permitting the processes of construction in the system.

7.3.1 Recommendations & Proposals

a. From the study area’s visits, it was noticed that the water networks in many places in Hebron city and refugee camps are damaged and the water drainage is in the

¹ The resource of this data is mentioned in the Table comes from the author’s observations and the study area’s visits in 2008 & 2009, also from the Hebron Cities municipalities’ engineer and Water Authority-Hebron Office (Internal data 2009).
streets causing a bad smell, increasing illnesses and polluting the water. Such conditions need urgent Wastewater maintenance and rehabilitation, and a regular inspection of the network to avoid any new damages.

b. Hebron District is characterized by mountainous topography and is considered a good place for wastewater networks because the wastewater will drain to treatment plants depending on gravity. Planners can benefit for this nature and can construct new networks or expand the existing one with low and reasonable prices.

c. The Hebron city’s treatment plants are very old and not sufficient by any means. In order to solve this problem, new big and modern wastewater treatment plants should be constructed not only for Hebron city but also for the entire district areas. According to wastewater networks design specialist consultant M. Ahmad (2009), it is very hard to find a proper place for treatment plants because of the land availability and people’s rejection to have treatment plants close to their houses or lands. However, one treatment plant could have a proper place inside Hebron district area but if the planners/municipalities have many treatment plants, it will be very difficult to achieve this goal.

d. Rehabilitation of the existing plants should be given the priority. All future programs should integrate reuse wherever possible and all the main cities and towns in Hebron District should be covered by networks as soon as possible. It is necessary to investigate and support the temporary projects that could be conducted in Hebron District on waste water management and treatment.

e. Encouraging cooperative planning and partnerships between Hebron District, public utilities and stakeholders in the stewardship and conservation of water and the disposal or reuse of wastewater.

f. Most of the Palestinian/Hebron people strongly believe that the water generated from wastewater treatment plants is very bad and there is no way to reuse it even in irrigation. This situation needs public awareness and more involvement via religious and key figures in Hebron. Hence, treating wastewater is a resource that should be
protected, managed and utilized while recognizing its importance as a part of the ecosystem and the hydrologic cycle.

g. Instead of water treating the water that comes out from treatment plants into wades or open areas, the framers can use treated wastewater to irrigate their trees and natural heritage areas. This attention needs governmental support and sharing from private sector in constructing water distribution networks or pumps...etc.

h. Wastewater projects and sanitation should increase and more focus should be on high priority projects that bring real benefits to the Palestinians and more particularly to the poor and notably the poor people in the rural areas. Development of new water sources from wastewater will be a priority and reducing unaccounted-for water could also increase supply considerably. Wastewater projects could also be a priority because of their high social and environmental benefits (see more in the World Bank”s Report No. 47657-GZ, 2009,-P 46-50).
Chapter Eight

Land use, Housing and Urban Expansion Main Findings and Sustainability Tools and Recommendations

8.1 Introduction

8.2 Review of Related Literature

8.3 Land use Classifications

8.4 Land Use Main Findings, Problems and Analysis

8.5 General Policies and Plans Required to Improve the Sustainable Land Use Development

8.6 Housing in Hebron District: Figures, Challenges and Development Policies

8.7 Urban Expansion, Characters and Challenges
8.1 Introduction

The effective land management of Hebron District is negatively affected by the absence of urban planning for the natural resources and integrating it with land use management. Besides, the policies of the Israeli occupation since 1967 have increased the restrictions on the use of land for various purposes: for security and establishing new settlement. Hence, all the urbanization and the construction of new roads, infrastructure networks, and water wells are prohibited without the permission and approval of the Israeli army, mainly in area C.

“Land use planning means the scientific, aesthetic, and orderly disposition of land, resources, facilities and services with a view to securing the physical, economic and social efficiency, health and well-being of urban and rural communities”. (CIP 2000& AUMA, 2007.P1)

Land use planning is one of the fundamental aspects that should be taken into consideration in any future urban growth management and sustainable development plans. The land use in Hebron District is facing many conflicts. If we understand the main reasons of these conflicts, then we can find a suitable solution to solve them. General problems and difficulties are facing sustainable land use development in Hebron District such as the existing political situation, lack in availability of land for planning, separating the land of the cities and villages by setting boundaries (Area B& Area C), availability to have continuous and integrated plans which is very difficult, weakness of Hebron District’s force, weak cooperation between concerned sides, unavailability of required necessary budgets to compensate people, lack of people awareness in related subjects, private ownership in most of the lands and lack of laws’ clarity in many elements. In this study, the prepared and designed questionnaires about the land use management subject (see attachment) to be filled by the decision makers in Hebron District, ministries and municipalities and key figures in the different organizations (180 Questionnaires were distributed and 158 were returned back filled out). The questions were designed to investigate several issues like: what are the policy
tools that the Palestinian ministries and Hebron municipalities should adopt in land use planning? Do these urban policies comply with the Palestinian national development plans? What are the land use tools used at the national, district and local level? What are the urban land use, urban environment, and urban expansion indicators used? Does the municipality include the public in the process of decision making? These questions cover different municipalities departments’ activities related to land use planning and management like administrative department, planning department, road department and the environmental department. The questions discussed the general policies, administrative policies, environmental and land use policies, the structure of the municipality, decision making and public participation, also land use policies and the urban planning tools that are used by the municipalities. The questions also aimed to investigate the level of cooperation between the municipalities and the government’s organizations. Moreover, many public meetings were held for the same purpose (2009, 2010) and during the the meetings, the following issues were discussed:

a. The increase in population numbers and requirements of new houses in addition to their relation to land use /urban expansion and main demographic challenges in Hebron Districts

b. The relation between urban land use management and environmental policies adopted at the district, municipalities and local levels and also the master plan preparing and after that implementation procurers /mechanisms

c. The Palestinian institutional structure and mandates in land use and the flow of information from the national to the local level and vice versa, also the Palestinian rules and regulations related to land use, and the actual conditions¹.

d. In general, land use planning and management and how it could be part of Hebron District’s sustainable development plan.

¹ Palestinian urban planning laws and local government system were discussed in chapter three in details.
“Land-use planning is a major concern of many urban and regional planners, especially those involved with government, because it is a direct input to the formulation of zoning ordinances and other land development regulations. It may be expected to become an even more active field of planning with the recent signing into law of the 1991 Local Government code, which decentralizes many planning functions and responsibilities to local governments. This means that more planners are going to be engaged in land use planning as the initiative and responsibility for this activity shifts from a handful of national planning agencies to over a thousand local government planning and development offices” (J. Kaiser, el.1995 & H. Faidi, 2007.P11).

Finally the main land use problems facing Hebron district cities are the uncontrolled urban growth, random house building and the unplanned land use developments, mainly for the areas outside the municipalities’ borders. These land use problems also include construction above agricultural land, environment degradation, pollution of sensitive land and water resources, damage or loss of cultural heritage and old buildings, reducing the open space and green areas ...etc. Therefore, there is an urgent need for land use management and land development policies especially because of limited land availability in such area as Hebron as well as the whole the West Bank which also need an urgent action and new urban sustainable development policies.
8.2 Review of Related Literature

Land use studies were used in Hebron District only when the master plans were prepared by Ministry of Local Government, municipalities and urban planning design consulting offices. Hence, the main purpose of all master plans is to classify the areas to residential, commercial and industrial areas. Unfortunately though, there are no detailed or significant land use studies conducted. In the following section, the author will present and discuss this condition. From the author study areas observations and meetings with urban planning faculties in Birziet, AN-NajaH and PPU universities (2009) and also Hebron municipalities’ engineers (2009) and the urban planning engineers in Ministry of Local Government and Ministry of Planning (2008-2009), it was noted that there are no proper or valid engineering and urban planning studies for land use in Hebron District. The following are the main studies conducted on land use/Housing.

1. The ministry of Planning prepared a development study in 2003 concerning the Palestinian need and a short term plan. According to this study, part of the land use aspect was generally discussed and concentrating on Hebron municipality border only. The aim of study was to attain financial aid from international donors. The study used available data at that time in different ministries but there was no field study or surveys conducted.

2. Hebron municipality prepared unpublished studies for GIS mapping in Hebron city only and the land use part of that, only field conditions without any discussion. Moreover, the maps are still limited and not used for development.

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1 Municipalities are the core institutions in sustainable development plans, but these municipalities need support and fund to improve the institutional strengthening and capacity building like training, seminars, exchange of best practices, internal and external information exchange…etc, also clarifying each of the municipal employee's roles and functions, bodies, national authorities and agencies, also increasing the power of municipalities and local authorities (decentralization). There should be a clear definition of the roles and functions of each department in the municipality. With cooperation and coordination between the different parties, all of these actions could increase the roles of municipalities and local councils in land use management and of course sustainability.
planning because more statistics, surveys, studies and urban profiles should be downloaded on the maps before using it in a sufficient way.

3. Regarding the housing studies, PECDAR (Palestine Economic Council for Development and Reconstruction) prepared a study of Housing in the West Bank, in 2007. The study discussed the number of houses needed and the ecumenical impact of housing construction sector on the Palestinian economy. Besides, the Ministry of Housing and Public Works has conducted surveying and miner assessment studies about the housing sector in Hebron District, but none of these studies put or laid a sustainable development plan for the housing sector in Hebron distract. However, part of these studies will be presented later in this chapter.

Finally and until the time of this research, there is no study conducted in Hebron District to have sustainable land use plan as all of the researches and studies are conducted for small consulting works or for assessment needs only or by engineering students and academic researches. This is not the case in all Palestinian districts like Ramallah and Nablus which have more studies and researches about land use because the first one is considered the administrative capital and the second has An-Najah University. Besides, other reasons are related to the influence and political/administrative issue. The references and previous studies conducted on this field are indicated in this chapter references.
8.3 Land use Classifications

According to the available references and to the author’s observation, land use classification in Hebron started 100 years ago at the end of the Ottomans’ period. Land use was marked and in some places is still marked on the master plan using different colors for major uses (e.g. residential, industrial and agricultural areas). It is also noted that the basis of land use management process started after the Palestinian Authority was established according to Oslo. The major step that was taken soon after that was setting up the Land Authority which is the responsible body for land registration, mapping and surveys. “The Land Authority, Ministry of Finance, Ministry of Local Government, Ministry of Public Works and Housing, and the office of the President all take Part in administering land in PNA areas. Until 2002, each ministry and the President’s office exercised different powers in administering the land. Their Mandates and exercise of authority changed dramatically after the offsetting up the Land Authority in 2002” (AMMA, 2007.P5)

8.3.1 Political Classification

According to the Oslo Interim Agreement in September 1995 between the Palestinian Authority and the Israelis, the Palestinian areas in the West Bank were divided into three categories Area A, Area B and Area C and the purpose is to facilitated a phased withdrawal by the Israeli military forces from these areas until reaching a final status agreement\(^1\). In this interim arrangement, area A is area under the Palestinian control,

\(^1\) The following is a list of the most pertinent laws to land administration still in force in Palestine:
- Presidential Decree No. 10 of 2002
- Ottoman Land Law of 1854.
- Law for Settling Disputes over Land Property Rights No. 9 of 1928.
- Land Ordinance (Acquisition of Land for Public Purposes) No. 24 (1943)
- Law for Division of Common Immovable Assets.
- Law for Using Immovable Assets as Collateral.
- Amended Land Law No. 25 (of 1933).
- Land Transfer Law No. 39 (of 1920).
- Land Registry Law No. 30 (of 1944).
- Public Land Law No. 6 (of 1942).
- Land Restoration and Reclamation Law No. 10 (of 1921).
area B is under Palestinian civil administration and Israeli security control while area C is under a full Israeli control see map (8.1), below:

Map (8.1): The Palestinian Areas (A, B & C) in Hebron District as per Oslo II Interim Agreement (Source: Hebron Municipality-GIS, 2008)

The above political classifications are changed from time to time depending on the peace process progress. It is expected at the final agreement between the Palestinians and Israelis as many political figures said, the Palestinian people will establish their state in most of the land of the West Bank (1967 borders), and in that case all of the above land will be one unit and these classifications will be disappear.

- Law No. 5 of 1960 on Redressing Transgressions on State Land.
- Law on the Acquisition of Land for Public Purposes No. 2 of 1953, in force in West Bank.
(See ,AMMA,2007.P3)
8.3.2 Administrative and Physical Land use Classification

After the author reviewed and referred back to the recent updated references like Ministry of Local Government and NGOs like Arij’s publications (1995 and 2004) and LRC report (2007), the Analyses of the land use in Hebron District are indicated as follows:

a. Around 45% of the District’s lands are classified as pastures which are located in the eastern plains.

b. Around 23% of the District’s lands are classified as open spaces with little or no vegetation and these areas are mainly around the built-up areas in the south-eastern and western part of the District.

c. Around 12% are Israeli military bases.

d. Around 7% are agricultural lands and these are located in the middle, northern and western parts of the District along the western shores of the Dead Sea.

e. Around 6.5% are Palestinian built-up areas and are mainly clustered in the middle and western parts of the Governorate

f. Around 2% are forests and semi-natural areas and these are mainly in the northern and western part of the District

g. Around 1.7% is the built-up area of Israeli settlements.

h. Around 1.6% is classified as mine, dump, construction sites and others.

When the Palestinian Authority was established in 1994, the view of land use management and land classification was not clear. According to J. Umaer (interview, 2010), there was a big and long discussion about the best use of land especially the governmental lands, and how to coordinate between the different ministers and municipalities in order to avoid any valuation. Due to this, the Palestinian law identified the responsibilities of the Land Authority of the ministries for land regulation as follows:

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1 The author noted here that no accurate (100%) land use classification studies/statistics are available and the percentage here is the best data available at the study’s time. However, this research is not a consulting work about land use, and so the author believes that these data are sufficient for the research’s report.
“Ministry of Justice: Monitoring departments of Land Registration and Immovable Assets.

- **Ministry of Public Works and Housing**: had the mandate over Surveying Departments responsible for the inspection of land schemes in registration applications referred by the Land Registration Department.

- **Ministry of Finance**: supervises Land and Property Tax Departments.

- **Ministry of Local Government**: controls central, district and local (physical) planning departments, issues master plans for municipalities and village councils and grants building licenses”. (AMMA, 2007.P5)

### 8.3.2.1 Built-up Areas, Old Cities and Cultural Heritage

As mentioned previously, the total area of the Palestinian built-up areas is around 6.5% of the total area in Hebron. This means that there are more spaces and lands compared to other Palestinian districts. The rest, around 93% could e used and planned in a way that could save the natural resources and achieve the sustainable development goals. The built-up area in Hebron District contains 153 Palestinian built-up areas, 16 of them have municipalities like (Hebron City, Dora, Halhul, Yatta, Seear, Ethna, Beit Ommar, Daheriya, Beit Awwa, Taragumia, Ethna …etc), two refugee camps (Al-Fawwar and Al-'Aroub camps), and the remaining are villages and rural areas (Bedouin). All of the big cities and towns in Hebron are built above old cities. Some cities, like Hebron, still have the same buildings which were built hundreds of years ago, In Hebron, a high percentage of housing and buildings” cladding and elevations are white stone and any visitor to Hebron can find this nature of building everywhere. It gives the district special identification and could also be part of tourist attractions and plans.
Map (8.2): Hebron District Land use Classification (Source: ARIJ-GIS, 2009).

The main built-up areas in Hebron District are the old cities and cultural heritage places, mainly the old city of Hebron which is a unique and authentic heritage site. Its buildings and architectural units go back to the Ayyubids, Mamluks and Ottoman Turks’ eras (more than 1000 years ago). It enjoys an architectural splendor with its numerous archaeological and historic sites, archways, tiny streets and old markets.

Map (8.3): Hebron Old City Master Plan (Source: HOCRC, 2009).

The most famous old city zones are: Sheikh Ali Al Baka”, Al Qazzazine, Al Sawakneh. Hebron also includes the following mosques: zawiyas (sufi lodges) and ribats (small fortifications): Ribats: Makki, Al Jamai’ili, Al Tawashi, Al Mansouri (with its old architectural traits) as well as the fort on the South-Western side of Al Ibrahimi Mosque.

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1 The author discussed Hebron old city as a part of cultural heritage in chapter five and here to show the land use components and the main zones in the old city which is one of the oldest cities in the entire world. Recently, as shown before, Hebron’s municipality and the UNESCO coordinate to consider Hebron’s old city as part of the global cultural heritage.
Another 150 smaller mosques (Masajed) as well as religious schools (Madrassah) located near mosques are found in the city such as the Husseiniya and the Fakhriya schools (see Hebron Old City Renovation, 2007).

Picture (8.2): Inside Hebron Old City, Showing the Urban Fabric (Source: Author, 2009). Hebron city’s constitution and shape were clearly affected by many important factors including the location of Abraham’s tomb/mosque. Thus, it could not grow to a large old and new city with more than 200,000 people with modern architecture, landscape and different urban features. The other factor which had an impact on the old city morphology and nature is its location in the top of Hebron Mountains and valleys characterized by a variety of local small rivers, fruit trees, vineyards, olive groves etc. in addition to a multiplicity of water fountains.

The Ibrahimi Mosque is located in the south of old city which is not similar to other Arab and Islamic old cities in which the mosque is usually in the center of city and all commercial and industrial activities around are around it. In Hebron, the ventral mosque was located first on the edge of town and the city developed in all directions. The Old City’s landscape and land use decided the close area land use characters. All the inner streets of the Old City continue with new and wider street like Wadi Toffah Street, Al Shalalah Street, Beir Al Sabaa Street …etc. All these roads have different trades and shopping centers on both sides. Recently and after establishing Hebron Old City’s committee, public spaces inside the Old City have been developed and maintained. Now, a high percentage of the Old City has municipal and public services (water, electricity, sewerage and paved road networks). However, the Old City has construction and development projects which have not stopped for hundreds of years. Many parts of the current renovation works were undertaken in the early 20th Century like Old City streets landscape, drainage system and water supply.

Picture (8.5): Children Modern Playing Area at Hebron Old City (Source: HRC, 2009).
The other old cities in Hebron like Dura, Dahriyah and Halhul were built thousands of years ago. The references in this regard said that these old cities were damaged and many of the historical and old places were totally demolished like what happened in Dora Old City, in 1997 when the municipality used bulldozers to demolished large part of the Old City in order to open a new road. However, after the establishment of the Palestinian Authority, more discussions were held to save these old cities and integrate them with general cities’ land use. However, until now and in the absence of law implementation, these cities need more protection and urgent project to renovate and margin them with the surrounding urban content. Dura and Dahriyah cities are a centre for about 100 towns, villages such as Beit Awwa, Deir Samit, Khursa, Burjj…etc.

Picture (8.6): Dahriya Old City with New Buildings (Source: Author, 2009).
8.3.2.2 Israeli Settlements

The story of Israeli settlement in Hebron started after the 1967 war when Israel controlled the entire West Bank. Most of these settlements are built on top of mountains and connected to the rest of Israeli settlements by transportation networks which the Palestinians are prohibited to use. The settlements were designed and built by the Israeli government in which each settlement has most of the facilities and surrounded with walls and fences for security purposes. According to H. Hantash, at the end of 2010 there were 31 settlements in Hebron District with a built-up area of 27.4 km² (which is around 2.0% of the total area of Hebron District) as illustrated in the following map. This number does not include the municipal area. (see also Foundation for Middle East Peace, Washington- Settlement Report, June, 2006)

Map (8.4): Israeli Colonies Inside Hebron District (Source: Drawing By Author)
“These settlements are distributed along three nearly parallel lines in addition to the existence of a settlement belt at the southern section of the District. The settlement of Kiryat Arba and its northern neighborhood Kharsina (Ramat Mamre), are the largest settlements in the District with a total population of 7000 extremist settlers. As for the total settler population in the Governorate of Hebron, it has reached about 15,000 (see LRC, Report, 2006.P5).

However and according to N. Makky (2005), "The main constraint facing the implementation of the proposed policies is due to the unstable political conditions characterized by Israeli military occupation in the West Bank, the lack of Palestinian sovereignty over their lands and resources, the segregation Wall constructed by Israel on the Palestinian lands, together with the fragmentation of the West Bank into smaller Israeli controlled cantons are the main constraints the Palestinians are facing in implementing a sound sustainable development. Unless the Israeli occupation fully ends

1 Most of the Israeli settlements in Hebron have been established during the early eighties except for the settlement of Kiryat Arba which was established in 1968. The rest of the settlements were established after the signing of the 1979 peace treaty between Egypt and Israel.
in the occupied Palestinian territory and the Israeli forces withdraw to the Green Line (the pre 1967 war Armistice line), the prospects for sustainable development in all sectors will be undermined".

8.3.2.3Agricultural Areas

The agricultural sector was discussed in chapter five, but for economical point view. Here, the author will continue his discussion of this important sector but for the land use part. As shown before, a lot of the Palestinians work in the agricultural field and for them land is the most valuable thing because it is their source of income and the people have connection to their land and life. Due to this, any new development plan should consider the needs of local farmers, their requirements and history. According to the details and annexes of the 1996 urban planning laws which was used to prepare master plans in West Bank, the agricultural areas are classified into two categories: agricultural area (A) which includes buildings and some urban projects of no more than 25% of the total area of land, and agricultural area (B) which also includes buildings (two floors only) and the total building area is no more than 5% of the total land zones. According to the Ministry of Agriculture (2009), the agricultural area in Hebron District is estimated at around 36 %, whereas the remaining areas are used for different purpose like building, roads, industrial areas, desert, forest…etc.
The number of people in Hebron is doubled in average every 25 years and the required number of houses and flats will also be doubled in the same period compared to the existing conditions. The urban expansion will have many directions (see urban expansion later) and the major direction will affect the agricultural lands. This fact indicates that the future urban expansion will be at the expense of the agricultural land. Taking into consideration that the Palestinians have few agricultural areas, the available solution for constructing new houses will be very hard and should protect the agricultural areas as much as possible.

“At the farm level, the cultural and conservation practices are important factors leading to land degradation as many farmers still use the same methodologies and farming styles which were used hundreds of years ago. These practices are soil tillage and seedbed preparation, management of harvest residues, plantation density, fertilization, uncontrolled spread of industrial plantations and mechanized agriculture, control of pests and diseases weeding, and combination of crops in time and in space. On the other
hand, over the centuries the Palestinian farmers and grazers have developed farming systems that were compatible with their environment like rain water harvesting well to use the waste in summer. These systems are permitted with a steady level of production that did not entail land degradation if it is rather low “(see B.Dudeen –LRC, -P3 and also PARC/Arab, Report NO.8.P 19).

Table (8:1) Agricultural Sector Indicator (PCBS, 2008)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Agricultural Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of Field Crops</td>
<td>506,686</td>
</tr>
<tr>
<td>Area of Vegetables*</td>
<td>179,139</td>
</tr>
<tr>
<td>Area of Fruit Trees</td>
<td>1,147,525</td>
</tr>
<tr>
<td>Number of Cattle</td>
<td>33,746</td>
</tr>
<tr>
<td>Number of Sheep</td>
<td>803,165</td>
</tr>
<tr>
<td>Number of Goats</td>
<td>371,198</td>
</tr>
<tr>
<td>Number of Broilers (Thousands birds)</td>
<td>40,641</td>
</tr>
<tr>
<td>Number of Layers (Thousands birds)</td>
<td>2,556</td>
</tr>
<tr>
<td>Number of Beehives</td>
<td>64,685</td>
</tr>
</tbody>
</table>

After establishing the Palestinian Authority and new NGOs like Agricultural Relief and Save the Children which fund and supervise many agricultural and farming development projects in different places in the West Bank, some of these projects are concerned with house gardens or small family farms especially in villages. Hence, most of the people have land around their houses and these lands are not used. The new projects encourage growing vegetables and fruits around their houses are extremely encouraged. This project will develop the concept of land use management and help the local people in their life expenditures.
8.3.2.4 Forests, Green and Biodiversity Areas

The author discussed this subject in chapter six which includes the specifications and sustainable plan to protect and develop the green area and natural heritage (e.g. forests, sensitive areas and biodiversity places). In this section, the author will present and discuss this matter from the land use aspect and how the forests and green areas could be part of Hebron district’s sustainable development plan. “The segregation zone in Hebron District would cause isolation and fragmentation of forested areas. The forests are considered as major recreational areas and are mainly concentrated in the western and middle parts of Hebron District where 17.5 km² of forested and semi-natural area would be isolated between the Western segregation wall and the Green line in addition to 3.8 km² that will be segregated in the southern and eastern segregation zone which is 66.5% of the forested and semi natural areas in Hebron District that will be isolated” (Ministry Of Agriculture, Hebron Office, 2008).

Most of these forests were planted during the British Mandate and Jordanian administration, while a small percentage was made up of remnants of natural forests. Unfortunately, the new separation wall cut and damaged a large part of these green areas which in turn increased environmental degradation and made the land use management more difficult. The main concern of these areas is to protect them and avoid them from any urban expansion of damage. The planners of Hebron’s areas should search for and find attractive and inspiring solutions to provide the people with the infrastructure and housing needed far away from this area. Part of these policies will be presented in the recommendations later.
8.3.2.5 Industrial Areas

The industrial sector of any economical and sustainable planning is one of the major sectors and source of employment, capital formation, accumulation and generation of wealth. The industrial sector in the West Bank and in Hebron District has faced many obstacles related to land and site due to the political situation. Hebron is fundamentally a mining city that is built out of the stone quarries from the surrounding hills of the original settlement. Hebron’s architectural character is defined by this relationship between the built environment and the skilful transformation of the sources of its urban fabric. In keeping up with Hebron’s distinctive urban form and quarrying to a lesser extent, industrial Areas will continue within the District Planning Area ensuring that Hebron continues to be built out of local resources using local craftsmanship. Minerals and quarries are particularly important to cities because they provide materials for the construction of roads, sewers, sidewalks, bridges, and other infrastructure, as well as certain manufacturing and production processes.

“The connections between material and energy flows and land use are neglected in most work on industrial ecology or socio-economic metabolism. In its effort to establish
material and energy flow accounts in close connection with economic statistics, this work tended to neglect the spatial dimension, i.e. the concrete areas needed to extract the materials, process them within society” (H. Haberl, H. Schandl, 1998, P10)

In Hebron District, there is only one industrial area whose area is 2146 acres in Hebron municipality is located inside its borders. There are also many factories and construction industries in different places which are mainly light industries and many of them are polluted. Within the cities, there are approved industrial zones (Hebron Governorate Office-Planning Department, 2009). These zones have problems regarding the mixed use in some cases. These zones have more than half of their industries located within residential neighborhoods.

Picture (8.10): A labor in Glass Industry at Hebron (Source: Hebron University, 2008)

During the visits to the industrial areas such as Dora, Yatta and Tarqumya inside the Hebron District, it is clear that many villagers suffer from the existing craft area, light Industries construction factories and cutter stones that lie on the entrance of the cities and villages. Some of the industrial sites have water supply, sanitation, electricity, road and telecom services and still they have shortage in quantitative and qualitative manner in this item. There is no big technology industry in Hebron District. The following
Figure (8.1) shows the number and kinds of industries that exist in Hebron industrial areas:-

![Distribution of Existing industries in Hebron Industrial Areas](image)

**Figure (8.1): Distribution of Existing industries in Hebron Industrial Areas (Source: Drawing by Author)**

The above table shows the different industries types needed when land use sustainable development is started. Because we need to know which industrial activities are less polluting and which are most needed by people on a daily basis to be close to them and which are not needed on a daily basis to be more fair …etc. The Ministry of Industry and Economical Development along with other municipalities should arrange and control the current conditions via new regulations and policies before issuing any trade licenses and also should strictly implement new and sustainable the environmental standards.

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1 The data and number of all factories, workshops, handcrafts are renew each year in ministry of industry and national economy, also part of industries like food industries, or stone cutting factories they have also their own committees and the can find most of the required data in these organizations.
8.4 Land Use main Findings, Problems and Analysis

Sustainable development and city planning include many issues. In this section, in order to analyze the role of the municipalities and the problems faced by them regarding land use planning, a series of interviews and roundtable meetings were conducted with the decision makers and the engineers at these municipalities with the director of local government in Hebron District who is the organizing and monitoring body for the performance of the municipalities and village councils under their jurisdiction. During the interviews and roundtable meetings as well as questionnaires, the problems and weaknesses in the municipalities they show regarding the land use sustainable planning in Hebron District has all have been discussed in depth and the findings are as follows.

8.4.1 Problems in Municipal Administrative System

a. The municipalities’ staffs, which are mainly from the same area and the social relations between the Palestinians, prevent the manager from taking tough actions if the employees’ performance is bad besides the weakness of an executive body to enforce the legislations and prevent violations.

b. In general, the political and administrative system in whole Palestine causes a lack of coordination between key decision makers at the national level which of course increases the misunderstanding and miss-coordination between the second and third level in governmental sector.

c. The municipalities’ administrative and internal auditing laws are different from one municipality to another and there is no unified law that controls all municipalities under the same administrative procedures. All of these increase the weaknesses of a legal system to support the execution of laws.

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1 City planning involves the professional practice of integrating interdisciplinary knowledge from fields; such as, architecture, landscape architecture, engineering, economics, sociology, and natural sciences into key theories and principles for creating safe, livable, and sustainable communities. It also involves the application of theories and principles for organizing and maintaining human settlements to achieve essential public purposes and values. (H. Faidi, 2007. P1)
d. Unfortunately, the lack of coordination between the different departments inside the municipality itself and also between the municipality and the different ministries increase the bad conditions and waste the time and resources.

e. As mentioned in chapter three, the Ministry of Local Government audits the financial issues for all municipalities on a yearly basis. But none of these municipalities indicated that the personnel from the Local Government are delegated to do the financial monitoring which needs more professional capacities.

f. The municipalities of Hebron District were ignorant of the existence of the Palestinian development plan, the national policies for physical development and the Palestinian environmental strategy.

g. Until today, there is no data base to link all organizations working in urban planning and development, and mainly the municipalities which make overlapping and miss coordination between these municipalities” activities. In many cases, you can find projects repeated or conducted in a close municipality without any coordination between them or in many places infrastructure services are damaged and broken because there are no maps or data base to inform the construction people that there is an infrastructure pipe, cable...etc. at that point.

h. Since the establishment of the Palestinian Authority, many governmental organizations were established and each organization has its own program, but all of these plans did not link and margin plans from the national level to the local level. Moreover, a structure of information dissemination and channeling from one level of action to another is absent.

i. Businessmen and public people in part of Hebron District have access only to general data such as statistics, budgets and projects, but they do not have access to the details of the data. In the remaining parts, they have no access. However, some municipalities suffer from the absence of administrative and managing awareness of their mayors who believe that the data should be secret and that the
people should not know what happens inside the municipality. This can be considered as corruption.
j. The nature of the managers in most of the Arab world in general and Palestine in specific make them keep all issues under their control and decisions are mostly taken by them. This is the case in most of Hebron’s municipalities. The centralization of decision processing and in most of the municipalities is given to the managers. Engineers confirm that as much as the manager gives more free space for the staff to do the work, it will be better and the achievement will be even more.
k. At the same time, there is an initiative by Hebron municipality to develop a manual of the municipal structure and adopt the ISO standards for organization and management. However, this manual is still in progress and has not been adopted yet.
l. In an interview with the Local Government, the decision makers (2008, 2009) indicated that such municipality has a clear structure that is approved by the Ministry of Local Government and that municipalities have to abide by it.
m. Women still have a very limited role although they should be represented more, mainly in decision making matters, because women are more than 50% of the Palestinian people.
n. Concerning public participation: Hebron District municipalities usually include the public in decision making. Such examples include the establishment of sanitary sewers or street reconstruction. The municipality is convinced by the concerned people and discusses with them issues related to the project and also takes their recommendations into consideration. On the other hand, just 1 out of the 31 people who filled the community questionnaire and lived in Hebron city said that the municipality refers to public participation in the decision making process.
o. The lack of a clear internal evaluation strategy for the approaches that the municipality undertakes towards projects, however Dora municipality had the ISO certification in 2006.

p. There are no follow-up actions from both the local and national levels on projects funded by donors and the consistency of the projects with national policies and strategies.

q. There is a lack of professionals at the local level to either develop or implement strategies because there is no governmental policy to appoint professionals in the local communities and the voluntary work could not cover the people needs.

r. Most of Hebron municipalities’ engineers indicated that one of the main reasons that they lack updated clear strategies is due to lack of planners and appointed specialist consultants to develop or help implement sustainable development strategies.

s. Employees in the municipalities are seldom sent to capacity building courses or training due to the budget shortages or the work overload the employees face. The decision makers also indicated that often the wrong person is given the appropriate capacity building course or training. They also indicated that decisions regarding which employee will take the training or course are arbitrary and are up to the municipality council members.

8.4.2 Problems in Municipalities’ Financial System

a. The local municipalities’ income depends on revenues collected from people as fees for building permit, electricity and others. According to most of Hebron district accounts and financial managers, these incomes do not cover the municipality’s salaries and expenditures. These conditions will make Municipalities suffer from deficiencies in their budgets and will stop any development or new services to local people unless donors and government support is provided.
b. After the Second Intifada and the absence of law enforcement in many places especially in areas C, a new problem of collecting bills appeared and increased the risk for municipalities. And even now they have no budget to pay their employees’ salaries.

c. As it was discussed in chapter three, all of the taxes (like tax revenue and the transportation tax…etc) were forwarded to the Ministry of Finance, and after that the money is transferred to the municipalities and local councils. According to municipalities” financial managers in Hebron and Dora, most of the time the money is delayed and municipality plans are affected and the programs change all the time.

d. According to the public relation and business development mangers, foreign aid and international donors such as EU, UNDP, and USAID impose and fund only according to their agendas and programs. The municipalities should change or modify their direct programs and projects to have the funds mainly for services, infrastructure or emergency projects1.

8.4.3 Physical Land Use Conflicts2

In the following items, the author will present and discuss the main land use conflicts facing the planners and people of Hebron. The author will focus mainly

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1 Comprehensive urban assessment of the existing transportation and infrastructure networks like (water networks, wastewater networks, electricity, telecommunication networks, roads including their width, structural condition, presence of sidewalks, height of buildings around them, etc) is required before putting any land use management recommendations and prioritization of rehabilitation/creation works that need to be done to ensure adequate and efficient services, ensure the presence of adequate roads to make areas accessible to service and emergency vehicles and ensure the adequate provision of wastewater networks and the treatment of the wastewater in the nearest treatment plant, and ensuring the presence of an adequate drainage system and the presence of a good water network that provides clean water to all people (see more AMP, 2007)

2 Land use studies usually use quite straightforward categories to characterize different types of land use, e.g. land used for crops, grasslands, built-up area etc. We claim that integrating land use and industrial metabolism will require to develop indicators that analyze the colonization of landscapes or ecosystems in a way which relates land use processes to the function they serve for society, and to the natural processes which are affected by them. (H. Haberl, H. Schandl,1998. P17)
on the available documents and the study area visits besides the discussion with engineers and professionals in this regard.

8.4.3.1 Industrial Activities beside Agricultural Land and Residential Ones.

As mentioned in chapter five and six, there are three main industrial areas in Hebron district and there are hundreds of handcrafts, workshops and factories separated here and there. This kind of valuation makes land use conflict with the industrial area or factories located near residential and agricultural land. Many issues play a role in increasing these conflicts like lack of available lands because of closed situation, lack of coordination between concerned municipalities, and lack of implementation forces to apply the regulations.

The people in Hebron have a tradition that when any one plans to open his own business, he can start anywhere he wants mainly in area c and rural areas. Definitely, this issue is not accepted for legal and wise urban planning, but there is no control on such kind of business. Moreover, there are no restrictions or supervision for any one even the projects/factories that pollute the environment near the building areas …etc. Furthermore, family relations and strong social fabrication between the people prevent them from stopping any business that belongs to their family members or relatives. All of these have a very bad impact on land use management and future sustainable development plans. In addition, the limited land area pushes people to use the land available without any considerations to land location and or if it affects nearby areas or not.

These facilities are very important for the Palestinian economy, but on the other hand they have a bad effect on environment as it will affect the people especially their respiratory system and also cause. The noises created during the work at any time will affect the people. Layers have a bad impact on the soil fertility and the green areas.
Picture (8.11): Main Road between Dora and Hebron: at Left Side an Industrial Area and at Right Side Residential Buildings (Source: Author, 2009).

This type of land use conflict could be solved by creating homogeneity land uses zones inside the existing master plans or creating a suitable zone for industry for all the Hebron District area that is located out of the project area particularly as follows.

a. It is necessary to classify all kinds of industries/factories and categorize them according to negative impact, and depending on that improve the factories owners” awareness. This action perhaps will not solve problem 100%, but it will reduce the risk.1

b. Forbidding all polluting industries to be located in the handicraft area so the result will be a special zone in the existing master plans for handicraft and other services. So any non-polluting facility will not be found in these areas.

c. According to a similar case in RABM study (2006), it is recommended to create a green linear zone around these areas. The width of this zone may be around 8-15m which is a suitable distance to make an installation zone from the residential ones.

d. These factories should be discussed and planned as a part of transportation system. New projects should be funded for constructing and paving the roads leading to the factories and preparing these roads in a good way so as to bear heavy weight resulting from vans carrying stones, material and equipments.

e. In regard to the green areas inside the industrial zones in master plan, there are two ways which may be possible to activate their location. The first one is by collecting these areas to separate them from industrial zone and trying to have a good access for them to increase the availability and to activate the recreational areas for the city. The second one is to modify the use of green areas to another

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1 According to RABM report “All kinds of crafts like (carpentering, car services, blacksmithing, aluminum and glass shops…), must be transferred to the zone inside the cities master plan for each city which will be the handicraft zone. Most of the recent facilities which are considered as daily services as (food services, barber) are allowable through the residential zone”
use that relates to industry like (educational facilities as a desire of Dora municipality).

f. Studying available laws and developing them to suit the current and future situation and providing the adequate details to determine the kinds of allowed crafts, industries and putting them out of residential areas.

g. It is strongly recommended by environmental expert I. Khatib (interview, 2009) to establish green areas by using high trees and a special kind of plants around these factories and workshops. It is preferable that the factories are be surrounded by trees in all directions basically on the eastern and western sides. Also the foundations of these factories and workshops should be provided with a special soil that can prevent soil pollution from oil and hazardous leakages.

8.4.3.2 Petrol Station and Dangerous Uses near Residential Areas

Unfortunately, most of petrol stations in Hebron district area are located beside and very close to residential buildings. This means that any fire may start in these stations causing a catastrophe. Therefore, the nearby people will be in a great risk. The Ministry of Industry and National Economy requested an environmental impact study before giving trade license. However, the problem is caused from the old stations which have no law to force their owners transfer it to a safer place.

This problem is originally due to the Jordanian and Israeli periods when the old stations were established without considering the safety and environmental aspects and also because of lack in implementation force. Moreover, the local people in Hebron district raised their concerns about the place of this petrol station on the local people of Yatta. J. Jawaad (2009) said “we are under the risk all of the time. My house is about meters away from and if a fire starts, my house will be destroyed and perhaps my kids and family might die”. According to a discussion with head of local council -Khorsa village (2010), “Khorsa village is located at the crossroad of 32 villages and towns in the south of Hebron district Most recently, 3 new stations have been opened in the village by businessmen from outside Khorsa because the village is not under municipality borders and it is easy to open outside municipality or city border”
In the following items, the author will present some of the sustainable development policies to maintain and solve such kind of land use conflicts. These policies and suggestions are also discussed with urban planning in Hebron, Dora, Yatta and Halhul municipalities as well as with specialist planners like Dr. J. Umaer and A. Amed.

a. No new licenses to be issued inside or outside the municipalities’ borders without complete and comprehensive environmental and safety studies for the location and design. This could be managed and controlled by municipalities, Ministry of Local Government and ministry of industry and national economy.

b. The Palestinian Government along with petrol station owners should discuss this serious issue immediately searching for new places or any alternatives to reduce the risk on the surrounding people. The government could also support the stations’ owner by giving them loans or other facilities to encourage them shift these stations away from residential areas.
c. Until now, when a master plan is prepared or discussed, there are no discussions or studies of the petrol station locations. It should be included and mentioned in a law as a part of the master plans and land use management in which the location and size of petrol stations are discussed depending on sustainable development criteria.

8.4.3.3 New Buildings Constructed Over or Threatening Old Buildings/Cities

As shown above, Hebron distrusted has been occupied for hundreds of years. Since then and until now, the building and residential projects have not stopped in Hebron. According all historical references and archaeological researches, a large part of the old buildings were destroyed by natural disasters like earthquakes, rainfall…etc. or by demolishing and urban expansions. Currently, part of these old places and old cities are still there threatened of demolishing at the time when their owners need them. The Palestinian urban planning laws protect only the famous and old buildings which are considered as a part of the historical and cultural heritage only. For the rest of the old buildings, there are no laws or land use management plans that protect them from being demolished any time. However, the old buildings/cities in Hebron District are in a very bad condition partly because they are collapsed and need reconstruction and rehabilitation projects to be used as traditional and cultural heritage places. The following points present more facts about the main problems and challenges facing the cities which are as follows:

a. The infrastructure and deep excavations around the old building/ cities.

b. No clear borders or limited urban growth identifying the borders of the old city when the master plans were prepared.

c. According to S. Donab (1989), parts of old area like Hebron’s Old City are 800 years old or more. They are not known and protected properly by the local authorities and thus the physical condition of these cultural buildings is very bad.

d. The urban planning and land use management laws allowed a partial overlap between the old buildings and new ones in the old cities.

e. The master plan design was in the general land use study and part of it was conducted during the Israeli period only as sketch or draft plans only. These plans did not give any protection or delineation for the old towns.

Picture (8.15): Roads, Building and Wastes Surrounding an Old Castle in Hebron City (Source: Author, 2009)
As a result of the new development and buildings around these old places, it will be hard to return back and solve the issue totally because most of the land around the site is occupied. Moreover, high residential buildings are also constructed above or beside the old places. The other thing threatens these old buildings and makes protection process harder is the lack of local people’s awareness of the importance of protecting and conserving these sites. This increases land prices and so the needed budgets for finding alternatives and supporting their implementation are not available. This type of land use conflict was also discussed with Hebron municipalities’ engineers and with professionals and planners as mentioned, the following policies, ideas and action could help solve this land use conflict in order to have sustainable development plan that includes special regulations for the surrounding zone around the archaeological site as mentioned below:

a. The changes and policies should start from first step of preparing master plans studies and marking different land use areas.

b. It is strongly recommended to establish specialized and professional team at the district level representative of the different ministries and public institutions like (local Government, Archaeology Department, Tourism Department, and local organizations), and also from different municipalities and local councils, This team will observe the current conditions and make a comprehensive survey of the old places that need special regulations and protection …etc.

c. The municipalities' engineers agreed that there should be immediate buffer/free areas around the old places, but this action need to be implemented by law and force, or by convincing the land owners of it or award them instead of taking their lands1.

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1 The lack of awareness of the local people about their rights of participating in urban planning and land use development for their communities, the unstable political and administrative conditions make it hard for the municipalities and local village councils to prepare and implement the sustainable developmental plans at the district and local levels.
d. The Ministry of Local Government along with Ministry of old antiquities should start immediately to upgrade urban laws and legislations to be suitable for this land use conflict.

8.4.3.4 Animals and Chicken Farms near the Residential Areas

As discussed and mentioned in chapter five, Hebron district’s people depend on agriculture and farming as one of the main income resources. The people of Hebron have different kind of farms in different Hebron’s districts like kitchen, goats, cows …etc. Several animal farms contain (sheep, goats, cows, .etc). Most of these farms are located outside the master plans¹.

Picture (8.16): Animals and Chicken Farms near the Residential Area at Yatta City
(Source: Author, 2008).

¹ One of the causes of this land use conflict is that, when the farms are located inside the boundary of village or city and reflects lack in implementation force because the legislation law forbids construction of these farms inside the master plans and even when the farm is located outside the boundary. It sometimes creates a bad smell at residential zones but they are legal because they have licenses. When we are talking about alternatives we must take into consideration the difference between them related to availability of land for planning.
Few of them with a small number of animals are located inside these plans (municipal borders). Besides, the chicken farms were found inside and outside, whereas, part of these farms is located very close to residential areas. They are affecting people in the residential zones with their bad smell and the rest of these farms affect the soil and environment.

Depending on the discussion with Hebron municipalities’’ engineers, according researches period, and local farmers, the author presents the following recommendations, ideas and policies which could solve this conflict and improve sustainable development strategy:

a. Currently, the land use planning considers the agricultural and farming areas as one land when master plans are prepared. This concept should be changed and farming areas should be identified and selected depending on environment, winds and other sustainable development criteria.

b. The municipalities along with Ministry of Agriculture are recommended to inspect the existing animal farms inside the municipality borders especially the farms near the residential areas and close the hazardous and illegal farms soon because it will have a bad impact on people’’s life welfare and environment.

c. Special team or consulting office in the coordination with municipalities and Ministry of Agriculture are recommended to study the entire Hebron district’’s areas in order to investigate the best farm areas inside and outside the municipalities’’ borders.

d. The government has a great contribution to solve this conflict by funding and supporting farmers to transfer/shift all the hazardous farms inside the built up area to more suitable areas, and also to provide the new areas with all of the infrastructure services like roads, water and electricity.

e. After choosing the suitable area that abides by these conditions, the concept is to construct integrated facilities in the same location to be related to each other like agricultural farms, animal farms, chicken farms, factories for preparing the food for
the animals and the factories that work on the dairy products, butchers, others to work in meat products and facilitates the work on preparing animals fertilizers. Then comes the selection of the suitable site for these facilities taking into consideration that the chosen site should be accessible in order to bring its products to the available markets easily. It must not be far from the project’s boundaries and it is better to be in the outskirts. The second important factor is wind direction that affects Palestine during winter, spring and summer seasons. During winter, firstly the winds blow from south west directions and secondly it blows from east and increases during the spring and in the summer, it flows firstly from west and then from North West (see, RABM, 2006.P43-45).
8.5 General Policies and Plans Required to Improve the Sustainable Land Use Development

"The PNA Council of Ministers has presented a draft land law to the Palestinian Legislative Council (PLC), which stayed on the Council’s agenda from March 2004 until it was approved in a general session on April 4, 2005. Since then, the PLC has not taken further legislative action on the draft law, but instead referred it to PLC Legal and Land Committee"(AMAN, 2007.P2)

As mentioned all over the chapters of this thesis, the political condition is the cause of many urban planning and sustainable development challenges and problems. This condition on the ground justifies this matter because politics has a great impact on all the details of our lives. Moreover, the absence of national government or satiable administrative system defects, corruption and collapse will be found everywhere and in everything. "Over the last 60 years of occupation, the Israeli authority has been able to control and seize large quantities of open land, fertile agricultural regions, water and other natural resources. These actions were the result of the procedures imposed by the Israeli Occupation in order to prevent the Palestinians from having a viable economic base. This is basically done further by obstructing the Palestinians from developing their cities and towns, destroying infrastructure facilities developed by the Palestinian National Authority after 1993, demolishing private properties and fragmenting the land spaces through checkpoints, settlements, by-pass roads and the segregation barriers" (see M. Nahel, 2006.P5).

Even after establishing the Palestinian Authority, the political conditions remained facing the same problems and struggles. Because land use is very important and is not widely available in Hebron in particular, it became extremely essential to have sustainable development at this time. Otherwise, the coming generations even in a short period will be facing very serious conditions and will find themselves having a limited land filled with buildings without any place for new housing, for infrastructure projects, or even agricultural or green areas. Based on the literature review conducted and analyzed and on the results of roundtable meetings with the decision makers and
municipalities” engineers, local planners and people as well as the analysis of the citizen questionnaires and the workshops held with the citizens, the following are the suggested policies and tools regarding land use sustainable development plans in Hebron district:

a. Land use management needs to be more organized in details and sustainable regulations in the Palestinian urban planning law because the current law is old and the concept of sustainability is not found in the content of the law.

b. Enhancing the ability of the engineers and planners in Hebron municipalities to carry out the sustainable urban and land use management tasks well and also to have the required skills for developing strategies, building-on plans, and structure and implementing work plans.

c. Emphasizing and discussing the application of the clauses and chapter of the municipalities and local authorities' law and adopting and updating national effective laws and regulations towards sustainable development achievement.

d. The municipalities along with the Land Authority are strongly recommended to build new GIS system for all Hebron district. The system should be built according to modern technologies and sustainable standards so as to help planners and municipalities in land use planning and management. The system should have all the data related land (e.g. the parcels, land value land ownership, land cover and land use, environmental value, linkage to infrastructure… etc.). The new GIS system should cooperate with the private sector for investments in urban and urban environmental development to improve tax collection and assessment methods.

e. Land use planning and management is a process and an essential need and so all parts should take part and have input which requires all to establish comments and networking with the different municipalities, ministries, other governmental and non-governmental organizations, research centers, academic institutions, and with international bodies to participate with the public and local communities.
Such coordination will encourage better land use management and will reserve the lands and natural resources.

f. The land use plans should be concerned with protecting and preserving the green and open space area which is still not damaged for the coming generations at short and long terms. This will also improve better and sustainable urban environment.

g. The municipalities and professional master plan team should have a deep discussion with local people and decision makers regarding where and how they want land use development to take place in short and long terms. They should also prepare the framework under which the areas, maps and rules are prepared. This is important because land use decisions are based on the different maps, interests and layers which designate specifically in which the land parcels, privet or public areas can be used and for which particular urban and development purposes.

h. When the planners prepare the land use or master plans, they should also identify and mark the protected areas and the places which need special treatment (e.g. natural resource and environmental sensitive areas, cultural heritage and the old city cores). Besides, they should build buffer/green zones around these areas and should also link all of these with sufficient transportation and infrastructure services.

i. "It is necessary to approve the draft Palestinian Land Law, so that all laws and regulations related to land administration can be compiled and unified; and the conflicts over authorities and jurisdictions resolved. New land legislations should consider the unification of land classifications and divisions in all Palestinian areas, the Presidential Decree No. 10 stipulated in by the Land Authority law which outlines its authorities and responsibilities, in addition to its monitoring and accountability mechanisms. Moreover, it is necessary to unify all regulations and provisions pertaining to state land administration and disposition and prohibiting the sale of state land" (AMMA, 2007.P10)
8.6 Housing in Hebron District

8.6.1 Overview and Existing Conditions

Housing sector, which includes all buildings and projects like housing, building, villas and flats which are local people’s residence places, is considered the largest and the most important urban part for people in urban planning and sustainable development because housing has a direct impact on land use, urban expansion, environment and economies. In this sub-chapter, the author will focus on the character of housing and its linkage with the economy and job opportunities in Hebron District\(^1\). Nevertheless, the social and human aspects of the housing sector will be addressed.

![Housing in Hebron City in 1875](source: www.alquds.com, No 14071).

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\(^1\) The Palestinian Economic Council for Development and Reconstruction, PECDAR, Published on 27/07/2007 research. Part of it is available in same organization’s website about the housing sector in Palestine. However, the author benefited and used part of the said publication in this sub-chapter with modifications as required.
According to businessman M. Mahmdeh (interview, 2010), "In general the real estate sector in Hebron totally depends on the private sector and less than 15% of people get loans or funds from banks or developing companies. The government does not fund any housing project except for some housing projects carried out for special social needs and the houses demolished by Israel". According to PCBS, the housing sector has 20% share of the G.N.P and this figure is divided between construction materials, labor force and financial/commercial activities. House building is considered the largest and most important life project done by the family as many people said. In average, to build a new house for a medium family size (6-8) approximately area (200m2), such house will cost around 50000 $, which is too much for the Palestinian.

**Figure (8:2): Population Density per km² from year 1997 to 2007 (PCBS, 2008)**

According to PCBS statistics (2010), in the average the family in Hebron earns round 790$ per month and the rate of income growth changes due to inflation, but in average from 4%-7% yearly. According to the international standards, the housing should not consume more than 30 percent of the income which leaves the average family with less
than $ 542 per month for the rent and total house expenses such as heating, water, and electricity (MoP, Interim Plan, 2007.P98). The school teacher N. Sous (interview, 2009) said “my salary is only 800 $ per month, and my wife is also a teacher with the same salary. Our monthly expenditure is around 1200$ and we save the rest 400 $ to construct new house. He added “we need a minimum of 10-15 years to build our house which also makes our life miserable and very hard”. As shown in the above interview and many other interviews, people have the same concerns and condition or even worse. The housing sector needs comprehensive sustainable development plans which not only involve physical and urban planning, but also involve new governmental housing projects needed immediately. Banks and real estate companies should also be part of this housing project by facilitating housing loans, funding and advising low-cost building especially for employees and people with a limited income. The housing problem increases year by year and in the short term, it will be a real crisis for Palestinian people and economy because the number of people will be doubled in the coming 20 years and the number of houses, schools, hospitals, markets, services…etc will also be doubled. “By analyzing the results of the two censuses, it was apparent that the Palestinian society is relatively young. The percentage of individuals aged 15 to 64 was about 49.4% of the total population, with 51.1% in the West Bank versus 46.8% in the Gaza Strip. Ten years later, the 2007 census revealed a significant change in the age structure of the population, with an increase to 52.9% of the population. Such an increase is also apparent in the respective regions, with the West Bank reaching 55.3% of the total population and the Gaza Strip 49.0%. Consequently, there were changes in the other age categories correspondingly at both the aggregate level and that of the two regions, reducing the dependency burden between the two censuses”. (MAS, 2010.P4)
Figure (8:3): Age Structure of the Palestinian Territories According to Region for 1997 and 2007 (%) (Source: (MAS, 2010.P4))

The current political conditions increase the housing problem. Moreover, the new separation wall as well as area C both have a direct share in the housing problem because it is not allowed to build behind separation wall, and in area C an Israeli permission is required not only in the last 10 years (2000-2010). According to settlement expert A. Hanatash (interview, 2010), more than 2600 houses are demolished by Israel in Hebron distinct because they do not building permits in area C. Currently, there are 900 houses and demolishing notifications. It is very clear that the Israeli policies and occupation laws make the building houses very difficult and a matter of political wisdom more than an economical and urban development need. These policies increased after the Second Intifada, Gulf War and the financial crisis in the gulf region which also increased the housing problems in Hebron resulting in the reduction in the amount of many transferred from Palestinian worker and employees working in to GCC to build houses in addition to other factors like high land prices and poor services. Due to the current prices of land, the labor salaries, engineering design fees, and profit margin increase, the type of housing has become more luxurious.
which lead to high housing prices as well as high rent prices. The high housing prices prevents the urban growth and development. Moreover, the random housing and shelters will increase as shown in many big cities in the world like Cairo, Mexico City, Al Jeria… etc. The people in Hebron have started to search for house funding and mainly from banks and other real estate financial establishments, but this funding is not available for most of the people. Due to this, only the governmental or large companies’ employees can afford to have loans because banks require many guarantees before giving any financial loans.

![Image](www.ppu.edu)

Picture (8.18): Built Up Area and Housing in Hebron City, (Source: www.ppu.edu).

The recent research and studies conducted by Ministry of Housing and Public Works and also researches by the Palestinian universities and NGOs show that the area of housing in Hebron District is increasing and the people’s life style is changing. For example, before most of houses had one or two bedrooms only, but now medium
families have houses with three or four bedrooms which mean that the housing standards are also changing. Moreover, the required area for each person is also changing. This figure and indication will have impact for the whole built up areas “in 2009, Hebron District had approximately 83,104 occupied households during the whole year and 12,726 households from one month to three months per a year and only 8312 households are vacant. According to the statistics and expectations, the minimum number of new households needed by 2025 in Hebron District only will approximately be 65,000 new houses ” (PCBS, 2010.P2-6). The following table shows the distribution of households by housing density for the whole Palestinian areas, which is also almost the same for Hebron district.

Table (8.4):the Distribution of Households by Housing Density in Palestine, 2002-2006 (source :PCBS, 2010)

<table>
<thead>
<tr>
<th>Housing Density</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1</td>
<td>9.1</td>
<td>9.5</td>
<td>10.9</td>
<td>11.3</td>
<td>117</td>
</tr>
<tr>
<td>1.00- 1.99</td>
<td>37.7</td>
<td>38.4</td>
<td>42.2</td>
<td>44.7</td>
<td>39.8</td>
</tr>
<tr>
<td>2.00- 2.99</td>
<td>33.0</td>
<td>32.9</td>
<td>30.6</td>
<td>29.6</td>
<td>29.8</td>
</tr>
<tr>
<td>3.00+</td>
<td>20.2</td>
<td>19.2</td>
<td>16.3</td>
<td>14.4</td>
<td>18.7</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Average of Housing Density</td>
<td>2.1</td>
<td>1.9</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
</tr>
</tbody>
</table>

According to PCBS, the average household size in Hebron district 6.4 persons/household. The percentage of people living in families between 5 and 6 members is 37%, whereas the percentage of people living in families between 1 and 4 members is 25% and further the people in families with more than 6 members is 38%.The average number of persons per room in the housing unit is 1.78 and the average number of rooms in the housing unit was 3.4 whereas 57.4% of the population between 3 and 4 rooms lives in housing units are 30% and 27.4% respectively. In contrast to this, 22%
of the population lives in housing units between 5 and 6 rooms are 16% and 6% respectively. At the other end of the scale, 16% of the population live in housing units of 2 rooms and 4% live in housing units of 1 room (Ministry of Housing and Public work Data, 2009 & PCBS, Report-No302).

The housing sector in sustainable development planning should also be linked with the economical and industrial activities, housing, land use, building, roads and services, factories, trades, opportunities, banking, industry…etc. When the decision makers and planners see the above figures and statistics along with the technical and financial calculations, it will be clear how much this sector will contribute to Hebron District’s growth and future character. It will also give the decision makers the quality and quantity of material, factories, employees, engineers, financial and banking system required at the short and long term to cover the demands of this strategic sector. The housing sector linkages were severely affected by the policies due to regulatory constraints imposed on the West Bank. The forward linkages were revoked mainly because of underdevelopment in other sectors of the state, whereas the backward linkages were less affected but was weakened by preventing the establishment of related input industries and forcing the economy to use imported inputs from Israel (PECDAR, 2007.P6).
8.6.2 Policies and Recommendation towards Hebron District Housing Sustainable Development Plan

“Sustainable building strategies should be considered from the moment the developer initiates the project. The professional development team should include a developer, architect, engineer, landscape architect, LEED Accredited Professional or experienced green building design specialist, contractor, and asset and property management staff. Whenever possible, the team also should include maintenance staff and resident representatives. The team must be committed to environmentally responsive and healthy building principles and practices.” (Evergreen Standard v.1.3, 2006, P5)

The sustainable housing plans have many dimensions: physical, social, commercial and environmental. Each part has a subpart also to conclude at the end that housing is the main and the core of sustainability process when the government or municipality
constructs a new road or provides infrastructure for a new housing service, when a new school or hospital is opened, and when the number of housing becomes more. The social content will have an impact on that and the people daily activities will be changed. When new urban and developed areas are constructed, the housing sector also takes a lead to the national economy, job opportunities, inflation rates, and industrial cycle because the housing sector is related to most or all other urban and economical factories. The author also discusses the sustainable development policies for this strategic sector with Hebron municipality engineers (No.9 interview 2009, 2010), with Ministry of Local Government-Hebron office’s director (2010), with Ministry of Housing and with Public Works-Housing Department’s deputy manager(2009), Ministry of Industry and National Economy-Construction Factories Department’s manager (2010), and also with planners and universities’ faculty members and arrived to the following policies and recommendations regarding the housing sustainable development:

a. Depending on PCBS statistics (2007) and fertility rate\(^1\), the people of Hebron District people will have around 250,000 new people in the coming 15 years to reach 850,000 residents by 2025. This new number as well as the fact that around 50% of the Palestinian people are below 14 years mean that almost 40,000 new houses need to be constructed in Hebron District for the same period\(^2\).

b. The new housing location outside the current building areas should not affect areas of natural resources and the areas” topography. According to M. Sharakh (infrastructure consultant-Hebron-interview 2010), “because Hebron District has a lot of mountains and part of them have sharp cantors, it will cost more money and time to establish roads and build infrastructure networks in such areas. Besides, regarding the soil stability, as a consulting office for many developers, we prefer flat areas or where the cantors are not sharp. Depending on this, we

\(^1\) See the demographic studies in chapter four.
\(^2\) The family size according to PCBS is around 6.5, will small calculation \(250000/3.5=38500\) houses
advise the municipalities to encourage the new housing buildings in the areas like east of Hebron city towards Bani N’eam and Yatta and also between Dora and Dahriya cities”.

c. The future housing location will be inside the current built-up areas, cities, towns, and villages’ centers and outside and close to the existing building-up areas\(^1\). For both cases, the municipalities along with all of services’ companies (e.g. water, electricity and telecommunications) should check if they can provide these new housing units with all requirements. They should also have parallel plans to see the possibilities and plans needed to cover that the requirements. All of these discussions and sustainable development agendas for new houses should be known and have permission from all related authorities, and of course, the municipalities lead such processes.

d. Ensuring an adequate supply of new housing units and building in the areas that are already serviced with sufficient transportation and transit option encouraging compatible mixed-use development in a compact urban form, supporting affordable housing within designated primary growth areas, having a balance and distributing future population growth within a supporting urban structure of employment land, commercial and retail amenities, transportation and transit, and servicing. All this will save money and benefit from existing conditions (see AMP, 2007)

e. The municipalities’ engineers are strongly advised to establish new real estate companies or investment developments to construct a complete and large residential complex (2000-5000 flat for each compound) and provide this

\(^1\) According to (MPH), it is expected that 50 % of new housing units will be constructed within the Built-Up and municipalities borders and the remaining 50 % will be in new urban expansion areas. “District growth should include both existing built-up area, in order to make the best use of existing services and to new designated expansion areas that are located close to the urban core. Special attention must be paid to preserving the ,organic historic growth” of the district and to provide the conditions that replicate this style of urban form”(AMP,2007).
compound with all services and facilities like urban amenities, green parks, schools, clinics, shopping centers, government department, cultural centers etc.

f. The Palestinian urban planning law should have technical attachments (manuals) depending on the last environmental and sustainable development indicators, and green building design in addition to the housing construction management system which should be known to all parties from contractors to municipalities and house owners. Hence, adopting modern criteria for housing sustainable development plan will facilitate and achieve the sustainability goals in short and long term.¹

¹ Compared to other Arab and Middle East cities like Amman and Jeddah, the author advises Hebron to adopt the following criteria for housing sustainable development plan (AMP,2007):

- Planning Area A has a density target of 6.5 units/net dunum, accommodating upwards of 20,000 residents for a net population density of 26.5 persons/dunum.
- Planning Area B has a density target of 3.4 units/net dunum, accommodating upwards of 30,000 residents, for a net population density of 15 persons/dunum.
- Planning Area C has a density target of 3.7 units/net dunum, accommodating upwards of 40,000 residents, for a net population density of 15 persons/dunum.
- Planning Area D has a density target of 4.2 units/net dunum, accommodating upwards of 90,000 residents for a net population density of 19 persons/dunum.
- Planning Area E has a density target of 3.3 units/net dunum, accommodating upwards of 70,000 residents, for a net population density of 15.5 persons/dunum.
- Planning Area F has a density target of 0.125 units/net dunum, accommodating upwards of 105,000 residents for a net population density of 0.65 persons/dunum.
- Planning Area G has a density target of 2.8 units/net dunum, accommodating upwards of 150,000 residents for a net population density of 12.9 persons/dunum.
8.7 Hebron District Growth and Urban Expansion

"The central objective of the Urban Growth Management Initiative is to examine the available policy options for confronting the projected urban expansion in the cities of developing countries. In other words, it seeks an answer to the question of what can and should be done about it. This demands gaining a better understanding of the key dimensions of this expansion as well as of the forces that are driving it globally, regionally and locally, so as to be able to consider carefully the kinds of policies that are likely to be effective, efficient, equitable and sustainable, while keeping in mind that such policies may be quite different from those available or of interest in industrialized country cities"(World bank, 2005.P3).

The urban expansion will affect the cities, towns and villages’ centers in Hebron District which was built hundreds of years ago. Moreover, all old and cultural heritage centers will be changed because of modern buildings and urban expansion inside these centers. Most of the people in Hebron’s old centers have had their own hopes, activities and traditions for hundreds of years. Similar to other Palestinian and Arab districts, Hebron District consists of the old and new urban fabric, road structure, building materials, and unique functions of a group of buildings that reflects the civilization and culture of the people when it was first built and inhabited (see N. Kamel, 2002, p41-68).

According to the urban planner J. Umaer (interview, 2009), the urban expansion problem started more than 60 years ago when the Israel and Palestinian wars started and the daily conflicts and struggles continued between two sides. The new refugee camps which were established became part of the urban expansion. The land use concept and urban planning challenges the growth in Hebron has involved fairly and the rapid

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1 “Definitions of urban and rural land use can be widely applied and can also serve diverse needs of academics and practitioners. Currently, the best data source for current and projected urban trends is the UN, who relies on data from individual countries with varying definitions of urbanism. Not only do these definitions use differing quantitative measures, but some depend upon population size or density, while others rely upon administrative titles or proportion of workforce engaged in nonagricultural activities”(Redman & Jones-ASU, 2004.P4).
outward expansion is due to both urban development and a series of political and social challenges. Urban Growth is transforming Hebron from its former distinct hilly and mountainous pattern into a large urban district body with a variety of transportation system, infrastructure services, and built-up areas separated on cities, towns and villages. Hebron’s urban expansion is the largest in the West Bank because of the land availability and number of people compared to other Palestinian districts.

The current and future Hebron’s urban expansion is resulting from the essential need of the population and the available land. Unfortunately though, this land is randomly used without any sustainable plans at the local or district level. However, for the coming years and mainly for long-term development, the municipalities and cities like Hebron, Dora and Halhul…etc. will have to expand outside their boundaries towards villages and open areas for future urban development. Due to the current political conditions, expanding out of the municipalities’ borders is very hard because about 50% of the available land in Hebron District is classified as Area C. Besides, other sustainable development constraints on land expansion include the inclined nature of the land that needs a lot of excavation work which will be costly also in addition to high land prices.

The sustainable urban expansion development plans show the decision makers and planners the areas for future housing. It is not a conventional land-use plan as it in the center of sustainability and urban environment policies. It provides agenda and guidelines to sufficient urban planning for the anticipated Hebron population urban growth perspectives like direction, location, time, characters …etc. This sub-chapter seeks to illustrate the location of existing built-up areas housing and residential areas inside Hebron District areas as well as the preferred locations for future urban expansions from academic and perspective point view only. Due to urban expansion, the projected future locations of new main roads will be subject to urban expansion direction and main district urban corridors, major natural/cultural heritage places …etc.
Picture (8.20): Drawing for Hebron City in 1839, shows a Small City around Al Ibrahimm Mosque (Source: Hebron University-History Department, 2009).

Picture (8.21): Almost the same Area of the above Picture (8.26) from different corners in 2008 shows the Urban Expansion and the Built up Growth in 2008.
According to A. Awad—local road designer and planner (interview, 2009), “where ever the people have land they build, but more building takes place close to the main cites” borders because the land price is less compared to city centers. Most of roads, facilities and infrastructures services are provided after the people expanded randomly which causes many problems and damages in most of urban profiles”.

The urban expansion has many types as will be discussed later, and all of these types need infrastructure services such as electricity, water, transportation system, new public buildings like schools, hospital, markets. All of these new requirements mean the increase of demands on everything related to human needs such as water, electricity, food, housing, education, cars, public services...etc. Moreover, the new urban expansion has a direct impact on social affairs, economical characters and urban environment, which need more studies and development projects by Hebron’s municipalities and all the related ministries. (e.g. Ministry of Local Government, Ministry of National Economy, Ministry of Transportation, and Ministry of Housing and Public Works.

The sustainable urban growth/expansion plan presented below Map (8.5) is the perspective of urban expansion direction and location for the coming 15 years plus or minus up to 2025 which need and could be established by more investigation and expansion direction of Hebron District’s cities and built up areas. According to farmers and land owners of the villages like Khorsa, Tabaqa and Bourj, most of the sold lands in these villages are purchased by people living in the cities because city people do not have enough land to build new houses. Thus, they buy cheap land in the nearest villages and rural areas. Hebron’s urban expansion plan is an interactive plan that works towards greater sustainability across the District landscape. The relative statistic anticipates a tremendous population growth in Hebron from the current 600,000 to over 850,000 by 2025(PCBS, 2008.R-No.3.P23).
Map (8.5): Hebron District Urban Expansion up to 2025 (Source: Drawing by Author). Depending on the above map (8.5), the projected urban expansion will be in all Hebron District’s cities and towns. It will be in three main directions in places of building

1 This urban expansion map for Hebron District’s cities, towns and villages developed by using the following principles and resources:

- Identify cities and towns borders according to official and administrative master plans approved by ministry of local government.
- Land owner location and land distribution.
- Main roads network, hence the new housing and project will be on these roads.
- The current municipalities master and strategic urban growth planning.
- Number of people for main cities and towns and the required housing and public project number within the next 15 years.
- Input and advice from Hebron municipalities’ engineers in engineering and urban planning departments (2009).
- The available studies and the history of urban expansion since around 50 years ago.
- The Palestinian Nation physical, transportation and industrial plans.
density which all started from the main center of Hebron. These directions are called corridors which are either main corridors or sub-corridors along Hebron District’s streets. In the following map, the author presents the main three urban corridors which are found in Hebron District. These corridors have the majority of people and built-up areas. The first urban corridors are the north corridors which connect between Hebron city’s center and Halhul city’s center. The second one is the south-east corridors which connect Hebron center, Dora centre and Dahriya center, and the last main corridors connect Hebron city’s center with Yatta center, these corridors are marked depending on population numbers, number of buildings, and the main street. This hierarchy is shown on the Hebron District’s corridors and growth centers plan, see Map (8.6).

Map (8.6): Hebron District Corridors and Growth Centers Plan (Source: Drawing by Author).

The Hebron development corridor provides a clear and appropriate urban edge called as the urban Industrial Areas in the Hebron District that will serve to contain most of Hebron’s projected growth.
These corridors will provide Hebron’s residents with safe and easy access to all parts of Hebron District as well as important links to other parts of the region, country, and to Palestine's borders while serving as both primary traffic and transit corridors. They will remain relatively “green” in character and will provide access to major recreation facilities and District’s parks. These corridors and growth centers will perform when they are given the prominent role and it is important that they set a new standard for District planning and design as they will define not only its edges but also its gates (see AMP, 2007).

**8.7.1 Urban Growth Concept and Components**

"Countries around the world have responded to the problems associated with rapid urban growth and increasingly land-consumptive development patterns by creating a wide range of policy instruments designed to manage urban growth. Of the array of growth management techniques, urban containment policies are considered by some to be a promising approach" (Bengston, D. N. and Y. C. Youn. 2006, P1).

The urban expansion direction will be on the places and areas that could have new building and construction. These areas are called primary growth areas. Urban expansion is stopped and not allowed in the areas called limited or no growth areas like natural heritage areas, old cities …etc as shown in Figure (8.6) below. The future sustainable urban expansion plan will identify the built-up areas, industrial areas, main urban corridors in Hebron, and the density of different urban elements on the expanded areas within the primary growth area. Limited and no growth areas: Limited and no growth areas include natural heritage areas, cultural heritage areas, agricultural areas and mining and quarry areas where development is limited or prohibited.

As was discussed and mentioned in the previous chapters, urban expansion is a fact in Hebron District which might be one of the places in the whole world to face such king of expansion (fertility rate 3.8% yearly). Because in Hebron there is a huge demand on

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1 The urban expansion direction mainly follows social relations, urban potentials, roads natural resources Smooth topography, nice views, job opportunities and industrial areas.
land which is very limited there, the urban expansion policies become more critical and need special treatment. Moreover, the new Israeli policy increases the urban expansion problem and reduces the available land by constructing the so called “Separation Wall” or “Segregation Wall”. “The policy of unilateral segregation between Israel and the Palestinian areas launched by the Israeli government in June 2002 is by creating a segregation (Separation) Zone on the Palestinian lands in the West Bank\(^1\). This zone cuts through the western part of the West Bank as well as Hebron District and runs from north to south seizing the most fertile agricultural lands, isolating Palestinian communities in enclaves, undermining the territorial contiguity between the Palestinian villages and cities, natural resources, and enclosing most of the Israeli settlements “(Al Quds newspaper No.1512.P12 and J. Nameer, 2009.P3).

\[\text{Picture (8.22) the Separation Wall in the South-Western Hebron, (Source: Author, 2009)}\]

“The wall will run for 683 km in the West Bank and out of this only 138 km (which is 20.2% of the total length) will actually follow the Green Line (the 1949 Armistice

\(^1\) There are many researches and studies regarding „Segregation Wall” or „Separation Wall” conducted by different organizations and ministries like the study by ARIJ (www.poica.org/editor/case_studies), the study by Land Research Center –LRC (www.hicmena.org/documents), and the study by The Palestine Media Center henceforth the (PMC) (http://www.palestine-pmc.com) …etc. However, the Author refers to all of these and more and he filters what is directly linked with this thesis objective and research agenda.
Line). When completed, this zone will isolate 576 km² of the Palestinian land (approximately 10% of the total West Bank area). It also encloses 98 Israeli settlements accommodating 83% of the Israeli settler's population in the West Bank and 55 Palestinian localities. Israel has created de facto an eastern segregation zone without walls or fences as an additional but through control of access points along the Jordan Valley and the shores of the Dead Sea. This zone has a total area of 1664 Km² representing 29.4% of the West Bank and including 43 Israeli settlements and 42 Palestinian localities” (LRC, Report-No.1, 2008.P5-8).

Map (8.7): Separation Wall in the West and South of Hebron District (Source: Drawing by Author).

"The lack of control over land, natural resources, and movement means that most sectors of the Palestinian economy are hit hard by the punitive and illegal restrictions imposed by the Occupying Power. The Occupation"s regime of walls, settlements and closures has restricted the growth of Palestinian commercial activity as well as urban
development and expansion. For example, Israel”’s illegal settlement regimes have shrunk the Bethlehem governorate by 87%. Palestinians can now access only 13% of the governorate”’s land; much of it fragmented and already populated. This makes it virtually impossible to implement projects vital to improving the transportation system, much less proper plan for the sector”’s development” (A. Hijazi, 2010.P1).

“One of the main goals of the Segregation Wall in Hebron is to enclose as many Israeli settlements towards the west of the Segregation Wall through the establishment of isolated geographical pockets. There will be two pockets emerging from the southern part of Hebron: the first one starts from Shima settlement southwest of the town of Yatta and then moves north to include Otniel and Hagai settlements. The other pocket starts out at Susiya settlement southeast of Yatta and moves to the north enclosing several Israeli settlements where it meets with the southwest pocket and continues north to include Kiryat Arba, Kharsina and the four settlement spots inside the old city of Hebron. Overall, some 30 Israeli settlements and outposts are expected to be behind the Segregation Wall once it is completed and mostly in south of the District” (ARIJ, Report, 2008.P.14).

As shown above, the construction of separation wall reduces the available land for the Palestinians in Hebron District and also creates a new system with negative impacts on the geopolitical, economical, social, and land use aspects of the Palestinian life in Hebron District creating new demographic conditions that will lead to forced migration among the Palestinians. They will lose their livelihoods because the wall also increases urbanization pressure and population density. Hence, by this wall Israel will continue to keep more than 49.2% of the Hebron District”’s land under the Israeli control in the eastern and western Segregation Zones. Moreover, the separation wall will cause

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1 According to recent World Bank reports, Israeli checkpoints have become a constant feature in the Palestinians”’ life and have immeasurably complicated the lives of men, women and youth by subjecting them to constant fear and humiliation as well as increasing travel time and transportation expenses. OCHA, UNSCO, World Bank and Israeli NGO B”Tselem have monitored the internal and external web of closures and restrictions imposed on Palestinians. Their conclusions are telling; for 6 years now, Palestinians have been prohibited from accessing 50% of the West Bank land mass, which is taken up illegally by the occupation”’s infrastructure; and Palestinians are isolated in approximately 22 cantons within the 50% of
damage to the agricultural land by preventing land owners from reaching their lands located behind the wall. A lot old buildings and archeological places are also located behind the wall. The wall reduces the open spaces and threatens sustainability of the urban and rural areas as well as a threatening to cause more loss of the natural resources and environment and biodiversity. The planners for Hebron district urban growth will find it very difficult to find proper places for district level projects like landfills, waste water treatment sites, and industrial areas.

According to this research section, the author builds maps and section uses to explain the urban expansion growth characters/designations and gives a simple idea to coming s and decision makers where and how the urban expansion could take place in different areas in Hebron as shown in Maps (8.5, 8.6 & 8.8) and Figures (8.2, 8.3, & 8.4). The cross-section represents the primary growth areas and limited growth areas which could only be found similarly in most/all of Hebron”s urban fabric. The new housing and built up areas will be located above the existing buildings and in the open spaces or vacant land inside urban areas or on the borders and main streets. The amount and density of urban expansion will be managed and identified by many reasons like the location (i.e. if the expansion is internal and constrained in the city”s center, the building density will be very high compared to new urban expansion where more places, green areas and more organized urban areas.

West Bank accessible to them, obstructed by hundreds of checkpoints and physical barriers, sliced and zigzagged by more than 700 km of transport arteries for the exclusive use of illegal settlers; and finally the continued severance of connection between the West Bank and Gaza remains a significant hindrance to economic activity and development. (see A. Hijazi, 2010.P1)
Figure (8.4): Hebron District built up areas shows Primary Growth Area(Source: Drawing by Author).

\[\text{Figure (8.4): Hebron District built up areas shows Primary Growth Area(Source: Drawing by Author)}\]

The author refers to Amman Metropolitan report 2007, and he uses the same figures and ideas but with modification to match Hebron District in figure (8.6, 8.7 & 8.8).
According to PCBS statics (2010), around 75% of Palestinians live inside municipalities’ border (cities and towns), and according to Ministry of Local Government (internal data, 2009), the total municipalities and urban areas in Hebron that have master plans are only 208 km², which means that 75% of people live on 17% of land. This indication gives us the percentage and amount of vacant land outside municipalities’ borders. Still, inside Hebron District municipalities’ borders, there is still vacant land that could be used to accommodate future urban growth such as Hawoouz, Ras Aljoura, Singure and Halhoul. The following figure (8.8) shows how the internal urban expansion took place, and also the external pressure on the boundaries. The actual condition is that in Hebron, there are three types as mentioned above. Each type needs a lot of discussion and study not only by municipalities but also by all urban sector parts.

Figure (8.5): Cross-Section Represents Primary Growth Areas (Source: Drawing by Author).
In the future urban expansion the old cites main antiquities and cultural heritage are protected and no urban project could be carried out above them, and even the projects beside them should be conducted according to very strict restrictions and urban rules as mentioned above in land use conflict recommendations. Comprehensive engineering

It was noticed that there is no approved list for cultural heritage which is one of the main components for protection and preservation. This list needs to be studied thoroughly to provide the priorities when dealing with cultural heritage. Cultural heritage does not receive the amount of attention needed. Municipalities do not take it into consideration through budgeting and does not utilize its preservation
and maintenance studies are required to provide the necessary protection for the old and historical buildings; also the level of intervention/rehabilitation, to present these locations on master plans at all levels. On the maps, a thorough study of the sites that have old buildings or places should be indicated (i.e. the places which need special excavation by archeologists). For instance, there is a large historical well on the mountain which is a settlement now. It is also recommended to delineate the old city and to be part of Hebron District’s history in order to protect and save it for generations to come.

The old places are found all over Hebron District’s areas need immediate renovation and development. In the following map, the author marks these places depending on the available maps obtained from Hebron, Dora, Yatta and Halhul municipalities (2009), also from maps from GIS Maps’ Department in the Ministry of Local Government and Ministry of Planning (2009) as well as the publications and internal references in the Ministry of Tourism.

economically through tourism and public services. It was noticed that many historical sites do not exist on the structural plans which allows for its removal just as happened with Uncle Sam’s building in Hebron city. Also it was noticed that there is no coordination for protection and preservation between public, private and non-governmental institutions that are active in this sector. It seems that there is a struggle between those institutions which negatively influences the protection and preservation of cultural heritage. It was noticed that donors or organizations of donor countries fund most projects in the West Bank and especially those of architectural preservation. Local funding is necessary in architectural preservation, and in this aspect providing an annual budget for this concern by the Ministry of Finance will eventually cause the betterment and essential in strategic planning for protection and conservation on cultural heritage and of the national economy which is dependent of tourism (see, RABM, 2006).
The objectives of the Hebron District Cultural Heritage Plan should address the following:

a. Recognize a range of cultural heritage features, including historic and heritage town centers, landscape corridors, areas, view sheds, and antiquity sites at the District scale.

b. Identify major cultural heritage features and integrate them – where appropriate – into the District planning structure.

c. Promote the cultural heritage of the District as part of the contemporary living experience.

d. Ensure that heritage features inherited from the past are passed on for enjoyment and care by future generations.

e. Support tourism development within Hebron District.

Map (8.8): Hebron District Cultural Heritage Layers and Plan (Source: Drawing by Author)\(^1\).
8.7.2 Hebron District Urban Expansion Conclusion and Sustainable Urban Planning Polices

The main aims of Hebron urban expansion are to have enough housing, hospitals, schools, parks and/or open space, residential, commercial, recreational, cultural purposes, entertainment, and job opportunities for the current people and coming generations without affecting land, environment, green areas ...etc. negatively. It also aims to provide all of the new building and urban areas with the fundamental services like education, healthcare, public transit, water supply, wastewater disposal, solid waste disposal, electricity, telecommunications...etc. The below academic polices and recommendations are the main guidelines discussed; and some of them were proposed by related organizations and planners in Hebron District during the time of preparing this thesis. However, these recommendations need more discussion and analysis by the Palestinian ministries and municipalities as well as by other academic researches for each sustainability and urban growth subject. When these policies are adopted by official organizations, the consulting offices and urban planning engineers could use these recommendations as terms of reference for their urban expansion sustainable planning development in Hebron District or in other Palestinian districts. The future urban expansion of Hebron district for the coming 15 years should be ready to have projected population growth in Hebron by 2025 (from 600,000 to 850,000 persons).1 The urban expansion will have different scenarios/phases which must be analyzed, evaluated and planned accordingly. However, the preferred scenario became the foundation for the Hebron District sustainable urban growth management. In Scenario one, Hebron District continues to grow as it has grown for the past 40 years, unplanned urban expansion random land use planning, damage agricultural land and pollute environment and there is no sustainable development. In the second Scenario, Hebron District urban expansion will include sustainability urban planning and the lands, environment, natural resources and service will be saved and available for people for

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1 Refer to demographic studies in chapter five, more figures and details about the number of people in Hebron district, classification, projections …etc; all of these are fundamental parts in Hebron district urban expansion growth and sustainable development as was discussed in the previous chapters.
the generations to come. In order to achieve the second scenario, the following policies and recommendations could be part of sustainable development in Hebron:

1. The Palestinian urban planning law should be developed in a way that links municipalities’ activities in the same district with one system to coordinate and build one district urban expansion policy.

2. The Ministry of Local Government, Ministry of Planning and Land Use Authority are all strongly recommended to develop GIS and software mapping system at the district level; and building complete master infrastructure plans along with consulting services and other utilities. This kind of software will manage and control the random expansion and give planners and municipalities’ engineers more data to come up with more solid sustainable decisions.

3. In principle, developers will have the right to proceed with developments that may not be contiguous with current growth provided that their detailed plans conform to the Hebron District and that they pay for all associated public costs including planning and engineering services as well as required big district improvements (e.g., servicing infrastructure plus basic social services and facilities). However, all future developments along Hebron District growth corridors and in Hebron District growth centers should be planned and designed to attract a significant portion of population and employment growth and to provide a diverse and compatible mix of uses and further to provide high-quality open spaces with site design and urban design standards that create attractive and vibrant places supporting transit, walking, and cycling for everyday activities and achieving an appropriate transition of building form to adjacent areas (AMP, 2007).

4. The municipalities’ engineers along with local village counsels in Dora, Yatta and Dahriya are recommended to reserve the village /rural area nature by limiting and controlling the urban expansion inside or at the border of these areas. This could be done by limiting the density and the height of houses and
buildings which should not exceed more than two or three floors; besides the density should be less than 5% of total village area.

5. Hebron District municipalities’ staff should coordinate/meet regularly with planners/engineers from the Ministry of Local Government and Ministry of Housing and Public Works to coordinate planning efforts regarding Hebron District corridors and growth Centers.

6. The urban expansion should save and improve the cities and villages’ rural identity, green/ agricultural lands, social urban fabric, and should develop the area according to local people’s needs and not according to municipalities’ and decision makers’ plans.

7. Old places and cultural/natural heritage are in the core of urban expansion policies. These polices and sustainable urban laws are still not available and need urgent revision especially those aspects involving the establishment of a general unit for heritage and its work responsibilities, level of decisions administrative structure and to what extent it overlaps with the legal authorities like land authorities, Ministry of Agricultural and Palestinian Antiquities.
Chapter Nine

Conclusion and Sustainable Development Recommendations

9.1 Conclusion

9.2 Recommendations and Sustainability Approach
9.1 Conclusion

The ideas behind this research can be a perspective to the urban growth management in Palestine-Hebron District as a case study, to the urban planning system, economical and environmental policies and to the solutions required to manage and integrate the development elements in the sustainable plan. According to this research, which is conducted for academic purposes and concept, the author raises and presents the necessary policies and recommendations for the urban/physical planning and the policy framework that will guide the urban growth and sustainable development for Hebron District. As a case study for other West Bank Districts, the research answers some of the fundamental questions like, what does sustainable development mean? Which definition can be applied to the Palestinian case? How do the Israeli occupation and the bad political and administrative conditions affect sustainable development in Palestine? What are the dimensions and sustainability components that need more discussion, analysis and recommendations in Palestine/Hebron? What are land use management requirements and how can the people of Hebron use the limited land area in the most sufficient ways? What kind of socio-economic sustainable policies are required in Palestine? Where are Hebron cities urban growth expansion directions will be and how? What are the policies that should be taken to achieve urban sustainable development? This research is an effort by the author to find answers for the questions presented in the previous chapters and concluded here.

Hebron district was established thousands of years ago. Several nations have come and lived in Hebron District before Ibrahim (messenger of God) until now. Due to this, Hebron’s urban growth management and sustainable development plan should reflect this historic and contemporary character of the District which makes Hebron the best

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1 This chapter ends up with the conclusion of the whole report; however each part of this report should be read in connection with the previous sub-chapters. Moreover, this conclusion has the author’s observations besides the input from Hebron people and organizations as shown in the previous eight chapters. Moreover, the author refers to many PhD theses in the same field, research and urban project to put logical and availed recommendations. However, the author strongly believes that these conclusions are not the perfect ones; but it is his best and the best available now to start sustainable development process in Palestine as well as in Hebron.

2 Chapter one and the introduction of each chapter have the aims and general view about the chapter’s aims, sustainable problems and content.
place for its people. In other words the best place for people to develop the District depending on its identifications, history and special cultural heritage. The sustainability development plans should also upgrade and extend this cultural, historical and landscape character into the future and for the benefit of coming generations as a basis of new and modern district in the 21st century. The perspective urban growth management for Hebron District from sustainable development view is that it is being developed in planning phases/parts that define a range of plan components and each has been developed at one of the planning scales as mentioned before. Hebron sustainable development plan should share the local people and undertake the bottom-up community-level strategy/planning in response and develop urgent and serious urban issues as well as the environmental risks in order to develop Hebron infrastructure, built up areas, urban corridors, industrial areas and protecting environment/natural resources in Hebron”s cities, towns and villages and the different commercial/trades like mixed-use streets. However and according to this chapter, there are general recommendations which should be read in connection with each sub-chapter recommendations before1.

Hebron District is the largest and most fundamental Palestinian district that has 16 municipalities and 154 localities as mentioned in the previous chapters. The municipalities and villages are divided into local authorities to manage and provide the local people with good services. Hebron District”s boundaries serve as the study area”s boundaries and consist of 1,261,415 dunums (1,261 square kilometers) and provide accommodations for a population of about 571,928 people according to the last population surveys in 2007(PCBS, 2008). Hebron has a rich natural and cultural heritage and its landscape varies from high mountains to deep valleys and flat with modern urban development in many places. Hebron District has special conditions in its natural mosaic and the people traditions which are a model of multiculturalism in

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1 In this chapter, the author will not repeat the same recommendations mentioned in details for each section/chapter because these recommendations are summarized and they coordinate all urban policies together and give the planners and decision makers the conclusion and general policies about Hebron District sustainable development plans. However, the author will again but footnotes where it is required to guide the reader. Here, more details could be found in the previous chapters as will be shown later.
Palestine. This gives Hebron identification with the topography that is moving out from its original central core (old cities) and the topography of the sustainable urban planning area. The people in Hebron and the visitors coming to Hebron will find that the district has a complex system of views and building styles, landscape and different urban fabric that includes those to and from its prominent mountain tops, along its green valley and towards the older central city and cultural heritage sites, mosques, shopping, buildings, schools …etc. To conclude from the previous chapters, Hebron faces many urban planning and sustainable urban development challenges at the district and city levels. These challenges should be solved and treated from local to national levels as shown below:

a. Many new construction projects and buildings rise in most of the potential places without proper studies or linked to domestic needs and demand that could destroy environment, land and housing investment markets.

b. Serious shortage of flats or houses with a reasonable price for purchase or rent available mainly for young people. In some cases, the house rent takes 60% of the family income which creates socio-economic problems and unsustainable development.

c. The urban expansion moves to low-density urban areas with single-use residential like family villas and this expansion takes place due to miss-coordination with the local authorities and also due to the lack of services and further environment and land uses problems.

d. The infrastructure quality is poor where the design is carried out by different parts and different funders, as an example the street width design and construction without any comprehensive studies or links with actual needs and future urban development. This sector needs to be upgraded in order to replace the existing old infrastructure services mainly water network, sewerage system and roads via a huge governmental and public investment in new infrastructure projects.
e. The visitors to Hebron find the new buildings and luxury construction besides very poor buildings. This part needs more discussion and investment to reduce the big gap between the people.

f. Lack of rules and regulations to protect the cultural heritage mainly the great number of historical towns and villages from the late Ottoman period. The value of cultural heritage has not been protected and further due to the lack of public awareness regarding the value of the cultural heritage and the ongoing demolition of these historical structures witnessed day by day.

g. The environmental pollution of water, air and even food found is more in Hebron due to the poor solid waste management and the absence of landfill areas. All of these need more efforts and studies by stakeholders and local authorities to find sustainable urban environment policies in Hebron.

h. Decreasing the level of focus in new urban structure and new construction projects mainly the commercial buildings like shopping malls with the decline of the old city downtowns. This creates a new centre which is not to be Hebron’s historical center known as Bab Al Zawyes and Al Qasabah.

i. The absence of a financial system that could fund the new projects or the real estate which makes the development under the limited number of businessmen free of any competition or development that comes from actual people needs.

j. Poverty and high percentage of unemployment, besides the poor health care and poor educational organization financial aid.

According to hundreds of meetings, interviews and workshops held with planners, decision makers, key figures, consultants, children of the District, local investors and businessmen, professionals/planners in different organizations, academic establishments, government institutions and civic society groups involvement and answers, research information and different analysis phases, discussions, recommendations ...etc, the author generalized the conclusions that the future projection/vision of Hebron District as a cultural and economical center/capital for the entire West Bank. Based on this perspective and others, a set of goals and future
sustainable development guidelines are proposed and recommended. These recommendations and policies should be confirmed through adopting Hebron District sustainable development plan.

The commercial perspective/vision is one of the key elements in this relation and Hebron District is the commercial center for many Palestinian companies like industries, real estate’s software development, accounting, engineering…etc., and Hebron’s future as an economical/commercial center needs to establish governmental/public institutions/centers inside Hebron District’s borders. The location of these organizations should be in the area that has fewer transportation conflicts and in the selected land use management places in order to reduce the negative impact on environment or increase pollution¹.

Hebron District, as mentioned in economical studies in chapter five, has thousands of factories, workshops and shopping centers. This large amount of economical and industrial foundations makes Hebron one of the major destinations within the West Bank. It is considered as Palestine’s engine for economic and employment activity. By this means, Hebron will play a significant role in national development plans and sustainability responsibility as it will help increase and improve the economic sector to other Palestinian districts and ensure a balanced growth and employment within Palestine. This kind of balancing and development planning will help reduce in-migration to Hebron searching for jobs and also will add urban and social benefits of keeping the families together in their home cities, towns and villages.

Wadi Al Tuffah, Eiusaa and Ein Sara streets are an example of the Hebron’s development and urban movement including new contemporary architecture designs and unique Hebron urban texture and living feel; but on the other part, most of Hebron’s cities landscape is still very poor and need maintenance in most places.

¹ More discussion is required about what kind and size of organizations, industries, and companies required achieving the goals that Hebron district is the economical capital, also new establishments should be large enough to include all the needs for expansion and reallocation of governmental administrative buildings. These proposed recommendations must be discussed further and followed up through planning at local level and specialist consultants.
However, in some places like the above mentioned areas and others Ras Aljoura and Al Hawouz, there are new roads network service also in which infrastructure services are also provided, and it is hoped that these services will reach the rest of Hebron District areas according to the district sustainable development plans. Hebron city is the main center for the whole district since it has also central nodes and central commercial/business areas like Dewwar Al Sehaa, Bab Al Zawyeh and Al Qasaba. These central business areas should be provided by modern and safety public transit system that provides an easy access from all parts of the District area. Hebron District also has a good potential and resources to be one of largest agricultural area that produces different agricultural products like fruits and vegetables. It has an increasing amount of organic products not only in Palestine but also in the entire region due to the different topographic features and the type of soil in addition to the availability of labor force and skilled agricultural people for hundreds of years. It is also one economical and income factors in the local and external tourism to Hebron. Hence, it is expected that Hebron will become a favorite destination for the travelers and visitors from other Palestinian areas because of it is rich with cultural, social, historical religious sites…etc; and all of these could be found in one place (i.e. Hebron).

1 Hebron is a District of choice. One can step back to history by walking through the designated heritage districts and these pedestrian friendly neighborhoods should be thoughtfully restored and generously landscaped to provide ample shade traffic which is limited to local residents only and a careful blend of inclusive residential and trade development makes this area a favorite destination. Hebron will also aspire to become one of the major international tourist destinations that build on the gateway function for serving the tourists visiting Palestine. Hebron’s moderate climate, arts and cultural heritage attractions, and hospitable citizens will transform it into a major destination city. The District tourism infrastructure is supported by the modern facilities with a renowned international service culture to ensure the establishment of programmers (see amp, 2007)
9.2 Recommendations and Sustainability Approach

The following sustainable development academic recommendations are the main general output for the whole chapters. The recommendations are at the district level which also includes a summary and gathering of all the previous discussions, analysis and recommendations as mentioned above. For more details, the reader can refer back to the previous chapters and related texts.

9.2.1 Developing Urban Planning/Sustainability Laws and Organization Frameworks.¹

The origin of the Palestinian urban planning laws started since Ottoman period 100 years ago and developed during the British Mandate (1918-1947), and reached the end during the Jordanian Period (1947-1967) when the first official urban planning law was approved in 1966. Currently, the Ministry of Local Government along with other ministries like Ministry of Planning and Ministry of Housing and Public Works prepare a new urban planning law; but it is still not effective. Moreover, the district planning level is not mentioned in the Palestinian urban planning law². From a legislative point of view, the Hebron District urban growth and sustainable plan and its regulatory framework represent a modern approach to urban planning that is not entirely consistent with Palestine”s urban planning legal system. However, the regulatory framework could be discussed and developed to support that the implementation of the sustainable development plan can be adapted to the existing legislations by certain minister”s cabinet decision or other political and administrates decisions. As a result, the approach to regulation does not rely on passing new legislation it did not meant development will not be happened. As mentioned above, such conditions need immediate and serious

¹ In chapter three, the reader can find more details of Palestinian urban planning laws and regulations, also the related ministries structure like Ministry of Planning and Ministry of Local Government. Also, more discussion and analysis of municipalities” works and local village councils will be found there. This part will summarize the pervious recommendations and proposed institutional work organizations.

² As mentioned before in chapter three, the level of planning in Palestinian laws are national plans, regional plans, city plans, and village plans. This kind of district level plan or in other terms metropolitan plans still do not have legal basis and it will be strongly recommended to be presented and mentioned in the new Palestinian urban planning law.
actions to revise and update the Palestinian current urban planning regulations in a format that complements the overriding objectives of the Hebron District sustainable development plans. The proposed urban planning system legal framework should be defined and based on four main primary and level scales of master plans and sustainable development projects like the National plans, District plans, the city and community/village plans\(^1\). The Identification of urban planning system (master and zoning planning) via modern and sustainable development regulations and urban design guidelines will ensure that the future development projects and growth management will achieve the Hebron sustainability with clarity and flexibility for the development community. The urban planning regulation system will coordinate and demonstrate the relationship between the different organizations working on Hebron sustainable development.

The Palestinian Authority can benefit from other Arab and Middle East countries, how they have old urban planning laws from earlier periods and how they develop it to match modern approach and sustainability goals. Chapter three addresses and presents the institutional and urban planning framework in Palestine in details. Here, the conclusions and final academic recommendations are that the current institutional and organizational framework for planning and development are weak and not sufficient. Moreover, each donor has his own agenda and regulations due to the lack of financial resources from the Palestinian Authority. The decision makers have to accept most of funds and aids even that not as pre-plans and development agendas or the funded projects that give actual benefits to people or not. However, Hebron District municipalities and local authorities work in isolation from each other and they miss coordination in many projects; and this causes the problems for government institutions, the people and investors and such challenges will miss the opportunities for

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\(^1\) The details content and components of each plan could be discussed and decided through local planners and experts in the field of sustainability. Hence, for all planning and sustainable development framework, there are major and minor objectives for the whole urban component (built-up areas, green areas, economic, environment…etc).
more effective and efficient planning and development control measures including cost savings in the provision of infrastructure, transportation and social services as education and health care. There was no strategy of how the District should be developed and many of the standard plans were out of date and did not address the issues at hand particularly for the new large developments proposed in the District such as big infrastructure projects, roads, high rise building and big governmental buildings. Within the last fifteen years, Hebron District has also shown good potentials in improving and establishing a major economic and community development system. The author recommends establishing a modern urban management institutional framework for Hebron District, sustainable development plans. This new framework will adopt and work according to the following main principles:

a. The new system will not supersede the previous laws and institutions. It will coordinate and organize the current laws and Institutional integration of the urban planning; develop the environment and economic conditions within Hebron District and at national level.

b. Improving the governance and district organizations rules for planning and development process.

c. The new legal frameworks will develop Hebron District to be a sustainable district through modern technologies, E-services, transparency, telecommunications, public awareness and community involvement in the planning process and mainly in big construction projects.

d. The new legal system should take care and be ensure that any development urban plans, district projects and sustainable development agenda should match the local people’s objectives and needs.

e. The District Sustainable development plan should consider the national and international plans, regulations and interactions.

A new urban planning and sustainable development organization/department are proposed by the author within the Hebron plan figure (9.1). This proposed structure is consistent with the organizational improvement project currently initiated by Hebron
District. The overall mandate of the department will be to advance the sustainable development objectives of Hebron District through long range urban planning and community economic development. The organizational structure of the proposed department has four divisions as outlined below and each division will have a Director.

Figure (9.1): Proposed Organizational Structure Department of Urban Planning & Sustainable Development.

The above department's organization is the only proposal that needs further discussion, study and review from different urban planning and legal departments at the Palestinian Government and Local Authority’s institutions. This department aims mainly to coordinate and manage the Hebron District municipalities and government institutions for all activities related to urban planning and sustainable development; however the new department needs more explanations and job description and it will not rely on any other institutions and will have consulting function rather than implementation and direct role in projects’ works.
9.2.2 Dividing Hebron District to Planning and Administrative Zones

New planning area at the district level does not mean canceling the role of municipalities and local council; but it is a tool to help the municipalities and increase the coordination between close municipalities. For example, some of the municipalities have more labor force and skilled laborers but they have shortage in land and areas to establish new industries or production projects. At the same time, nearby villages or towns have more lands and open spaces but they do not have much labor force for the land demands. The two localities could benefit from each other in big and district/level project like landfill, treatment plants, industrial areas …etc. When, more areas have the same planning and administrative body, the opportunity to get fund and carry out strategic projects will be more which means that the local people will be the beneficiaries from this division.

According to the meeting with different parties (Palestinian ministries, Hebron’s municipalities, local councils, planners, key figures, businessmen), and according to many similar plan like Amman metropolitan, the author came up with the conclusion that the planning, administration and sustainable development recommend that Hebron District should be divided into three main planning and administrative areas as indicated in map (9.1).
The proposed sustainable development plan divides Hebron into three planning and administrative areas (north, central and south); each area will have its own borders and land use policies. All sustainable development actions of each area will be decided by local committees as well as district level committees and councils. This division is a result of various reasons like the existing conditions, people preferences also from planning wise, each area has its own features and identifications as mentioned in the previous
chapters. Moreover, dividing Hebron District to three areas will give the opportunities for better and specific land use management and residential design with better coordination with utilities services, better protection of local cultural/natural heritage, providing local transportation system which all lead to employment areas, increase the benefit from open spaces…etc¹. The boundary line for each area is mentioned above as a detailed draft plan depending on the author’s drawing in ruefully and estimated way after receiving the target planners’ and decision makers’ views, which helped identify the administrative and planning boundaries. Due to this, the population and the land-use analysis, the administrative and planning boundaries were determined using a combination of the following criteria. These are only examples and not all the criteria:

- Historical boundaries and urban identifications.
- New urban development projects.
- Existing social, service and industrial conditions.
- Geographical features and topography.
- Local People’s interest and preferences.
- Physical boundaries like main roads, infrastructure projects, natural features…etc.
- Recent municipalities and local councils’ boundaries mentioned in the master plan and decided by Ministry of Local Government.

Such kind of division will facilitate the different companies and utilities service works (i.e. instead of dealing with 16 municipalities and more than 154 villages, they will coordinate and plan three areas; and each area has its own internal plans which will save time and money. Moreover, district and national plans for Hebron District will also

¹ Each municipality in Hebron District has it own procedures and agenda. by creating new big development area that aims to coordinate and manage the near municipalities’ activities. In Hebron, it is clear and known at local level that Hebron has three destinations, north which includes cities like Halhul, Beit Omaar, Suear, and their surrounding villages. Central which includes Hebron city, Ethna, Tarquamyah and Taffouh and south which include Dora, Yatta, Ddhariyah and their surrounding villages.
be more sufficient and applicable as most of Hebron municipalities’ engineers said and proposed during this research.

9.2.3 Overall and Integrated Sustainable Urban Growth Plan

The overall and integrated Hebron district sustainable development growth plan is presented in Map (9.2)\(^1\). As mentioned above, the maps should be read in connection with the previous maps and recommendations, However, this map will provide Hebron District municipalities, Hebron/Palestinian planners as well as the decision markers with the kind of plans needed and how Hebron District can be developed during the coming years until 2025. However, the urban planning and sustainable growth development are processes that need all people and organization public/private input. It also needs local people’s awareness and participation as much as possible. The previous chapters showed how Hebron District is still a version and how plans and studies need to use this district’s potentials in a proper sustainable way in all directions: economical, educational, industrial …etc. Moreover, the political situation and occupation influence Palestinian’s sustainability. All these factors as well as other pressures are forcing planners and municipalities to adopt the sustainability policies immediately, and to share the development activities with others rather than conducting it individually\(^2\).

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\(^1\) This map gathers all sustainable development sectors maps mentioned in the previous chapters. The author puts all layers above each other and the conclusion shows district map with all main urban elements like roads, land use, housing, protected areas, green areas, industrial and employment areas…etc; however this map is only a draft and a general sustainable development map which needs more and more discussion, researches analysis and surveys to have the local and district level sustainable development maps and policies that the District will adopt to ensure that the physical plan is implemented; and the intent of each plan is effectively captured in day-to-day administration of the District.

\(^2\) Chapter three, five, six and seven discuss how each municipality and local council has its own plans and development program different from others. As an example, part of Hebron’s municipalities have complete structure and management system and they use the last software and also ISO certifications; and part of Hebron municipalities is still using old modules and still the new technologies need more time to be implemented …etc.
The comprehensive plan is the ultimate urban planning and sustainable development goals. The author presents part of projected urban elements, but more elements need also to be presented and decided in detailed plans; and it is strongly recommended to develop such kind of maps by using new mapping and programs software like GIS which will facilitate the work and give more accurate features.

Map (9.2): Perspective for the Overall Hebron District Growth Plan (Source: Drawing by Author).
The overall Hebron district growth plan represents the approach to growth management; however, the growth structure describes the key designations used in the District growth plan and illustrates the overall growth structure of Hebron District. Hebron District infrastructure includes transportation, transit systems and policies. The survey’s policies require careful integration with new developments to ensure high standards and affordability. The new development will be concentrated within the designated built-up areas and the designated urban industrial areas by reusing the developed land, intensifying vacant parcels and encouraging densification appropriately used wherever required. Designated expansion areas within the designated urban Industrial Areas will accommodate traditional expansion growth within the limited growth area and the growth will be accommodated within designated settlement built-up and expansion areas. The limited and un-growth areas include biophysical, cultural and resource-related functions that require caution with respect to new development and the primary growth includes the locations of settlement, intensification, expansion, mixed-use, open space and employment areas that define where the growth will occur and how people will relate day-to-day to their environment (see AMP, 2007). The following conclusions and recommendations have also to be considered and discussed more regarding the overall Hebron District growth plan.

9.2.3.1 Natural Heritage

Environment is the basis of sustainability and green areas, natural resource and forests are the main air refreshing and environment balancing. It is important to have certain preventive measures in order to reserve natural heritage for environment and even economic purposes and basic local people’s needs. The balance between the needs and

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1 The capacity of any proposed main extension infrastructure and network should support the projected people’s demands of the urban area served rather than a single development proposal only as it happened in many places currently in Hebron District. In addition, any urban expansion in this regard cannot cause the loading on the overall system to exceed its capacity resulting in a loss of service quality like water and electricity supply for existing development projects. Increase the capacity of the utilities services in addition to the main extension may be required if the current capacity is exceeded. And in the case the existing service networks and its capacity are enough to provide the required demands of expanded areas, then the below further alternatives and studies via Hebron District municipalities planners, public utilities, and businessmen.
natural heritage protection areas and the objects must be studied well by planners and experts professionals because of its scientific criteria and the need of a consequently high knowledge and experience for accurate assessment. The natural resource also include recharging, catchments areas, highly sensitive landscape, habitant, biodiversity, fertile, agricultural, and cultural heritage areas which should be protected and conserved. The protection of these areas is of great importance for the sustainable development and for preventing random expansion in construction which may demolish sensitive natural resources area. Previously, in chapter six, the author presented the location of the main natural resources and how they could be protected and developed. All of these factors and items must be taken into consideration and more efforts should be extended in order to guarantee a reasonable natural resources protection and conservation. Besides the above, public awareness and businessmen involvement are required mainly for environment and hazard waste generated from their establishments. One of the objectives of Hebron District sustainable development plan is to define the natural heritage which needs to be protected and to provide a legal tool for a comprehensive and dynamic protection approach.

9.2.3.2 Social and Cultural Heritage

Hebron District is 5000 years old, and it has graves of many prophets and messengers like (Ibrahim, yousef and yaquob). The old cities in Hebron have had unique cultural heritage and beautiful buildings and landscapes for thousands of years. These are considered as one of the most important historical and geographical components that should be developed and protected. This is not important only at the local and District level, but it is also important at the national and international levels; and as mentioned before (chapter six), UNESCO now considers Hebron Old City as a part of the global heritage¹. "Hebron has an extensive network of cultural heritage sites that were built in

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¹ The cultural heritage in this context includes:

- Hay or many connected buildings: Groups of individual or connected buildings which are of special value due to their architecture, homogeneity or their place in the landscape from a historic, artistic or scientific point of view, like Hay Al Qazazeen & Khozeq Al Far.
early 6000 B.C. and it has old cities especially Beit Mercem (a major Greco-Roman
city) which are still in evidence and the buildings are from Hebron”s establishment as
an Arab Islamic city after 638 A.D” (Aref, 1991.22-23).

The Hebron old city renovation and maintenance committee conduct various projects;
and many of them are underway to regenerate and develop the old city, including old
zones, Al Qasba Street, old public buildings…etc, which have been designed to
celebrate the Islamic period of Hebron”s cultural heritage. The cultural heritage is
endangered due to a lack of information and knowledge about the cultural heritage both
from administrative and professional planning point of view. Hebron municipalities
should begin a program of corporate social responsibility to create a social contract
between the private sector, non-governmental organizations, international donors and
the government to manage the social and cultural activities and also to assist those with
special needs. The planners and people encourage looking to Hebron as one of the
centers for the arts within the West Bank region attracting artists and visitors from
around the globe. During the research, the author found that there is no approved list
for cultural heritage. The last years witnessed economical and the political changes that
have been destructive to the development of infrastructure and industries. Moreover,
residential areas will consume large tracts of land and may destroy natural and cultural
resources if no careful planning regulates these developments.

9.2.3.3 Infrastructure and services

In general, the conditions of infrastructure in Hebron District are poor. Hebron as other
Palestinian places is still under occupation and most of infrastructure projects are

- Sites: Areas that are of special value due to their significance and interest from an archaeological,
historical, and anthropological point of view as Al-Haram Al-Ibrahim.
- Monuments: Architectural works, works of monumental character including cave dwellings,
inscriptions, elements, and structures of special value from an archaeological, historic, or scientific
point of view, like Balootet Ibrahim.

Infrastructure includes roads, water networks, sewage system, landfill, electricity and
telecommunications. All of these subjects were presented, discussed; analyzed and detailed
recommendations were mentioned in chapter seven.
conducted randomly depending on the donors and political conditions. The Ministry of Local Government, Ministry of Transportation, Ministry of Housing and Public Works and other organizations like PECADR are the main government institutions that control and organize infrastructure projects.

Hopefully, Hebron District is to be an organized and efficient District with modern infrastructure and transportation facilities that meet current and future development needs. These facilities will be provided in a sustainable and orderly manner balancing priorities to upgrade services in existing built-up areas and to expand into new undeveloped areas. Special attention is strongly recommended for transportation with a shift in emphasis from moving vehicles to moving people and goods\(^1\). The location, selection and timing frame of infrastructure sustainable development and urban growth should be controlled and directed by Hebron District municipalities through the development approval process to achieve Hebron people’s goals as reflected in Hebron District sustainability agenda. Sufficient services and infrastructure capacity like roads, transit and storm water capacity, the public utility service providers (water, sanitation and electricity) as well as the providers of community facilities and services (education, healthcare, etc.), should be available to support new urban development and sustainability objective. The capacity of the existing services and infrastructure should be the top priority for ministries, municipalities and donors to accommodate present demand and also new demands resulting from intensification within the existing built-up area. However, the current roads system needs maintenance and complete development and construction projects to pave the new roads and expand the existing ones; and also Hebron District needs a central landfill, central treatment plans and central utilities service\(^2\), other issues in infrastructure service such as using new technologies and telecommunication system Hence, many municipalities and

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1 The planning should be done for creating multi-storey parking for the public, visitors and the governmental employees and these needs to be considered in development agenda mainly in city center areas in Hebron for providing hundreds of parking. The design should be followed with the lines of natural topography and to provide a differentiated streetscape of through and service lanes, sidewalks and planted medians.

2 The location, Specification and related recommendation were mentioned in chapter seven.
governments in the world started the use of a service called E-Service\(^1\). The private sector is strongly recommended to share and have direct involvement in Hebron infrastructure sustainable development plans; also the municipalities should provide the new projects with all infrastructure services except when providing planned incentives for preferred patterns of growth and other community goals.

### 9.2.3.4 Green Environmental District\(^2\)

Environment includes all surrounding items surrounding including air, water, soil, green space, natural resources…etc, and in sustainable development plans, the aim is how to save this item from pollution or risk at present and in future. It is also strongly recommended for Hebron district sustainable urban environment plans to balance between different urban profiles like social, economic, industrial, political conditions infrastructure which means that there is no development without harming the environment. But the new ways of development and new projects should make environment protection the top priority and should reduce pollution as much as possible. Hebron District environment plan must commit to decrease air pollution and the carbon remnants by reducing its reliance on fossil fuels and encouraging the private sector to follow its lead. Wind, solar and renewable energy are expected to be explored

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\(^1\) It is recommended for Hebron District sustainable development plan to be based on principles of transparency, accountability, inclusive citizen participation, and efficiency in service delivery and to depend more on E-Service like E-government tools for utilizing fully and for easy access to the services required all of the time that results with great transparency. Hebron municipalities plan is recommended to use many technologies for better managing the District. For example, a draft computer mapping database is being developed for part of Hebron city master plan and will be accessible to investors and the public on the web and this database will enhance many services including emergency response, using in-vehicle global positioning systems (GPS) and will save lives in the future. It is also recommended to improve people and citizen participation in key civic government decisions like major changes to the Hebron Plan will be subject to public hearings as well the preparation of detailed plans within the districts. Advancements in District management are facilitated by the latest technology. This technology will be used to allow citizens to provide input and have access to Hebron District information that includes web-based mapping. In future, it is expected that the Hebron District e-service will provide 24 hour- services in such areas as development and construction permit approvals and should grow as a smart and electronic District with the technologies that will be used to facilitate this two way flow of information (see AMP, 2007).

\(^2\) The author give environment the top priority in this research and one of nine chapters (chapter six), is devoted for environment only , hence one of the major sustainability goals is environment and How we can protect it and reduce the amount of pollution at local, national and global levels.
as a major alternative energy source and the water presents the major limit to growth for Hebron and therefore the water conservation will be a major theme in sustainable development and the grey water will become a key supply for irrigating the green spaces and even agricultural areas in Hebron District. Moreover, the use of organic materials as composite for agricultural land increases the production amount.

The municipal and organic waste production to be reduced and recycled from the waste should be done immediately via special plants and factories and to consider the water as a source of material rather than a source of pollution. The increase of green areas and forests in Hebron District will provide ample shade during hot summer days and stability to Hebron’s steep and hilly terrain. Moreover, the green areas and trees will provide Hebron with the lungs and natural air refresh tools to support healthy urban growth and to give more satisfactory lifestyle to local people. These natural elements will also provide a variety of landscapes for residents and visitors to enjoy and strongly recommend developing and creating big public parks mainly in the cities of Halhul, Dora and Seear. These parks are located in the northern and southern parts of the Hebron District and the parks will be a meeting point and recreational area for southern, northern and eastern Hebron families. These small forest/Parks will reflect Hebron District aspiration to provide social services that will enhance its neighborhoods and make the living experience more enjoyable.

9.2.3.5 The Integration between Cities and Villages Plans

Cities have master plans with different land use concept conducted in village and also the cities have their own plans totally different from those of villages. The cities have more sufficient urban planning institutional and organizational systems that are not found in the villages plans. Hebron District has a large number of villages and small communities which need more detailed planning scale within the Hebron district plan.

In general, the land use should be implemented within the village regulation act and the master plan, the public framework takes precedent in defining the relation of development to streets, mixing use, integrating use with transportation and transit, locating public facilities and identifying prominent nodes of activity within
communities. The villages plan scale should have a conceptual village plans which will address many urban sectors like land use categories as residential, industrial, commercial/retail, natural and cultural heritage, public and private institutions, corridors, agriculture, extraction…etc. The detailed villages” master plan required in some places should be based on area and conceptual plans to provide the final and complete level of details required in order to review and regulate proposed development. However, the proposed master plan or urban regulation for any city development should be in the same district big plan and should promote economic development, attract business and industries and facilitate the building; quality of life and creating a healthy community (see AMP, 2007).

9.2.3.6 Housing and High Rise Building

Hebron district will witness an increase in housing demands of about 70,000 new flats (see more in chapter seven), which means that more built up areas and more urban expansion and high rise buildings especially in city centers. In general, Hebron building is limited to four-five floors in most of residential and commercial buildings for a long time; and in many cities of Hebron the buildings are still being built below this height. However, a more recent generation of building types that include buildings with up to 10 or even 15-storrey buildings in city center areas with a high land price. These new building types forced individual builders and businessmen to accommodate new building uses and increased densities within the existing urban fabric in Hebron District. The visitors will find most of the historic and new buildings in Hebron and will

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1 It is necessary to make comprehensive assessment of the infrastructure and service networks in both primary and limited growth areas and as required establishing the broader services context for an assessment of required network service upgrades, extensions, and the definition of service areas. Another part of assessment is the servicing capacity with development limits and the required servicing upgrades for different sectors like water & sanitation availability & capacity, roads and transportation, storm water drainage patterns & capacity, electricity & telecommunications availability & capacity, and solid waste collection & disposal.

2 Housing and the related sustainable development principles related to it were discussed along with sustainable housing tools that were recommended in chapter eight.

3 The fertility rate in Palestine/Hebron is one of the highest percentages in the world with the population number increase (doubled each 25 years) and the people need of housing, infrastructure and services to be increased. However, in spite of the absence of a plan, Hebron continues to grow and change at a fairly rapid pace depending on developer benefits and topography limitations.
be glad with the natural limestone found within the Hebron old cities; and others make use of more modern manufactured cladding materials like aluminum that margin limestone which gives the District a sense of order and consistency. The short and long term housing growth strategy for Hebron District plan should start immediately and the municipalities / local government should coordinate with roads capacity plans and infrastructure services availability before giving building permit. And the planners should be careful that the new urban expansion and housing projects mainly in city centers will not affect the people’s life style and the green landscapes or pedestrian areas inside city streets.

However, based on researches, urban studies and academic engineering analysis of the Hebron District sustainable development implementation polices and tools, the service Hebron district will be defined with associated service standards and unified legal framework. In general, the standard of services provided will match the housing density and the amount of urban development projects in order to increase affordability and cost recovery and decrease environmental negative impacts. The highest levels of public and utilities servicing are recommend to be provided to the highest densities and the lowest levels to the lowest densities as a rational standard. however, this kind of work will depend on the sustainability plans and local people’s needs in each municipality and local village council within Hebron area.

**9.2.3.7 Land Use Planning and Development**

As mentioned before, the master plans and land use mark for most of Hebron cities are prepared randomly without comprehensive and detailed engineering studies; however, it is expected that Hebron land use sustainable development plans will build a complete planning framework about land use. It aims at developing the district’s database and showing all of urban sites like old cities, cultural heritage places, public land, private lands, projected infrastructure services…etc. This database along with the new land use

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1 It is expected that in Hebron District transportation Sustainable development will have more and well design pedestrian areas linked with a cities roads network, the pedestrian areas also should have safe sidewalks, shopping and green streets, souks, and hiking trails …. This will enhance the social fabric of the city by facilitating social interaction and encouraging a healthier lifestyle for its citizens; and to achieve this vision, it requires a major shift in public awareness, planner thinking and behavior.

2 See more discussion and facts about the land use conflict and sustainability policies in chapter eight.
sustainability plans will ensure that Hebron district land will be used in a sustainable way and that the coming generations will find enough land for their projects and life needs. Moreover, landmark projects must be developed in the right locations to respect their status and surroundings while at the time preserving the natural areas and resources and the growth outside the urban industrial areas which needs to be directed in a coordinated manner to villages because they have more lands and green areas. Finally, the public improvements must be phased properly with the integrated and new development for creating a real sense of place and vitality. As much as local people, businessmen, land owner develop and share in land use planning; the plans will be successful and achieve sustainability goals.

**9.2.3.8 Economical and Industrial Policies and Improvement**

Hebron district has thousands of companies, factories and shops, also thousands of jobs. This large number of trade and economic organizations needs development plans and serious management system; also the Palestinian government should support this sector and encourage the companies’ owners to employ the local laborers and establish new projects. Moreover, it should try to manufacture what could be manufactured in Hebron rather than bring it from outside, which means that demand for labor force will increase and unemployment will be reduced.

The Ministry of Industry and National Economy is strongly recommended to coordinate with municipalities and other service utilities before awarding any trade license, and also to ask the factories’ owners for a complete environmental impact assessment and traffic study impact for their factories before being established. The location of new industrial areas is recommended to be selected where scattered industrial development applications can be consolidated with appropriate access to infrastructure system, housing, transit and other urban amenities. This policy also introduces a new industrial classification system; however, the implementation of this sustainable development plan requires review and analysis of the capacity and specifications of existing service networks and proposals for upgrading the network service and extension of service networks. The industrial sector is a very important one
for the economical development and job opportunities and so it needs more analysis and recommendations. This item was presented in chapter five and eight.

9.2.3.9 Engineering Consulting and Sustainable Urban Planning Studies

To prepare Hebron District sustainable development plans and besides the above facts, discussions and recommendations in all chapters, Hebron sustainability plan includes a lot of subjects and urban studies like infrastructure, urban corridor plans, housing, land use, heritage studies, landscape design studies, social development, and sector plans, some additional studies must be prepared and fully studied by specialized consultant as mentioned below:

- Hebron land use and urban design studies
- Hebron agricultural studies
- Hebron urban environments studies
- Hebron development corridor master plan
- Hebron District transportation study
- Hebron housing plan
- Hebron economical studies
- Hebron heritage and old cities studies
- Villages and communities plans

The above items are the main but not all of these studies need funds, political decision and qualified teams.

9.2.4 Sustainability Plan Implementation and Schedule

The sustainable development plan is a process and accumulative work rather than end point; and many parts of sustainability plan could be achieved after a long time and after all of processor activities are finished. However, Hebron District municipalities and local authorities are recommended to develop the regulatory and management framework from the beginning in order to manage and control the sequence of development and to supervise all plans” activities. Hebron District growth management perspective will continue for the coming (15-20) years and after that perhaps further legal frameworks or sustainable principle will be adopted rather than what is available
now. Hebron District sustainable development phasing plan is recommended to divide the planning and implementation period (2010 to 2025) into three main flexible phases that could be changed and reviewed from time to time (each two or three years). However, the following is a brief summary of the three main development phases and what each phase will contain.

**Phase 1: Short Term (2010 – 2015)**

This phase will focus on the urgent and essential need for the people and mainly the infrastructure and services; and it should also include the studies and sustainable development plans. However, at this phase, the urban expansion should be limited as much as possible to avoid any risk in land use or urban environment. The following items are proposed to be done during this phase.

a. Building the regularity framework and creating the Hebron District planning department.

b. Preparing the initial sustainable development plans for all urban sectors via special consulting offices and planners, and this issue needs the input from all of the related ministries, municipalities and civil society organizations.

c. Encouraging the businessmen and international companies to open new businesses in Hebron district.

d. Increasing the public awareness of the importance of environment and sustainability.

e. Designing large areas of vacant land inside the cities built-up areas.

f. Ras Al Joura, Al Hawooz and Wadi Ahareya development areas inside Hebron city and all of surrounding cities centers are also considered development areas.

g. Benefiting from the rich cultural heritage to develop sectors like tourism, trades and historical researches, and also raising public awareness, participations, engaging the children of the community in civic affairs and nurturing the civic leadership of tomorrow

h. Hebron District growth centre and the main roads located in the three main urban corridors should emphasize the existing service capacity upgrades and limit
service extensions into designated expansion areas to improve the quality and streets’ landscape.

**Phase 2: Medium Term (2016 – 2020)**

The second phase is expected to have the major district projects and to improve the economical conditions. It will also include implementing and supervising the sustainable urban studies, plans and output prepared in the first phase. The following main activities are excepted be conducted during this phase:

a. The e-service is expected to be available and used for most of governmental and administrative services within Hebron district during this phase.

b. Increasing the green areas and improving the cities’ and streets’ landscape.

c. Constructing large infrastructure projects like sewage treatment plants, district landfill, main road and bridges, electricity generation plants, water treatment plants, darning and water networks, of course the plants for these projects are a part of phase one and the fund to build these projects form government, private or outside resources are also part of phase one plans and development studies. However, improving the industrial conditions by creating new industrial areas is strongly recommended in this phase. Hence, in phase one the infrastructure is developed and studied and with the plans carried out which will give a big advantage to constraints on industrial and economical parts.

d. Establishing new industrial and economical areas.

e. Building health, educational and social buildings and providing the necessary services, depending on phase one plan.

f. Increasing the use of solar and wind energy to be one of main energy and electricity sources.

g. Providing equal opportunity and easy access to community services, jobs and participation for everyone.

h. Increasing job opportunities and local people’s income at this phase especially the new jobs at new industrial and business areas.
Phase 3: Long Term (2021 – 2025)

The previous two phases are restricted to the areas inside built-up area; but this phase recommend to constrain the strategic project inside the built-up areas and the urban expansion outside the built up areas (i.e. to develop the village and rural areas); hence more than 50 % of Hebron District area is empty and classified as Area C. During this phase, it is expected to improve Hebron”s environmental, cultural and economical conditions. However, Hebron District and the public utilities should coordinate their budgets for upgrading and expanding the service networks which will be based on the phasing priorities of Hebron District and the annual improvement budget capacity of Hebron District and the public utilities.

Finally, it is hoped that this research, recommendations and output will be a good background and guideline for the planners, decision makers and future PhD s in the same field. The author understands that the previous recommendations are not the most perfect, but they are the best he has and that they could be used at the time being.
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Annexes

(Questioners)
Perspectives of Growth Management and Sustainable Development
In West Bank, Hebron District as a case Study

Transportation Questionnaire -Institution Surveying

Dear Participant,

The below Questionnaire prepared by Ismail Talahma ,the Urban Planning PhD Student at the University of Kassel-Germany , for the thesis Topic "Perspectives of Growth Management and Sustainable Development In West Bank, Hebron District as a case Study", and under the supervision of Prof.Uwe Altrock.

The outcome data from this questioner will be used to assess the current Transportation needs, conditions and the police required to have sustainable development in Hebron District, However you have been randomly selected to complete the following questionnaire, and If at any time you are uncomfortable or do not wish to disclose information, you are free to leave questions blank or discontinue the survey. There are no direct benefits for your participation, although your ideas and information will be helpful the above researcher to explore the transportation and sustainable development conditions for the Hebron District, and the research confirm all of individual information will be kept confidential and used for academic purpose only.

Finally, in the case you have any questions or concerns regarding this Questioner/Survey or the research please contact the below Name.

With warm Regard,,

Ismail Talahma
Dora-Hebron
Tel  : 0599-316389
Email : Talahmah@yahoo.com
First: General Information

a. Institution Name :

b. Type of Institution (Government, Public, NGOs, etc):

c. Type of work and beneficiary sector :

d. Number of employees:

e. Address and contact :

Second: Existing Urban Environment Issues

a. Is there legislation or policy related to the roads transportation system and sustainable development in your institution? If yes:

- Describe how these are applied?

- Describe how effective these?

- Describe what are the main transportation issues? (e.g. poor roads quality, traffic, air pollution, absence of fund, etc)

b. Which stakeholders (institutions; community groups, etc) are affected by each of these issues and how?
c. Describe how your organization assesses the severity of Transportation issues in terms of:

- Impact on Environment
- Impact on land use
- General traffic system

d. Describe to what extent are traffic issues factored into local and national economic development plans?

e. Document one “best practice” case study of transportation planning and management, drawn from one of the following areas below.

- Road maintenance.
- Construct new roads
- Flooding and drainage
- New transit system
- Link between transportation and land use
- Transport/traffic management and air pollution.
Third: Institutional Setup

a. What are the main partners (communities, public and private sectors) that your organization works with in addressing Transportation System issues?

b. Explain how your organization co-ordinates efforts to improve urban environment problems?

c. Explain how does your organization collaborate with municipal governments and other local stakeholders to improve Transportation System issues?

d. From what sources does your organization mobilize resources (e.g. financial, technical,) to support activities that improve Transportation System and sustainable development problems?

e. Describe what role of the ministry of transportation and ministry of local government plays in response to Transportation System issues? (e.g. policy, regulation, awareness raising, resource provision)

f. How are responses to Transportation System issues coordinated with urban planning?
g. Describe the legislation, if any, employed by your organization to regulate activities which affect the sustainable development and urban environment?

h. Explain what are the constraints your organization faces in enforcing compliance with this legislation?

i. Describe what are the constraints that stakeholders face in complying with this legislation for:
   - Public institutions
   - Private institutions

j. Which institutions, public and private, assemble and disseminate information about the urban environment?

Fourth: Capacity Building and Training

a. What are the capacity building and training priorities and needs of your organization to address land use/Urban Environment and sustainable development issues?

- For key ministries the focus should be Transportation System policy development, and formulation
• For NGOs the focus should be programme development and support to communities.

• For all organizations how are capacities building and training priorities and needs identified?

b. Describe the ongoing capacity building and training activities within your organization which have a bearing on the urban environment?

c. Who provides the training (unit in ministry, independent training and continuing education institutions (private or public)?

d. Describe the capacity building support received from bilateral and multilateral agencies and donors to improve urban environment issues?

• How is this support co-coordinated?

• Does this support meet your priority needs?

• If it does not meet your needs explain why not?

e. Identify and describe the main capacity gaps and training needs within the organization with a focus on:
• Transportation policy

• Training: indicate training needs, who needs to learn what? (policy makers, professionals, technicians)

• Land use policy framework and related to land use

• Transportation System planning and management capability;

• Ensuring compliance with Transportation legislation
Perspectives of Growth Management and Sustainable Development
In West Bank, Hebron District as a case Study

Urban Environment Questionnaire-Institution Surveying

Dear Participant,

The below Questionnaire prepared by Ismail Talahma , the Urban Planning PhD Student at the University of Kassel-Germany , for the thesis Topic "Perspectives of Growth Management and Sustainable Development In West Bank, Hebron District as a case Study", and under the supervision of Prof. Uwe Altrock.

The outcome data from this questioner will be used to assess the current urban environment, Green areas and natural heritage needs, conditions and the police required to have sustainable development in Hebron District, However you have been randomly selected to complete the following questionnaire, and If at any time you are uncomfortable or do not wish to disclose information, you are free to leave questions blank or discontinue the survey. There are no direct benefits for your participation, although your ideas and information will be helpful the above researcher to explore the urban environment conditions for the Hebron District, and the research confirm all of individual information will be kept confidential and used for academic purpose only.

Finally, in the case you have any questions or concerns regarding this Questioner/Survey or the research please contact the below Name.

With warm Regard,,

Ismail Talahma
Dora-Hebron
Tel : 0599-316389
Email : Talahmah@yahoo.com
Perspectives of Growth Management and Sustainable Development
In West Bank, Hebron District as a case Study

Economical Questionnaire -Institution Surveying

Dear Participant,

The below Questionnaire prepared by Ismail Talahma, the Urban Planning PhD Student at the University of Kassel-Germany, for the thesis Topic "Perspectives of Growth Management and Sustainable Development In West Bank, Hebron District as a case Study", and under the supervision of Prof. Uwe Altrock.

The outcome data from this questioner will be used to assess the current Economical needs, conditions and the polices required to have sustainable development in Hebron District. However, you have been randomly selected to complete the following questionnaire, and if at any time you are uncomfortable or do not wish to disclose information, you are free to leave questions blank or discontinue the survey. There are no direct benefits for your participation, although your ideas and information will be helpful to the above researcher to explore the Economical and sustainable development conditions for the Hebron District, and the research confirms all of individual information will be kept confidential and used for academic purpose only.

Finally, in the case you have any questions or concerns regarding this Questioner/Survey or the research please contact the below Name.

With warm Regard,

Ismail Talahma
Dora-Hebron
Tel : 0599-316389
Email : Talahmah@yahoo.com
First: General Information

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Second: Existing Economical Setting

a. Is there legislation or policy related to the Economical sustainable development in your institution? If yes:

1. Describe how these are applied?  
   ______________________________________________________
   ______________________________________________________
   ______________________________________________________

2. Describe how effective these?  
   ______________________________________________________
   ______________________________________________________
   ______________________________________________________

b. Describe what are the main Economical issues? (Investment, services, jobs, financial, etc)  
   ______________________________________________________
   ______________________________________________________
   ______________________________________________________
c. Which stakeholders (institutions; community groups etc) are affected by each of these issues and how?

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d. Describe how your organization assesses the severity of Economical sector in terms of:

1. Impact on the poor and other vulnerable groups ?-----------------------------

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2. Impact on women ?---------------------------------------------------------------

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3. General health impacts ?----------------------------------------------------------

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e. Describe to what extent are Economical issues factored into local and national economic development plans?

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f. Document one “best practice” case study of Economical planning and management, drawn from one of the following areas below.

1. Road and infrastructure maintenance?

2. Construct new District Projects?

3. Link between Economical and land use?

4. Informal sector activities?

5. Public Services?

Third: Institutional Setup

a. What are the main partners (communities, public and private sectors) that your organization works with in addressing Economical system issues?

b. Explain how your organization co-ordinates efforts to improve Economical conflicts?

c. How are responses to Economical System issues coordinated with urban planning?
d. Describe the legislation, if any, employed by your organization to regulate activities which affect the sustainable development and urban environment?

e. Describe what are the constraints that stakeholders face in complying with this legislation for:

1. Public institutions

2. Private institutions

f. Identify and describe the main capacity gaps and training needs within the organization with a focus on:

1. Economical planning, policy and development

2. Training: indicate training needs, who needs to learn what? (policy makers, professionals, technicians)

3. Ensuring compliance with Economical legislation
First: General Information

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Second: Existing Urban Environment Issues

a. Is there legislation or policy related to the urban environment and sustainable development in your institution? If yes:

   1. Describe how these are applied? --------------------------------------

   2. Describe how effective these?-----------------------------------------

   3. Describe what are the main environmental issues? (e.g. poor solid and liquid waste management, traffic, air pollution, polluted water bodies, etc)-----------------------------------------
b. Which stakeholders (institutions; community groups etc) are affected by each of these issues and how?

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c. Describe how your organization assesses the severity of urban environment issues in terms of:

1. Impact on the poor and other vulnerable groups?

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2. Impact on women?

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3. General health impacts?

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d. Describe to what extent are environmental issues factored into local and national economic development plans?

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e. Document one “best practice” case study of urban environmental planning and management, drawn from one of the following areas below.

1. Water resource management
2. Flooding and drainage
3. Solid and liquid waste management
4. Urban agriculture
5. Informal sector activities
6. Transport/traffic management and air pollution

Third: Institutional Setup

a. Describe what role your organization plays in response to urban environmental issues?

1. 
2. 
3. 
4. 

b. What are the main partners (communities, public and private sectors) that your organization works with in addressing urban environmental issues?

1. 
2. 
c. From what sources does your organization mobilize resources (e.g. financial, technical,) to support activities that improve urban environmental and sustainable development problems?
   1. 
   2. 
   3. 

d. Describe the legislation, if any, employed by your organization to regulate activities which affect the sustainable development and urban environment?
   1. 
   2. 
   3. 

e. Describe what are the constraints that stakeholders face in complying with this legislation for:
   1. Public institutions?
   2. Private institutions?

f. Which institutions, public and private, assemble and disseminate information about the urban environment?
   1. 
   2. 
   3. 
Fourth : Capacity Building and Training

a. What are the capacity building and training priorities and needs of your organization to address Urban Environment and sustainable development issues?

1. For key ministries the focus should be urban environmental policy development, and formulation?

b. Describe the ongoing capacity building and training activities within your organization which have a bearing on the urban environment?

1. 
2. 
3. 
4. 

2. For NGOs the focus should be programme development and support to communities?

3. For all organizations how are capacity building and training priorities and needs identified?

4. 
c. Identify and describe the main capacity gaps and training needs within the organization with a focus on:

1. Environmental policy?

2. Training: indicate training needs, who needs to learn what? (policy makers, professionals, technicians)?

3. Environmental policy framework?

4. Urban environmental planning and management capability?

5. Ensuring compliance with environmental legislation?

The End